Environmental Protection Technology (EPT): Diploma

(April 2016-September 2018)

Program Review Reports

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Program Review Self-Study
Environmental Protection Technology

Date reviewed: October 1, 2016

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1. Program Overview and Context

Program Description

The program is a two-year (24 months) program, full time, technology diploma program with an integral co-op component. It is designed to provide the students with a broad education in the fundamental science as well as the specific technical requirements of the environmental industry (government, private sector, including consulting firms, and NGOs).

The EPT program does not provide different options. Graduates must all complete the same academic courses. Students have the option to opt out of the work term components of the co-op education, with permission of program chair and co-op coordinator.

The program is located on the Langley campus, and is housed in the Faculty of Science and Horticulture. There are two full-time instructors (one full-time faculty/chair, and one lab supervisor/part-time faculty) as well as five specialized part-time instructors; this does not include instructors for service courses.

Brief History of the Program

The program opened its doors to the first applicants in September of 1990, and has operated continuously since. It has incorporated a co-op education component from its inception and the large majority of its graduates have been employed in the environmental industry.

Curriculum Profile

The EPT program delivers a broad set of practical skills based on an integrated, hands-on training program that gives graduates a good working knowledge of physical and life sciences, including general biology, ecology, toxicology, chemistry, physics and statistics. With this foundation they become proficient in sampling air, water and soil, analyzing and reporting results, and placing these results in the appropriate legal and ethical context.

We submit that the program meets the seven skill sets defined by the Ministry of Advanced Education, and the core competencies as defined by KPU.

We also submit that the program meets the requirements for accreditation at the technologist level, which consists of a number of general core competencies common to all technologists, as well as the discipline-specific competencies required for accreditation.

These claims are detailed in section 4 of this report.

The list of courses required by the students is provided below. The courses in bold are the ones that contain a significant hands-on or experiential learning component.

Year One Fall	
BIOL 1110	**Introductory Biology I**
CBSY 1110	Business Problem Solving with Spreadsheets
CMNS 1140	Introduction to Professional Communication
COOP 1101	Job Search Techniques
ENVI 1106	**Environmental Chemistry I**
ENVI 1121	Environmental Issues
MATH 1117	Environmental Mathematics
Year One Spring	
BIOL 1210	**Introductory Biology II**
ENVI 1206	**Environmental Chemistry II**
ENVI 1216	**Introduction to Earth Sciences**
ENVI 1226	**Health & Safety**
ENVI 2315	**Water and Soil Sampling**
Year One Summer	
COOP 1150	**Work Semester 1**
Year Two Fall	
BIOL 2322	**Ecology**
ENVI 2305	Environmental Toxicology
ENVI 2310	**Solid Waste Management**
ENVI 2901	Environmental Research Seminar
MATH 1115	Statistics I
PHYS 1400	Energy, Environment, Physics
Year Two Spring	
COOP 2150	**Work Semester II**
Year Two Summer	
ENVI 2405	**Environmental Legislation**
ENVI 2410	Water Resources Protection
ENVI 2415	**Air Quality Monitoring**
ENVI 2420	**Contaminated Site Management**
ENVI 2902	**Environmental Research Project**
PHYS 1401	**Environmental Physics Lab**

2. Scope of Review

Program Review History

This is the first review of the program.

External Accreditation, if applicable

The program has been accredited by an external agency since shortly after its creation. The outside agency ensures that graduates are eligible to membership in ASTTBC (the Applied Science Technologists and Technicians of BC). ASTTBC originally accredited the program, but subsequently the association has contracted accreditation to CTAB (Canadian Technology Accreditation Board), until 2015) and now to TAC (Technology Accreditation Canada). The program is undergoing its accreditation process at the same time as the internal review process.

Program-Specific Issues

The EPT program is designed around a two-year cohort, without electives, and must fulfill specific criteria in order to maintain its accreditation status. This imposes some restrictions on how program changes can be implemented. A further restriction is the fact that the program benefits from several service courses, courses which may not be easily amenable to changes that are EPT specific (this includes BIOL 1110, 1210, and 2322; CBSY 1105; CMNS 1140).

Another program-specific issue is its relatively high attrition rate (typically above 25%; this figure is obtained by comparing first year class lists with graduation records). This stems in a large part because the program is accredited and must provide a complete technologist education within two years, which means that the program is quite demanding. However, some of the attrition problem may be compounded by registration issues and prerequisite issues.

3. Program Currency and Relevance

Discipline/Sector Context

The status of environmental employment is largely governed by environmental regulations. In general, employment trends follow investment in construction and infrastructure. Expected changes in everyday activities may come from requirements to monitor substances now considered exotic (e.g., endocrine modifiers), and advances in technology in instrumentation and remote data acquisition. The breadth of scientific education in the EPT program makes it likely that our graduates will be able to nimbly adapt to changes in the industry.

Industry trends are documented, among other places, by the environmental careers organization EcoCanada (see http://www.eco.ca/).

Competitive Context

This program is unique in the province. Other programs also enable graduates to become members of ASTTBC but are longer in duration and have a different focus: BCIT's Environmental Engineering Technology and Vancouver Island University's Bachelor in Natural Resource Protection both require 4 years full-time and are more closely aligned to traditional engineering disciplines. BCIT's diploma of Fish, Wildlife and Recreation and Bachelors in Ecological Restoration or Renewable Resources are complementary programs, as opposed to competitive, as their focus is quite distinct.

Student Demand

The program has a small intake of 20 students once a year, in September. Enrollment for first year has been healthy, the program now being fully subscribed, with a waiting list.

Summary and Recommendations

At this point the program appears healthy, both from an enrollment perspective or with respect to its currency (according to enrollment figures and feedback from appendices 2 and 5). Better coordination with sister institutions as well as other programs or departments at KPU may be a worthwhile objective.

Changes may need to be made mostly with respect to the results of the external accreditation process. One of the issues that may arise is the low level of training in project management; this has led to the program proposing changes to remedy this situation, but these have not been implemented yet.

4. Quality of Curriculum Design

Curriculum Profile

The EPT program operates within the mission statement of KPU, which is

> ***KPU offers all learners opportunities to achieve success in a diverse range of programs that blend theory and practice, critical understanding, and social and ethical awareness necessary for good citizenship and rewarding careers.***

In EPT, a broad set of practical skills is developed based on an integrated, hands-on training program that gives graduates a good working knowledge of physical and life sciences, including general biology, ecology, toxicology, chemistry, physics and statistics. With this foundation they become proficient in sampling air, water and soil, analyzing and reporting results, and placing these results in the appropriate legal and ethical context.

The program meets the seven skill sets defined by the Ministry of Advanced Education, which are: written communication, oral communication, group collaboration, critical analysis, problem resolution, learn on your own, and reading and comprehension, as there are exercises that address these skill sets in many of our courses.

The program also delivers the core competencies as defined by KPU: creative and critical thinking; media literacy; social intelligence; scientific and technical capacity; global perspectives; indigenous culture; history and world views; environmental stewardship; and social and economic entrepreneurship. Most of these are delivered in the technical or science courses of the program; awareness of global perspectives, indigenous culture, and competing world views are discussed in our Environmental Issues and Environmental Legislation courses. Students also engage in social activism through their law course, and are encouraged to participate in community based activities in their research class as well as through the environmental student club SAFE. However, topics pertaining to economic entrepreneurship are not currently delivered in much depth.

These competencies overlap nicely with the prescribed general competencies required for technologists by our external accreditation agency. These competencies common to all technologists are:

- **Ability to write technology reports**: all the outcomes are broadly met in ENVI 2901 and 2902.
- **Proficiency in Mathematics:** Basic math competency is delivered chiefly in MATH 1117, with applications used in ENVI 1216, 2310, 2410, and 2415, among others; however, vector operations, derivatives and differential calculus, and integrations are not covered. More emphasis is put on statistical outcomes, delivered in MATH 1115, further expanded in ENVI 2901.

- **Project management:** Only some of the outcomes in this category are delivered; project management as such is not formally taught. Students learn project management techniques through experiential learning, in ENVI 2310 and 2901 with respect to the design of a project, its scope and sections, its time management and scheduling, and its human resource management (for the ENVI 2310 group project).
- **Competence in physical and natural sciences**: All outcomes are strongly met with our suite of courses in basic sciences (BIOL 1110, 1210, 2322, ENVI 1106, 1206, 1216, 2305, PHYS 1400, 1401), most of which are lab-based and require students to follow experimental protocols and analyze results
- **Ethics, Sustainability, Contracts, Codes**: This section is not completely covered in our program as codes and contracts are not discussed in our program, except during a visit of a member of ASTTBC as a guest speaker, to explain the purpose of the association and its relevance for students.
- **Communications**: The general outcome is delivered in CMNS 1140. The specific technical outcomes, particularly graphical communication, are mostly delivered in our discipline specific courses where students prepare lab reports (BIOL 1110, 1210, 2322, ENVI 1106, 1206, 1216, 1226, 2315, 2415, and 2420, PHYS 1410) or reports (ENVI 1121, 2305, 2310, 2405, 2410, PHYS 1400).
- **Computer knowledge**: All students take a computer course (CBSY 1105); further skill development occurs in ENVI 2315 (using datalogging equipment) and ENVI 2415 (downloading and analyzing a large data file).
- **Health and safety:** ENVI 1226 is a course on safety. Students also get instruction in lab safety in ENVI 1106 and in field safety in ENVI 2315.

Specific competencies are also delivered, and a minimum of five competencies is required by the accreditation agency. We submit that the program delivers eight discipline-specific competencies (including the first five which are the focus of the external accreditation process):

- **Analysis:** Students learn to interpret, analyze, and report results largely through ENVI 2315. Several of these competencies are also reinforced in ENVI 1106, 1206, 2410, 2415, and 2420, as well as BIOL 1110, 1210, and 2322, and PHYS 1401.
- **Instruments and equipment**: Students learn to select, operate and calibrate sampling and analytical equipment in ENVI 2315, 2415 and 2420, as well as (to a lesser degree) in ENVI 1106, and 1206.
- **Air and water pollution**: Students learn extensively about air and water quality measurements and pollution control through ENVI 2415 (for air) and ENVI 2410 as well as ENVI 2315 (for water); biological aspects and toxicology are covered in BIOL 2322 and ENVI 2305.
- **Quality assurance and quality control**: This set of competencies related to sampling is fully covered in ENVI 2315 and further developed in ENVI 2420.

- **Professional reporting:** Interpreting and communicating scientific data are fully covered through different courses. All of the outcomes are delivered by the research courses ENVI 2901 and 2902. CBSY 1105 delivers the computer aspects, while students learn out to produce technical reports and presentations in CMNS 1140 and ENVI 2405. ENVI 2415 and ENVI 2315 ensure that students know how to manipulate large data files and interpret results into well-organized reports.
- **Waste management**: The ability to evaluate waste sources and manage waste is developed in ENVI 2310, as well as in ENVI 1226.
- **Environmental studies, impact, assessment, and remediation**: Students learn about environmental impacts and remediation in a variety of courses. Students learn about waste characterization and minimization in ENVI 2310. ENVI 1216 covers watersheds assessments, while ENVI 2405 and 2420 cover different aspects of remediation, ENVI 2410 discusses riparian impacts, and ENVI 2415 and 2420 ensure students learn about the comparable effectiveness of various pollution control measures. Students learn about ecosystem analysis and impacts in BIOL 2322.
- **Environmental Law**: all learning outcomes are met within the context of environmental protection, with focus on pollution prevention and habitat protection, including jurisdictions issues and stakeholder interests. EPT graduates can document compliance to environmental acts and enforce regulations, as well as gather data for environmental assessments or appeals. These outcomes are delivered through ENVI 2405, and complemented in ENVI 2410, 2415, and 2420.

Degree-Level Standards

Not applicable (this is not a degree program).

Discipline/Sector Competency Survey

The survey of potential and actual employers (detailed in Appendix 2) yielded interesting results. The competency statements submitted for feedback were the ones prescribed by the accreditation body for general competencies, as well as those selected for our specific discipline. The ability to communicate with stakeholders and the ability to recognize hazards were ranked as highly important in junior employees, two competencies that our program delivers satisfactorily (this is also supported by comments responders). In general, responders who knew our program or our grads were positive about the outcomes of the program.

Conversely, skills in project management are seen as important by two thirds of the responders, and this is a recognized weakness of our program that we plan to address.

Other comments suggested better skills with spreadsheet (we believe that this has already been addressed by revamping the CBSY course), and more practical sampling skills in biology or ecology.

Career Pathways Map

The program prepares students for work upon graduation, while a few of the students opt to continue their studies. Employers include environmental contractors, environmental consultants, NGOs, and the government sector, and the nature of the jobs is extremely varied, ranging from site monitoring to public education. An insight into the career tracks of the graduates may be gained by following the progression of the students in the cohorts that start every September. The narrative below is based on private conversations or emails and communications with the co-op coordinator.

Fifteen students entered the program in 2010. Of these, five changed program rather than relocate from Richmond to Langley (the program changed campus in 2011). Three dropped out later for personal reasons (including a lucrative job offer). Only five students graduated after two years; of these, one took a position with Kerr Wood Leidal, one with Tervita, and one with ISH (the other two are unknown). One international student graduated a year later and accepted a position in Japan. Finally, after a hiatus, one other student graduated in 2014 and took a position at Metro Vancouver (Water).

Fifteen students were admitted into the program in 2011. Six graduated in 2013, accepting technical positions with Kerr Wood Leidal, ISH, Metro Vancouver, Pinchin West and SLR Consulting (one is unknown). Another five graduated, in 2014 or in one case in 2016, with positions at Ammity, Stantec, and Hemmera. Two are unknowns. One student is still continuing his studies on a part-time basis, while three from that cohort did not continue.

Fourteen students were admitted in 2012. Five graduated in 2014, accepting technical positions with TRI, City of Surrey, Stantec, and KPU's continuing professional studies, one unknown. Two graduated in 2015 (for positions at Tervita and Golder Associates), and one in 2016 (with SGS Associates). Four students are continuing their studies but two dropped out.

Sixteen students joined the program in 2013. Three graduated in 2015, and six in 2016. Of this group two were international students now working in China, two have non-technical jobs, three started their careers with Kerr Wood Leidal, Whorley Parsons, and PWGSC, and two are continuing with further studies. Four are continuing the program on a part-time basis, while three have dropped out.

The cohort starting in 2014 has 16 students. Of these, six are expected to graduate in 2016, while four have dropped out. Two of the students who graduated this August already had jobs awaiting them (Keystone, ISH).

Curriculum Development and Review Processes

In order to remain relevant and current, the program relies on the formal feedback of our advisory committee and of the external accreditation process.

The competencies required by the external accreditation process do not map out to the program courses on a one-to-one correspondence; for instance, one specific competency (air and water pollution) is delivered in two separate courses. Conversely, competencies in waste management, as defined by TAC, are covered partially by two courses (ENVI 2310 and 2420) but not fully delivered by either. This is to be expected of any academic program but the mismatch seems to originate largely from the way the program was originally designed: the courses reflect their discipline origin (e.g., air pollution, toxicology, ecology) as opposed to fields of activity (e.g., impact assessment, monitoring and enforcement, pollution control), which is the approach followed by the external accreditation body (TAC), from which the competencies are derived (to avoid duplication and contradictory findings between the internal review and the external accreditation process). While a wholesale reorganization of the program curriculum is not considered at this point, this mismatch suggests new possibilities for adjusting curriculum within pairs of courses, particularly where this opens opportunities for increased experiential learning.

The program also benefits greatly from the feedback of employers gathered by the co-op office. The program also maintains an dynamic alumni group on social media. Members post about developments in the industry, and their opinion can be canvassed when substantive changes are considered for the curriculum. (Some of the "Employers Comments", in the appendix, are not necessarily from members of industry who already know the program.)

However, the program is constrained in the changes it can implement by the fact that many of its courses are not designed specifically for the program (e.g., biology, communications, computers, physics, etc.).

In the case of service courses that have a large variety of students, specific EPT focus may be provided in assigned sections; the difficulty encountered is in registration management, where students may not take the assigned section for a variety of reasons.

In the case of courses that have transfer status at other institutions with strict criteria, such as the biology stream, the specific course content cannot be tailored to the specific needs of the EPT students.

Summary and Recommendations

The current curriculum and the mix of theory and hands-on, practical skills training is appropriate for the program. There does not appear to be a need for a major overhaul. However, opportunities for improvement exist.

The graduates are currently exposed to very little training relevant to project management. Yet, project management has been identified by the accreditation body, as well as by some on our advisory committee, as important and useful skills. Ideas have been discussed to remedy this issue and the review may provide a platform for further discussion as to the best way to implement this, with respect to curriculum content, extent, and location within the current sequence of courses.

Students learn to sample biota in the suite of biology courses, but this is not done in a systematic way nor is it integrated with the rest of the curriculum. In particular, lack of training in plant identification and other items of environmental field surveys has been mentioned by our alumni. This is due to the fact that there is little flexibility in changing the learning outcomes of that suite of courses, since they are bound by their transferability agreements. Nevertheless, avenues to adapt curriculum should be explored.

Further changes may also be implemented, particularly those that promote the integration of the curriculum from course to course, further develop experiential learning opportunities, and contribute to align the curriculum to the needs of the workplace.

We expect that recommendations to that effect may come from the external accreditation process, and will wait upon such recommendations before developing curricular changes except for the competencies in project management outlined above.

5. Quality of Instructional Design

Delivery Modes

The program has a single delivery mode, in-class instruction. There are no on-line options, since the program has an important hands-on component. However students may opt for on-line delivery for some general courses such as CMNS 1140 (Applied Communications).

The capstone research project ENVI 2902 is mostly delivered through one-on-one meetings and lab or field supervision.

The co-op work terms are, of course, held in the workplace.

The program is striving to incorporate further experiential learning into its curriculum. Towards that end (and for other pedagogic reasons) the program is considering experimenting with intensive-mode delivery (i.e., courses offered consecutively as opposed to simultaneously within a single semester) in order to facilitate longer exercises and field trips. The need to accommodate courses from other disciplines which are currently offered on traditional semester mode poses a constraint on this initiative.

Instructional Excellence

All our instructors are encouraged to experiment with new instructional strategies, including pursuing opportunities for experiential learning. Instructors are free to choose the instructional strategy best suited for their course as they see fit.

There is no specific strategy to incorporate scholarship within the classes of the program; however, instructors are encouraged to develop case studies or other relevant teaching approaches that draw on their work experience.

Experiential Learning

The most important instance of experiential learning in the EPT program is the integration of the two co-op work semesters to the curriculum. Beyond that, a few courses have already incorporated experiential learning components in their instruction strategy, in particular ENVI 2310 (Langley campus solid waste audit), ENVI 2315 (monitoring of Logan Creek), ENVI 2405 (community model by-law project), as well as the capstone project ENVI 2902.

Assessment Methods

Following senate policy AC4, students are provided with a clear description of the marks allocation and grading process in their course presentation. Within the stated marks allocation, instructors are free to select assessment types that best reflect the expected learning outcomes from each course.

Faculty Qualifications and Currency

The following individuals currently teaching the EPT courses where the program discipline learning outcomes are delivered are listed below.

Andrew Frank, M.A. Mr. Frank is an award-winning environmental communication expert who specializes in First Nations issues. He teaches ENVI 2405 Environmental Legislation.

Diane Grady, Ph.D. Dr. Grady is a part-time instructor who is the instructor for ENVI 2420 Contaminated Sites. She has over twenty years of experience in the consulting field, having worked for Golder Environmental before starting her own firm, Grady Environmental, in 2004.

Gregory Harris, M.Sc. Mr. Harris teaches the program ecology course, BIOL 2322. Mr. Harris has over 20 years teaching experience; he also worked as an interpretative officer for the National Parks and Wildlife Service and as a natural history museum manager in Australia.

Christopher Hauta, M.Sc. A chemist by training, Mr. Hauta has over 15 years of experience in laboratory supervision and five years experience as a field and lab environmental technician at Environment Canada. Mr. Hauta teaches ENVI 2315 Water and Soil Sampling, as well as ENVI 1226 Health and Safety.

Paul Richard, Ph.D., P.Ag. Dr. Richard trained as an agricultural engineer for his Bachelor's and Master' degrees and completed a multidisciplinary doctorate in natural resources management. He chairs the program and teaches ENVI 2310 Solid Waste Management, ENVI 2410 Water Resources Management, and ENVI 2415 Air Quality. He has over twenty years of teaching experience and has also work as an environmental consultant.

Teaching and supervising duties for the capstone research project, ENVI 2901 and 2902, are shared by Chris Hauta and Paul Richard.

Currently, the instructors who teach the ENVI and other science classes not already mentioned above are:

Mr. Gregory Harris, M.Sc., teaches BIOL 1110 and 1210

Mr. Chris Kennedy, Ph.D., teaches ENVI 2305

Mr. Darryl Loewen, M.Sc., teaches PHYS 1401

Mr. John Martin, M.Sc., teaches ENVI 1216

Mr. Don Mathewson, M.Sc., teaches PHYS 1400

Mr. Paul Richard, Ph.D., teaches ENVI 1121

Ms. Allyson Rozell, M.Sc., teaches MATH 1115 and 1117

Mr. David Sud, M.Sc., teaches ENVI 1106 and 1206

The co-op coordinator, EPT graduate Ms. Melissa Drury, B.A., teaches COOP 1101 and coordinates the work-term placements COOP 1150 and 2150.

Other program courses delivered by other faculties (CBSY 1105, CMNS 1140) have instructors that rotate from year to year.

Summary and Recommendations

There are no obvious issues with the qualifications of our instructors. However, a good grasp of the overall objectives of the program may be lacking from several of our instructors (as shown in Appendix 3), since they are hired to teach specific courses.

One course of action would be to organize a meeting of instructors along with available members of our advisory committee to facilitate an exchange of information.

6. Quality of Student and Instructor Experience

Student Success

The description of career tracks provided in section 4 indicates that the majority of students find employment in the environmental industry. Feedback from the advisory committee and alumni, as well as assessment through the accreditation process, indicate that the program is successful in preparing students for employment (see Appendices 2 and 5).

Retention rate is lower than ideal (as discussed in section 4). While it is expected that a demanding program would experience some attrition, we expect that the attrition could be lowered through better enrollment management and prerequisites adjustments.

The program has started to give priority to applicants who have work experience or post-secondary experience; it is too early to see whether this approach will increase our graduation rate. We would like to see a change in the registration process, so that applicants offered a seat be automatically registered in the relevant courses and sections upon accepting the offer. This would facilitate enrollment management but mostly would contribute to develop a sense of identity and of belonging to a given cohort. Peer support is essential to students success and a cohort identity would help in that respect.

A few students who fail or get low grades in particular courses find their progress hampered by the fact that some of the required courses are offered only once a year. This means that failing a single course may result in requiring a full extra year to graduate, a situation that some students find problematic from a financial standpoint.

Alumni Outcome Analysis

The majority of responding alumni reported that the program had made them well prepared or moderately prepared for the competencies listed, with the exception of project management. Comments indicate that the majority of alumni have been happy with the program. In particular, many comments point out the usefulness of the co-op component of the program, and the practical nature of the hands-on exercises.

Some comments for improvement pointed out that the biology, chemistry, or physics components could benefit from being more applied towards the environment and more sampling oriented (please see appendix 5).

Student Satisfaction

The current students seem to be satisfied with their experience as students in the EPT program, according to the survey; the overwhelming majority responded positively (very or somewhat satisfied) with respect to competencies or skills questions. The only

exception was with respect to “selection of appropriate computer hardware or software” where 40% of the respondents indicated they were neither satisfied nor dissatisfied (please see Appendix 4).

Both the program itself and KPU appear to enjoy a good reputation among the current students, as they indicated these as important factors in applying for the program. However, it is difficult to determine an effective strategy for improvements in marketing the program from the comments. It does appear that recommendations from high school personnel was not useful, but neither was social media. Feedback from KPU personnel and visits garnered better responses, but these indicate that students had already identified KPU as a possibility.

Faculty Satisfaction

The program relies on several contract instructors or instructors from other departments. Many expressed a lack of understanding of the overall context for the program and the expected competencies outside of their courses (please consult Appendix 3).

Summary and Recommendations

The surveys did not reveal any major issue with respect to the program, the delivery of its competencies, or the liaison with the workplace.

One course of action that has been identified within the faculty satisfaction survey would be to organize a meeting of instructors along with available members of our advisory committee to facilitate an exchange of information.

The alumni expressed the strongest support for the co-op component of the program (please see the comments in Appendix 5), and we agree that this is an essential component that must be strongly supported. Avenues where the co-op component could help in reinforcing a sense of identity and belonging, and in integrating learning achieved during the work terms, should be explored.

Attrition may be reduced through fostering a sense of identity and removing obstacles to graduation that seem unrelated to alumni success. Block registration would help in creating a sense of cohort identity (and peer support network) early on. Repatriating as ENVI courses service courses that currently deliver key program learning objectives (such as BIOL 2322 ecology) would also help improving graduation rates by reducing unnecessary prerequisites; as well, this would allow for the delivery of competencies more closely suited to program learning outcomes (such as field and stream biota sampling, or indicator species identification).

7. Quality of Services, Resources and Facilities

Program Resources

The Langley campus has ample classroom space to deliver the EPT program. The majority of the classrooms are equipped with computer audio-visual facilities. The classroom most often used for the EPT program is room 1305, but several other rooms are also used. While it is possible to complete some courses on-line (e.g., CMNS 1140), the bulk of the class instruction occurs face-to-face in classrooms.

The laboratory facilities are described below (under specialized equipment).

The library holds a collection of approximately 160,000 print books and 223,000 e-books that includes 6 print journals directly supporting EPT and 5 online journals (these are direct subscriptions paid from the ENVI line; there would be many more related to ENVI but paid by other lines, i.e. BIOL, CHEM, HORT). Students have access to over 80 research databases, including Science Direct, SpringerLink, and Wiley Online that are particularly relevant to EPT students. The Langley campus library has 5 meeting rooms for student group work, and 50 computer stations. Some of these computer stations are in a separate room which may be used by instructors to provide hands-on computer research instruction without disturbing other library users. The librarian who supervises acquisitions for the program also manages the EPT research guide website, found at http://libguides.kpu.ca/ept.

Administrative and Support Services for Students

The Faculty of Science and Horticulture has dedicated academic advisors. The co-op office is the key player in connecting students not only with co-op employers during the course of their studies, but also with entry level positions. This is done through an informal network of contacts, as well as through a Facebook EPT alumni page. Support services include Academic Advisors and the Learning Centres, Career Services, Services for Students with Disabilities, and Counsellors.

Specialized Equipment and Software

Numerous courses in the EPT program require students to perform lab exercises. Most of these activities occurs in two large rooms adjacent to the main classroom, rooms 1325 and 1345. These rooms host the bulk of the lab work for ENVI 1106, 1206, 1226, 2315, 2415, and 2420, as well as BIOL 1110, 1210, and 2322. Room 1345 is ideally suited for experiments requiring manipulation of chemicals (sinks, fume hoods, burners, etc.) while room 1325 is designed for biology-type experiments (microscopic examinations, etc.). Room 1325 being the larger room of the two, it is also used for activities that require ample space (such as suiting up and using SCBAs in ENVI 1226). Room 1310 is used by

ENVI 1216 students for activities such as cartography or rock identification, as well as by students in PHYS 1401. CBSY 1105 uses the computer lab, room 2090, to develop hands-on computer skills.

Room 1685 is an undergraduate research laboratory, used by EPT students for their capstone project, where chemical analysis of samples may be carried out as needed. The lab facilities currently include a digestion heating block and steam distillation apparatus for Kjeldahl nitrogen, an ion chromatograph, a gas chromatograph with FID and mass spectrometer, an HPLC, and the assorted complement of analytical balances, drying oven, etc. An ICP for elemental analysis is in process of being added to the equipment. Room 1355 serves as a home for the air monitoring equipment (e.g., ozone, NOx) used in ENVI 2415.

Summary and Recommendations

The resources available to the program and to the program students are sufficient to deliver a program that is current and relevant to the marketplace, and provides students with adequate hands-on experience; this is reflected in alumni comments (please see Appendix 5). While it is always an ongoing struggle to acquire equipment and facilities that represent the state of the art and maintain these, recent acquisitions show that the program is well supported.

8. Quality of Program Relationships and Connections

Relationship with other KPU Programs/Departments

There is little direct overlap between the EPT program and other offerings at KPU. However, the program benefits from a number of service courses offered by other departments, both within and outside the faculty. Conversely, several of the program courses accept students from other programs who choose ENVI courses as science or Q electives. Program students are given priority registration in these courses.

Program students or graduates may take courses in Urban Ecosystems, Sustainable Agriculture, or Policy Studies, but this is not common. The program is working closely with the Geography department to develop a B.A.Sc. degree in Environmental Geography. We expect this to be an attractive option for program graduates who wish to get a degree; this would also facilitate the option of taking specialization courses such as GIS or hydrology.

Articulation and Credential Recognition

Until recently very few of the ENVI courses had been considered for transferability. This is now being remedied and many of our courses will be submitted for transferability. Few transfer directly to a similar course but the desirability of having unassigned credits granted for these courses has recently been made clear.

The program ladders with the degree offered at Royal Roads. Clarification is currently being sought with respect of admissibility of our grads into BCIT's environmental engineering program (our grads gain admissibility to the Habitat Restoration program, as well as the Environmental Health program, with one bridging course).

Connections with Discipline/Sector

The program has had an advisory committee since its inception; the committee, comprised of industry representatives, meets twice a year.

Relations with employers are maintained through the co-op office, as are relations with alumni.

Public Information and Community Outreach

The program maintains a website and a Facebook page, and hosts an information session twice a year.

There is some informal outreach, in particular for volunteer work, to the community organized either by the students themselves through their environmental club or via faculty. For instance, our students have the opportunity to participate in a yearly sampling exercise conducted by the City of Surrey.

Summary and Recommendations

There are no obvious issues with the program relations and connections, through improvements are always possible.

The program should continue its initiatives to get more courses submitted for transfer credits, and intensify its outreach towards sister institutions. Support of and communications with other departments or programs at KPU, especially Geography, Urban Ecosystems, Sustainable Agriculture, and Policy Studies, are important to improve student opportunities, especially post graduation.

Community outreach should continue, and target more efforts in social media presence. This would be beneficial for recruitment (many of our applicants are not high-school based) as well as for the development of community-based learning opportunities.

9. Conclusions and Recommendations

No major issues were uncovered in the program with respect to definition and consistency of learning outcomes, enrollment, balance of practical skills and academic knowledge, instructor qualifications, resources, or currency and relevance. We are thankful that the program is well supported by our administration. The surveys indicated the particular importance of the co-op component of the program, and this should continue to be supported and if possible strengthened.

Changes could be made in a number of areas, however, that would improve the program. Change may be mandated by our external accreditation process. One of the curricular weakness identified is the lack of project management training; this should be remedied.

A better integration of the overall objectives of the program within its individual courses could be improved. Among the possible remedies are:

- Improving communication within the various instructors of the program, many of whom are contract instructors or service course instructors;
- Modify the curriculum in the courses that deliver ecology or biology to increase the level of practical field skills;
- Modify registration management so as to facilitate the creation of a true cohort in the service courses that have multiple sections.

An overview of the recommendations discussed in this document is presented in Table 1 below.

Table 1 – summary of recommendations.

Incorporate project management topics into the curriculum.
Seek bloc registration to foster sense of identity (and ease planning for service courses).
Repatriate key courses such as BIOL 2322 to help focus outcomes and reduce attrition.
Arrange a meeting of instructors along with available members of our advisory committee.
Explore ways for the co-op component to help foster a sense of identity and integrate learning achieved during the work terms.
Liaise with other departments or programs at KPU, especially Geography, Urban Ecosystems, Sustainable Agriculture, and Policy Studies.
Get more courses submitted for transfer credits.
Continue community outreach and target more social media presence.

10. Responses from the Dean/Associate Dean

Program Overview

1. What do you see as the program's greatest accomplishments over the last 5 years? How have you used these successes to direct the future of the program?

    - The program continues to produce competent, qualified students who either go onto further studies at other institutions (e.g. for Bachelor's degree) in the field or employment in the field.
    - The program also has external industry accreditation, which is important to the program and to its graduates in procuring work in the field.
    - The program meets the seven skill sets defined by the Ministry of Advanced Education.
    - The program meets the core competencies as defined by KPU.
    - Students completing the program will be accredited at the technologist level.

2. Does the program adequately fulfill the purpose for which it was intended? If not, how can it be improved?

    - Yes, it does. Accreditation by the external National Industry organization (Technology Accreditation Canada) speaks to the program's fulfilling its purpose.

3. How does the program's curriculum support the following:

    Graduates' pursuit of meaningful employment and further education

    - The curriculum is responsive to industry needs and is revised on a regular basis through multiple regularly-scheduled consultations with the Program Advisory Council.
    - The curriculum is validated through the external accreditation process.

    Graduates' pursuit of meaningful employment and further education

    - Please see above.

4. Based on your knowledge of the discipline/sector, what challenges to and/or opportunities for program growth do the following present:

    Student demand (past, present and future)

    - Student demand for this program has always been strong and has increased over the past few years. Infrastructure exists to expand the program but an expansion will require an influx of general operating funds and funds to hire additional faculty and staff.

Comparable programs at competing institutions

- The KPU EPT program is the only 2 year Diploma in BC. All environmentally-focused programs have been seeing a similar surge in interest.

Trends and changing contexts in the discipline/sector

- One challenge is that this discipline is often in a state of change, as it must respond to continuing changes in local, provincial, and federal law. As mentioned previously, through regular consultation with the Program Advisory Council, the program quickly adapts to these changes.

5. With reference to the challenges and/or opportunities you identified in the previous question, what plans are in place for program growth and development?

    - There are no plans to expand this program in the near future. We have only started to see increased interest and will monitor this over the next two-three years and act accordingly if the data indicates this is the correct way to proceed.

6. What resources, institutional support, and/or external support would help address the program's plans for growth and development?

    - Any expansion of the program will require an influx of general operating funds and funds to hire additional faculty and staff.

7. Collectively, what qualifications and other human resources are required so the program will be able to make the changes required to improve and remain current?

    - Some of the instructors in this program are experts who are working in the field. It may be necessary to hire more faculty members who teach only their specialty.
    - Service courses provided by other Departments need to be revised to focus more on the needs of the program or be replaced with specific EPT-focused content (e.g., biology, ecology, math, physics, communications, and to some extent, chemistry).

8. What areas should the program focus on for the short range (less than 6 months), midrange (6 mo. – 2 years), and long range (over 2 years) program directions and improvement?

    - Short range: revision to curriculum to add project management content, EPT-specific courses in service areas (as per above); build more experiential learning in all courses not just ENVI ones.
    - Mid-range: work towards more integrated courses, modularized similar to Quest University delivery model
    - Long-range: continue with providing students with well-respected, accredited program

Institutional Considerations

9. In what ways does this program align with Vision 2018, the Academic Plan and the Faculty plan? What could be done, if anything, to strengthen the alignment?

Alignment with Vision 2018:

- The program aligns with all aspects of Vision 2018. Instructors and instructional associates are inspiring, as many are experts in their fields and maintain their careers outside of teaching. Students clearly learn about the responsible stewardship of environmental resources, as this is an integral part of the program. Research is a main element of the program as is community engagement. There is direct and continuous interaction with the industry via alumni and the Program Advisory Council. The program uses innovative teaching methods where relevant experiential learning is incorporated in most courses.

Alignment with the Academic Plan 2018:

- The program aligns with all academic goals
- Exceptional learning environments
- Students learn both inside the classroom and in the field at actual sites
- Experiential learning
- See above. In addition, co-op is an integral part of the program
- Learning outcomes
- Learning outcomes are attuned to industry needs and are informed by the Program Advisory Council and by industry accreditation
- Student success
- Students successfully procure employment in the field upon graduation or go on to further studies in the field at other institutions.
- Alignment with the Faculty Plan through the following:
- Novel, innovative courses
- Student-led research embedded in program
- Continued community partnerships and experiential learning

10. How does, or could, this program interface with other programs at KPU?

- Students in this program already take courses offered by other Departments and Faculties: Biology (BIOL 1110 and 2322), Business (CBSY 1110, CMNS 1140), Math (MATH 1115 and 1117), Chemistry (ENVI 1106 and 1107), Geography (ENVI 1216) and Physics (PHYS 1400 and PHYS 1401).
- The Faculty of Arts is moving forward with a Bachelor of Applied Science in Environmental Geography which will have the majority of the EPT program as the first two years – will be a highly desired degree completion program.

- Many ad hoc interfaces within specific courses with other Departments, particularly with respect to student-led research programs (e.g., Horticulture, Brewing, ISH, Physics, Biology, Sustainable Agriculture). These are encouraged.

External Connections and Support

11. What does the program do to ensure that it is regarded by those in the field or industry as a leader in relevant education and training?

    - The program has an active and engaged Program Advisory Council and Alumni Group.
    - This program must undergo accreditation from a National body every 3 years. The present KPU Program Review is being conducted in tandem with this external accreditation (Technology Accreditation Canada).

12. How could the program improve its connections with the field or industry?

    - The program already has an active and engaged Program Advisory Council.
    - It is important that the Program Chair or representative attend all BC Articulation meetings to stay abreast of changes in local programs.

13. What does the program do to engage the community?

    - The majority of the student-led research projects directly involve the community. Many courses have components where student work with the community on projects and assignments (e.g. work with local government to monitor air and water quality, develop policy for local environmental NGOs).

14. What additional steps could be taken to enhance connections with external groups such as professional associations, industry, agencies, institutions, alumni, high schools, etc.?

    - There is already a robust relationship with industry and professional associations.

Role of Dean / Associate Dean

15. With respect to this program, what are your most significant (a) successes and (b) challenges in your role as Dean / Associate Dean?

    Successes:

    - Renovation of underutilized space into state-of-the-art Langley Multidisciplinary Undergraduate Research lab and securing of advanced high quality analytical equipment for use in multiple EPT courses and by other FSH programs. This has provided many more industry-relevant opportunities for student-led research.
    - Increased enrolment fostered by robust recruitment and program promotion by FSH Communications and Event Specialist.

- Increased community awareness – student led, faculty supported.

Challenges:

- Up to this year, a major challenge was the lack of relevant laboratory analytical equipment for student use.
- Keeping up to date with other BC programs, particularly BCIT, with respect to degree completion requirements (rules keep changing with little or no notice).
- Transfer credit and admission of highly desirable mature students with unconventional backgrounds and various other admissions related issues.
- This program would benefit greatly by an influx of International students but it is difficult to know how and if this program is actually promoted abroad.

16. In what ways can the institution better support you in your role as Dean / Associate Dean to achieve the desired program improvements?

- We have recently benefited greatly from the Provost, with respect to funds for key capital purchases, for which we are grateful. The Program is now in a good place with respect to faculty/staff and infrastructure/equipment.
- We have a good working relationship with the various areas under the Office of the Registrar but would like to see more flexible PLA and transfer credit opportunities with the Dean having more autonomy in allowing waivers, etc. There has been a recent trend for applications from mature students coming from a variety of educational and workplaces experiences and we need to ensure we capture this groups by having quick response times, and flexibility in admission and transfers.

Final Comments

17. What else do you think is important to add about the program that is not covered in the previous questions?

- I would like to extent congratulations to Paul Richard (Department Chair) for compiling an excellent, comprehensive and honest report at the same time as submitting the extensive report required by the accreditation body. I also would like to thank IAP for relevant and helpful survey data.
- I would like to reiterate a few points to ensure they are carried forward in this review:
    - Add project management content to curriculum.

- Create new ENVI courses to replace service courses offered by other Departments to ensure EPT students are receiving relevant content and training.
- PLA and more flexible transfer credit mechanism for admitting students coming from a variety of educational and workplace experiences.

11. Appendices for Self-Study Report

Provided in separate document.

ENVIRONMENTAL PROTECTION TECHNOLOGY
Self-Study Report Appendices

List of Appendices

Appendix 1: ADMINISTRATIVE DATA Environmental Protection Technology

Diploma Program

Contents

June 16, 2016

ADMINISTRATIVE DATA Environmental Protection Technology

Diploma Program

ENROLMENT DATA

Enrolment by Academic Year: Students Enrolled in KPU Environmental Protection Technology Courses

	2010/11	2011/12	2012/13	2013/14	2014/15
FTE	18.6	18.1	21.6	30.7	27.0
Headcount	55	66	66	102	119

Data Source: R:\IAP\Strategic Enrolment Management (SEM)\SEM 2015. Enrolment Dashboard. By Course. Course Faculty: Science and Hort. Course Department: Environmental Protection Tech.

Enrolment by Academic Year: KPU Diploma of Technology in Environmental Protection

	2010/11	2011/12	2012/13	2013/14	2014/15
FTE	29.8	24.4	31.1	37.6	32.0
Headcount	43	36	38	39	41

Data Source: R:\IAP\Strategic Enrolment Management (SEM)\SEM 2015. Enrolment Dashboard. By Program. Program Faculty: Science and Hort. Program Department: Environmental Protection Technology. Breakdown by Program Department.

Definitions

FTE	Full-time equivalent (equivalent to number of students taking full course load (not just full-time course load) as of stable enrolment date
Headcount (FTE eligible)	Headcount used for FTE calculations. After the stable enrolment date this includes students who withdrew from the course, as well as students who enroll late. Since the date is based on stable enrolment date for full term, first session (which has an earlier stable enrolment date) withdrawals are included.

Data Source: N:\dept\iap\Strategic Enrolment Management (SEM)\SEM 2015\Course Faculty enrolment

ADMINISTRATIVE DATA Environmental Protection Technology

Diploma Program

ENROLMENT COMPARISONS

KPU's Share of Enrolment: Environmental Control Technologies/Technicians Programs

	AY 2010-11		AY 2011-12		AY 2012-13		AY 2013-14	
Credential	**All CDW**	**KPU Share**	**All CDW**	**KPU Share**	**All CDW**	**KPU Share**	**All CDW**	**KPU Share**
Diploma	161	26%	156	22%	163	23%	137	28%

Data Source: N:\dept\iap\Strategic Enrolment Management (SEM)\SEM 2015\working files\CDW Enrolment

Comparable Programs in the Province (Diploma)

Institution	Program
VIU	Green Building And Renewable Energy
SEL	Renewable Energy Technician
OKAN	Water Engineering Technology Diploma
OKAN	Water Quality Technology
TRU	Water Treatment Diploma

Definitions

CDW	AVED's (Ministry of Advanced Education) Central Data Warehouse. It contains records for all students at BC public colleges, institutes and teaching universities.

STUDENT PROFILE

Profile of Students by Academic Year: KPU's Diploma of Technology in Environmental Protection (Co-op and non-Co-op options)

Student Profile	2010/11	2011/12	2012/13	2013/14	2014/15
Headcount	43	36	38	39	41
% Female	58%	67%	61%	64%	54%
% 22 years or younger	26%	25%	42%	41%	27%
% Domestic	95%	94%	89%	92%	95%

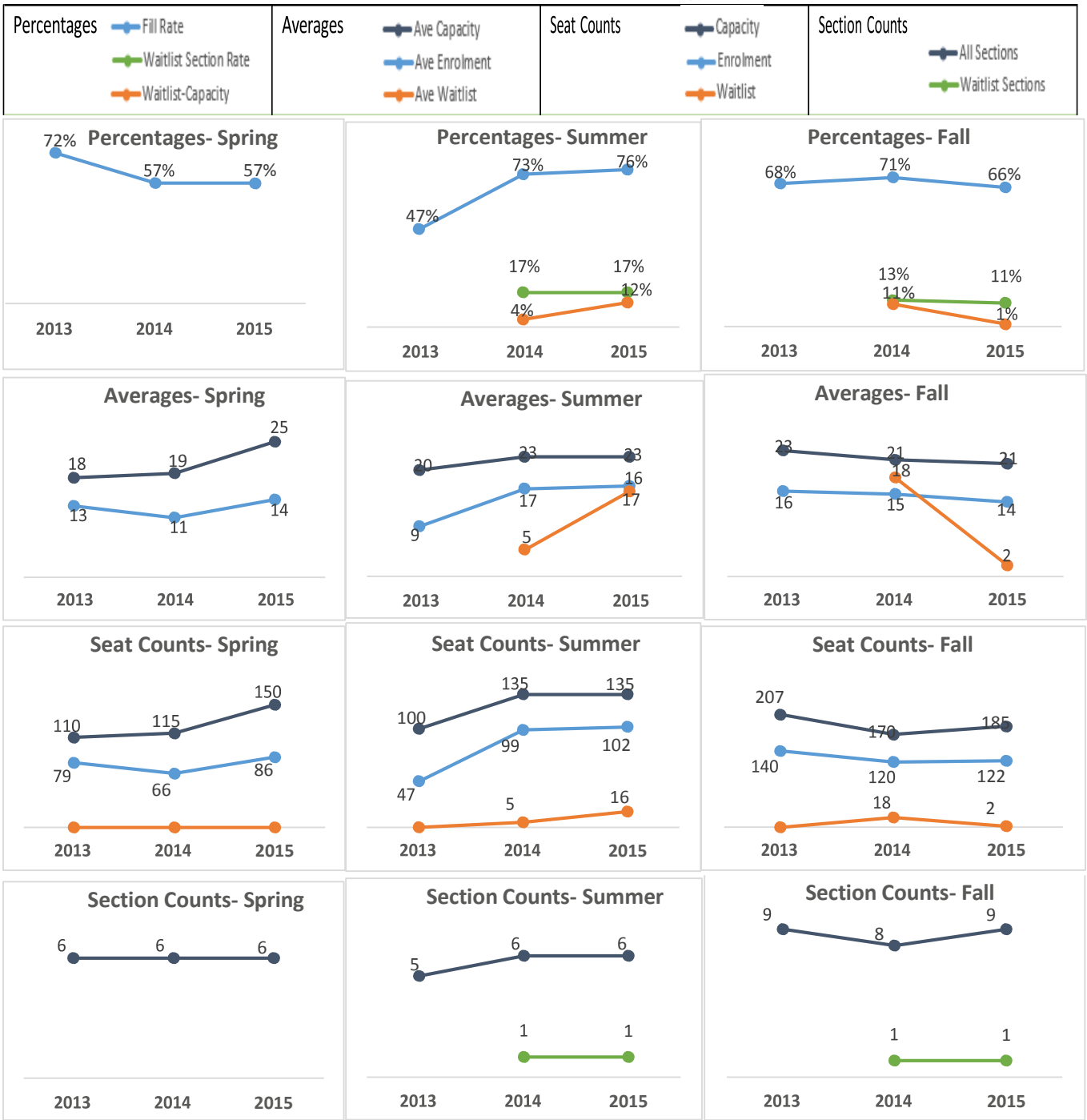
Data Source: R:\IAP\Strategic Enrolment Management (SEM)\SEM 2015. Campus Planning Dashboard.

ADMINISTRATIVE DATA Environmental Protection Technology

Diploma Program

UTILIZATION AND WAITLIST DATA

Utilization and Waitlist Rates for KPU's Environmental Protection Technology Department



Data Source: N:\dept\iap\Strategic Enrolment Management (SEM)\SEM 2015\Waitlists and Utilization. Science&Hort: Environmental Protection Technology Department.

Diploma Program

Definitions

Capacity	maximum number of seats available in a unit (depends on the menu selection)
Enrolment	number of seats filled as of stable enrolment date
Utilization	percent of seats taken from the unit capacity (enrolment/capacity) x 100
Waitlist	number of students waiting for a seat offer in a *Closed Section*. The numbers here are as of the last day before the waitlists are purged.
Waitlist Rate	percent of students on the waitlist based on the unit's capacity; (waitlist/capacity) x 100

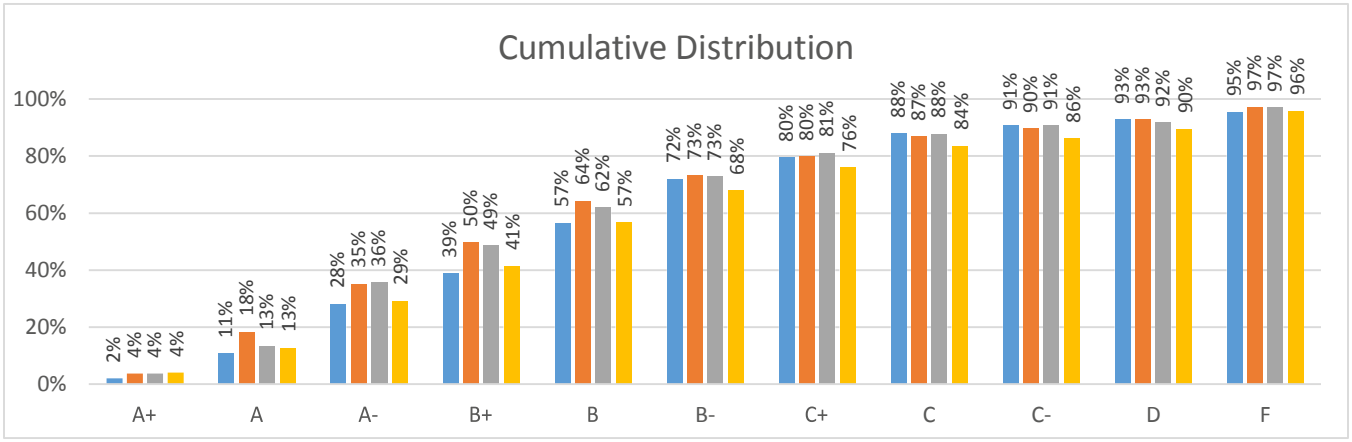
Data Source: N:\dept\iap\Strategic Enrolment Management (SEM)\SEM 2015\Waitlists and Utilization

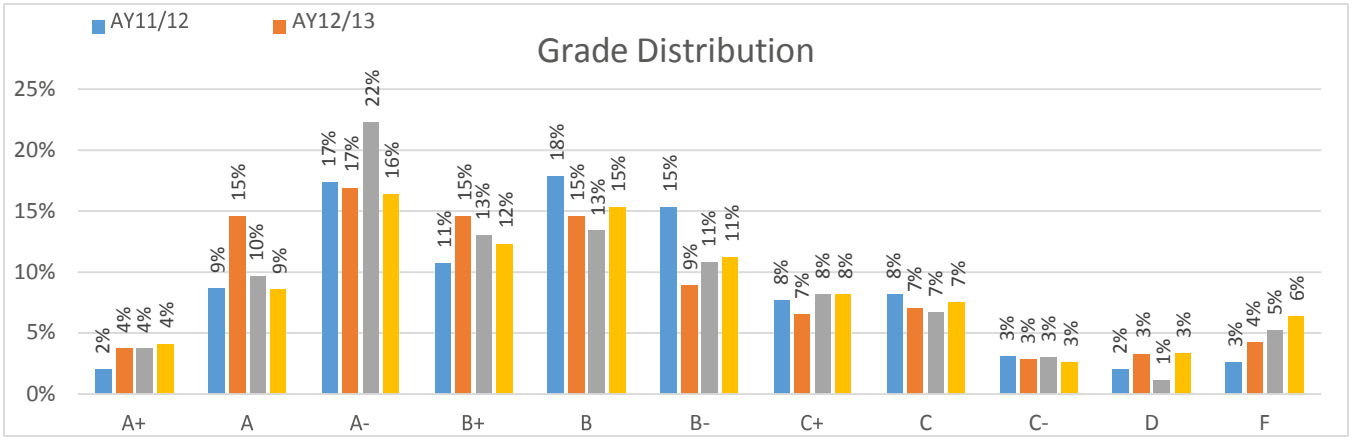
ADMINISTRATIVE DATA — Environmental Protection Technology

Diploma Program

GRADE DISTRIBUTION DATA

Grade Distribution by Calendar Year for Environmental Protection Technology. Faculty of Science and Horticulture





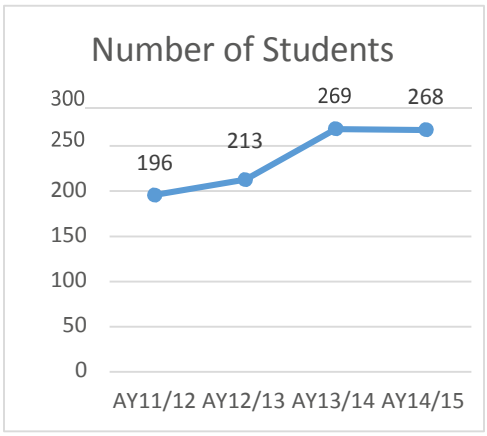
Data Source: N:\dept\iap\Strategic Enrolment Management (SEM)\SEM 2015\Grade Distribution. Numeric by Year; Fall/Spring/Summer

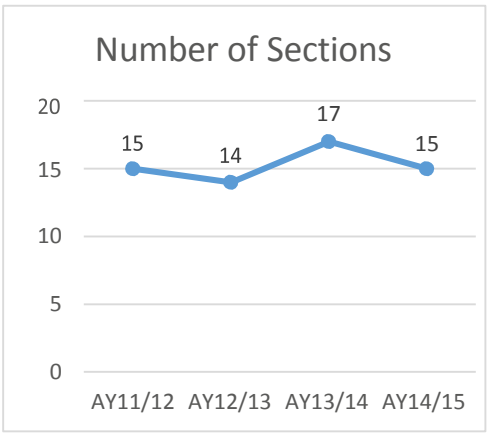
Definitions

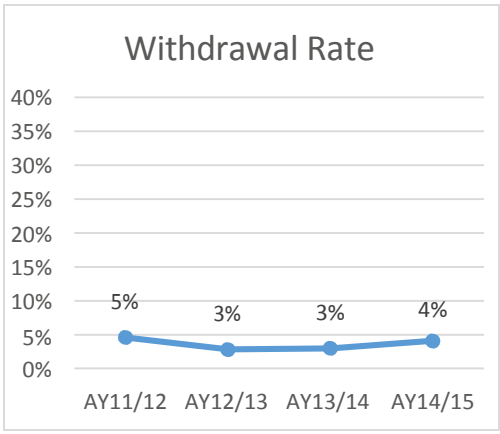
Grade Distribution	The number of students who receive a particular letter grade (A+ through F), as a percentage of the total number of students with a grade or a W/WE. This does not apply to courses which do not assign numeric grades to students.
Cumulative Distribution	The number of students who receive a particular letter grade (A+ through F) plus those who receive a higher grade, as a percentage of the total number of students with a grade or a W/WE. Useful for estimating the proportion of passing students based on any specific grade requirement.

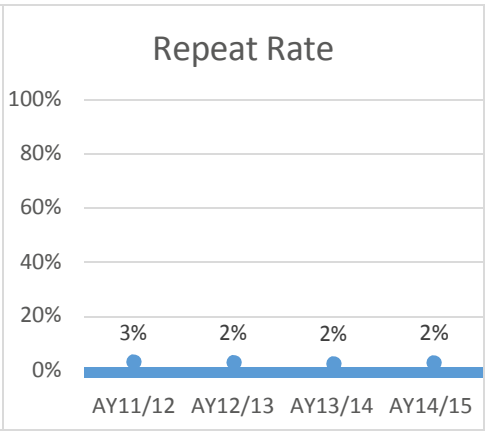
Data Source: N:\dept\iap\Strategic Enrolment Management (SEM)\SEM 2015\Grade Distribution

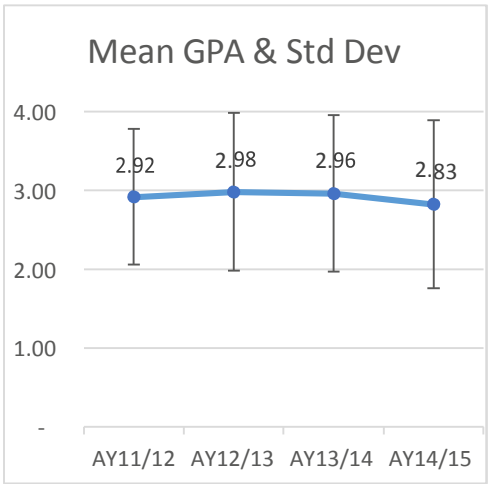
Diploma Program

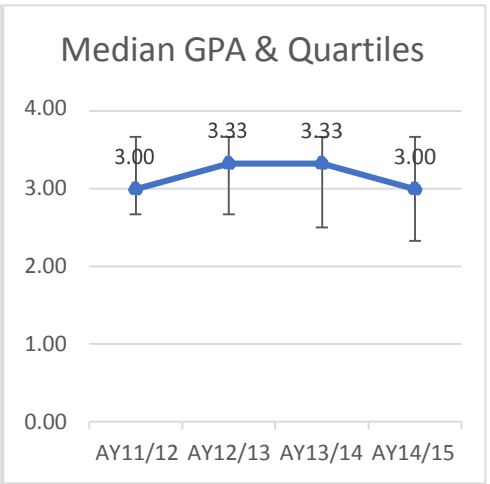












Data Source: N:\dept\iap\Strategic Enrolment Management (SEM)\SEM 2015\Grade Distribution

ADMINISTRATIVE DATA Environmental Protection Technology

Diploma Program

Definitions

GPA	Grade Point Average (GPA) is computed based solely on the numerical Grade Point equivalent of a letter grade. This dashboard does NOT compute an average weighted by course credits.
Mean GPA	The average GPA of students in the selected courses. A weighted average is used, such that larger classes have a larger influence on the computed mean.
Median GPA	The median GPA is the grade such that 50% of the students in the course have a grade above or equal to that grade.
Numeric Grade Distribution	The number of students who receive a particular letter grade (A+ through F), as a percentage of the total number of students with a grade or a W/WE. This does not apply to courses which do not assign numeric grades to students.
Student	Number of students assigned a grade or W/WE (Withdraw) or DEF (Deferred), except those marked as AUD (Audit). These are not unique students since they are allowed to repeat and take multiple courses. Students include those who have withdrawn from their class, but does not include those who dropped the class before the Stable Enrolment Date. To protect privacy, this dashboard does not display courses with less than 5 students.
Withdraw	Students who officially withdraw from a course. Receives a grade of W if prior to published deadline, or WE if withdrawal is approved due to extenuating circumstances after the published deadline. Percentage is calculated based on number of students with a grade or a W/WE or DEF.
Repeat	Students who repeat a course. Percentage is calculated based on number of students with a grade or a W/WE or DEF.

Data Source: N:\dept\iap\Strategic Enrolment Management (SEM)\SEM 2015\Grade Distribution

ADMINISTRATIVE DATA Environmental Protection Technology

Diploma Program

RETENTION AND COMPLETION DATA

First-Year Leaver Rate by Cohort and Credential

	Cohort					
Credential	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**
Diploma in Environment Technology	13%	13%	22%	38%	14%	20%

Data Source: R:\IAP\Strategic Enrolment Management (SEM)\SEM 2015\working files\Retention

Retention and Completion Rates by Academic Year of Entry for Environmental Protection Technology Diploma

Cohort, Years Since Entry	Head Count	Continuer Rate	Overall Graduation Rate	Potential Completers Rate	Overall Leaver Rate	Same Program Grad Rate	Same Program Grad Time (In Years)
2008 cohort, 4 years out	15	20%	47%	13%	20%	47%	3.3
2009 cohort, 4 years out	8	13%	63%	13%	13%	38%	3.7
2010 cohort, 4 years out	9	0%	33%	33%	33%	11%	3.0
2008 cohort, 5 years out	15	7%	60%	13%	20%	53%	3.5
2009 cohort, 5 years out	8	0%	75%	13%	13%	50%	4.0
2010 cohort, 5 years out	9	11%	33%	33%	22%	22%	3.0
2008 cohort, 6 years out	15	7%	67%	7%	20%	60%	3.8
2009 cohort, 6 years out	8	0%	75%	13%	13%	50%	4.0

Data Source: KPU Retention Dashboard

Definitions

Cohort	Academic year students in the cohort began studies at KPU
First-Year Leavers	The percent of the cohort with no enrolment in the second year that were not graduates or potential completers.
Year Since Entry	Number of elapsed years since entering KPU.
Continuers	The percent of the cohort with any enrolment in the reporting year that were not graduates. They may be registered in the initial program or a different program.
Overall Graduation Rate	The percent of the cohort awarded any KPU credential. They may have graduated from a program other than their initial program. Graduates may still be studying at KPU.
Potential Completers	Leavers who may have earned enough credits to complete the program, but did not apply to graduate so are not counted as Graduates. They may, or may not, have met the specific requirements to graduate but they earned at least 100% of the credits required for the credential (that is 30 credits for a certificate and 60 credits for a diploma)
Overall Leavers	The percent of the cohort with no enrolment in the reporting year that were not graduates or potential completers.
Same Program Grads Rate	Graduated from the initial program in which they enrolled. Defined as the percent of the cohort awarded the credential for the initial program of study. These graduates may still be studying at KPU
Same Program Grad Time	For those who graduated in the Same Program, this is the total elapsed time, in years, from when they started at KPU to when they graduated

ADMINISTRATIVE DATA Environmental Protection Technology

Diploma Program

STUDENT OUTCOMES

AVED Measures

There are 7 measures that AVED uses to assess each institution with respect to the outcomes students achieve within 2 years of graduation. A description of each follows. AVED has a target for each measure.

Unemployed	Unemployment rate of KPU's graduates (of those in the labour market)
Employed	Proportion of former students who are employed
Related Job	Proportion of former students employed in a related field of study
Usefulness	Proportion of former students who reported satisfaction in the usefulness of their knowledge and skills in performing their jobs
Satisfaction	Proportion of former students' who reported satisfaction with their education
Quality	Proportion of former students' who assessed their quality of instruction positively
Skill Development	[Former] student assessment of their skill development at KPU. An overall average for all skills is provided, plus the results for each skill

Student Outcomes: KPU's Environment Protection Technology Diploma Program with AVED 2014 Target

Measures	**2011/2012**	**2013/14**	**2015**	**AVED Target**
Respondents	16	11	6	
Unemployment	27%	10%	0%	≤ 12.5%
Employed	69%	82%	60%	≥ 85%
Related Job	82%	56%	67%	≥ 78%
Usefulness	91%	50%	67%	≥ 90%
Satisfaction	100%	91%	83%	≥ 90%
Quality	100%	100%	83%	≥ 90%
Skill Development	82%	77%	97%	≥ 85%
Write Clearly and Concisely	81%	56%	100%	≥ 85%
Speak Effectively	75%	67%	100%	≥ 85%
Read and Comprehend Materials	88%	82%	100%	≥ 85%
Work Effectively with Others	88%	73%	100%	≥ 85%
Analyse and Think Critically	88%	91%	100%	≥ 85%
Resolve Issues or Problems	81%	91%	100%	≥ 85%
Learn on Your Own	75%	82%	80%	≥ 85%

Data Source: R:\IAP\Student Outcomes\DACSO\DACSO_Final_Data_2011_to_2015. DACSO Pivots 2011 to 2015

Appendix 2: EPT Discipline/Sector Survey Data (Cleaned)

Administrative Note: The survey link was sent to 568 EPT professionals. A total of 94 recipients responded. The overall response rate is 94/568 =17%. The number of respondents for each question (N) is also provided. In the interest of confidentiality of the data, specific names of instructors and courses are removed.

1. How many entry-level positions have you hired for since January 2010?

	Frequency	Percent
1-3	23	26%
None/not applicable	17	19%
4-6	16	18%
30 or more	12	14%
10-19	6	7%
Don't know	5	6%
7-9	5	6%
20-29	4	5%

2. Of these, how many have an environmental technology focus?

	Frequency	Percent
1-3	27	31%
None/not applicable	26	30%
10 or more	14	16%
4-6	12	14%
Don't know	7	8%
7-9	2	2%

3. When hiring for an entry-level position at your organization or business, how important is it for the candidate to be able to demonstrate the following skills?

	Critically Important	Very Important	Moderately Important	Slightly Important	Not at all Important	Don't Know
Interpret data and write reports. (N=75)	20%	**39%**	24%	13%	1%	3%
Use mathematics and statistics for environmental data analysis. (N=75)	11%	19%	**35%**	20%	13%	3%
Apply principles of project management. (N=74)	7%	**30%**	28%	23%	10%	3%
Use principles of physics, chemistry, and biology. (N=74)	8%	26%	**37%**	19%	7%	4%

	Critically Important	Very Important	Moderately Important	Slightly Important	Not at all Important	Don't Know
Apply principles of ethics, sustainability, and law in environmental work. (N=75)	21%	**33%**	27%	5%	8%	5%
Communicate effectively with stakeholders (including verbal and graphical presentations). (N=75)	27%	**41%**	16%	9%	4%	3%
Select and use appropriate computer hardware and software. (N=75)	20%	**36%**	27%	8%	7%	3%
Recognize hazards and implement health and safety practices. (N=75)	**40%**	28%	15%	11%	4%	3%
Obtain and interpret data on waste generation and management. (N=75)	5%	13%	25%	20%	**33%**	3%
Implement sampling procedures and interpret results. (N=75)	16%	**29%**	27%	9%	16%	3%
Assess effectiveness of pollution control measures. (N=74)	8%	10%	20%	**30%**	26%	7%
Implement relevant quality assurance and quality control procedures.(N=75)	14%	**29%**	26%	15%	12%	4%
Interpret environmental law in Canada, including statutes, regulations and policies.(N=74)	8%	19%	16%	**30%**	21%	6%

4. When hiring for an entry-level position at your organization or business, how important is it for the candidate to be able to demonstrate the following skills?

	Critically important	Very Important	Moderately Important	Slightly Important	Not at all Important
Written communication	40%	**52%**	8%	0%	0%
Oral communication	47%	**49%**	4%	0%	0%

	Critically important	Very Important	Moderately Important	Slightly Important	Not at all Important
Group collaboration	38%	**51%**	10%	1%	0%
Critical analysis	19%	**49%**	27%	5%	0%
Problem resolution	22%	**49%**	27%	3%	0%
Learn on your own	23%	**53%**	22%	3%	0%
Reading and comprehension	39%	**54%**	5%	1%	0%

5. What other skills, training or knowledge must a KPU EPT graduate possess to be considered for a position at your business or organization?

Comments
A good work ethic, sincere concern about environment and desire to do something constructive about it, rate as my most important attributes. Second are the existing skills, but probably the most important of those are basic biology, chemistry and statistics so they understand experimental design and data interpretation.
A sound understanding of ecological principles is a very valuable asset for all SNAP positions. Being able to effectively communicate those ecological principles to a variety of individuals is an important skill to have for the Environmental Outreach team. Similarly, the undertaking restoration projects by the Habitat Restoration team requires a well-rounded ecological knowledge base to understand best management strategies and implement plans properly.
Ability to work with others, be willing to travel, open to learning, know Excel, other software
adaptability, ability to work on a wide range of projects
As we are a consulting company some business acumen and entrepreneurial skills would be helpful in their interaction with clients
Attitude! Skills can be learned--attitude can't. The most unsuccessful candidates were ones who thought they were superior to the volunteers in our office, felt that they didn't have to listen to their superiors.
Computer skills, motivated, work independently, good work ethics
equipment operation
Essential to understand what drives our business - which is the applicable environmental legislation. No one wants to hires us, they are obligated to hire us!

Comments
Field experience a plus, some physical work required adept using computers detailed, keeps good notes familiarity with jurisdictional regulations
Field skills
Field work training Strong work ethic
General business knowledge and terminology (contract understanding - quotes/orders/invoices/inventory management).
great communication skills, listening skills,
I manage the City of Richmond Policy Planning Department (PPD) which mainly: (1) prepares long range community planning policies (e.g., the 2041 OCP, Area Plans and their amendments) and (2) processes development applications (e.g. rezonings, Development Permits, subdivisions).I don't hire Environmental Protection Technology (EPT) students. The City's Sustainability Department might (e.g., Lesley Douglas, Sustainability Department might as she manages the 2041 Ecological network and Riparian Management policies) My comments here are what I think are important. Terry Crowe, Manager, Policy Planning City of Richmond778-228-2433.
Industrial processes resulting in air emissions to environment and effluent discharges to sewer
Key skills for our business is an understanding of erosion and sediment control monitoring equipment (turbidity meters); water quality equipment (YSI), electrofishing, orienteering (GPS, compass), vegetation identification (native, rare plants, invasive species), wildlife habitat identification, bird identification. One person does not need to know all of these, but should know or have abilities in most. Knowledge should include an understanding of the requirements around the protection of aquatic life, wildlife, vegetation, and water quality.
Knowledge about and passion for wildlife in BC.
Knowledge and passion for local food and farmers' markets Really depends on the role. Often event planning, social media, marketing, writing, design, project management
Knowledge of as many aspects of field work is important when hiring entry level positions. Emphasis on field notes would be good.
local knowledge about surface and ground water resources

Comments
Market trends and industrial capacity in Vancouver area. Knowledge of municipal initiatives that affect KPU, i.e. district heating, cycling and transportation, etc. Strong knowledge of carbon reducing strategies in building design and in operations.
More industrial hygiene related skills re: pump calibration, sampling for air contaminants other than soil, water. We are an industrial hygiene company and need entry level to be able to hit the road sampling for asbestos, silica, lead, and other occupational xenobiotic.
Must be a problem solver not a problem presenter without a solution
Must have a valid BC Class 5 driver's license, must be able to work independently and also as a team player, good time management and multi-tasking skills, and must be willing to work weekends and evenings/nights, and be willing to work outside under hot/rainy weather conditions.
Need to know some base fisheries and terrestrial knowledge - should review City policies etc. before coming i.e. Sustainability Charter, Biodiversity Conservation strategy, Climate Adaptation Plan, Climate Energy & Emissions Plan.... Some base information on climate mitigation & adaptation
None of my answers reflect those of an HR person. My opinion is personal since I do not hire people. I do train people often so my opinions are from this perspective. I also work in contaminated sites. Other departments are engineering and biology. The skill sets are different. All departments require keen learners with practical skills for entry level positions.
Our entry level hires tend to be for short-term summer youth crew positions. For these positions we are mainly looking for a basic knowledge of ecological function, plant and wildlife identification skills, enthusiasm for learning, and a positive attitude.
Practical skills and licenses.
Problem solving , critical thinking
Proficient in EXCEL and WORD. Should be able to produce tables and graphs in both EXCEL and WORD. Able to use other software programs and trainable. Basic understanding of statistics and sampling. Reliable and works well with others in a team. Basic knowledge of horticulture and lab skills. Good judgment, i.e., able to work independently and make decisions on their own, but know when to ask senior staff for advice. (This is something students often learn in co-op placements).
Project management skills.
Relevance of more general topics to the specifics of liquid waste management, asset management, business decision making.

Comments
Show a willingness to work hard, and be a team player. They must be ok with doing menial tasks, understanding that more interesting work comes along as well, but don't complain about some 'boring' work also.
Solid technical skills, familiarity of technology basics such as how pressure transducers work, familiarity of water quality monitoring equipment (pH, temp, conductivity, DO, ORP); excellent people skills and the knowledge of how to be a good 'new' employee. In the past (not with EPT students) we have had challenges with junior staff who arrive with a know-it-all attitude.
specific to job descriptions
Stop sending me the survey. Remove me from your list.
Strong knowledge in plant biology, scientific procedures. Understand quality assurance systems such as ISO17025.Strong laboratory procedure skills, safety in the laboratory (chemical, biohazard, etc.)Effective communication skills. Ability to work alone, follow instructions, work with a team. Computer skills (WORD, EXCEL, POWERPOINT etc.)
Survey techniques
Team work and being flexible and adaptable in ambiguous situations
team work is essential; organizational skills; ability to deliver timely high quality results
Technical training is a benefit but personality skills are a critically important factor. Examples include: collaboration; confidence in communication and enquiry; flexibility. Essential skills are written and verbal concise and organized communication techniques.
The students we have worked with and hired from KPU are co-op students. We have not been able to hire permanent employees, Knowledge required is basic science from first and second year courses. Familiarity with field sampling equipment and procedures. Ability to work alone as well as part of a team on a variety of projects. Ability to adapt to rapidly changing work conditions and priorities. Ability to work in office environment, laboratory and field conditions often all in the same day.
Understanding of, and experience in, environmental media sampling techniques
Valid class 5 with a heavy trailer endorsement, basic first aid, able to work on their own, not afraid to ask questions , able to make decisions on their own, comfortable in public speaking
Water treatment, water management

Comments
We required strong technical skill due to the equipment utilized in our facility, we are willing to train the general technical understanding is required. Therefore we require people that are comfortable with technology and are willing to change with it as it changes.
Willingness to live remotely. Ability to operate snowmobiles, boats, off-road vehicles.
Word and excel
Work experience.

6. Are there any development(s) in your sector or discipline that you anticipate will affect skill requirements and/or hiring priorities over the next few years?

Comments
A continued need for students with a systems approach and understanding to sustainable practices and how to make them relevant to a general community. Areas include as a start, Solid Waste Management, Utilities and Energy Conservation, Sustainable Landscape practices, Sustainable Building design.
A focus on data. Use of handheld data collection devices, databases (creation and queries), GIS, and statistical analysis (use of software - R).Also, a focus on how projects effect the environment values that are of importance to Aboriginal Groups.
All of the above I have mentioned.
Availability of a free online assistant pesticide applicator's certification.
Bioscience is a huge growing field. There are opportunities on both the business and legal end as well as on the laboratory bench. The better-paying jobs are on the business and legal end, but, perhaps, the most satisfying jobs are in the field and lab, for those who enjoy the thrill of discovery, following a hunch or proving a hypothesis. It is estimated that 99% of the micro biome is unknown and undescribed. Biotech is the new frontier of science. Recently, as a result of the recognition of the impact of climate change, there has been a shift back to recognizing the importance of field work, in ecology and agriculture. Job opportunities in biological and agricultural science are almost unlimited. "Save the planet" is no longer just a slogan, it is a real job.
Carbon Emissions regulations, Alternative fuels/waste to fuel use
Funding--too many funders think that non-profits can live and work on air.
GIS/mapping

Comments
green building
Increased use of satellite telemetry systems and equipment (GOES system).
increasing emphasis on climate change issues
Increasingly, data will be collected directly onto tablets and laptops. Comfort with this will be important. Remote monitoring will also increase in importance, including drones and satellite transmission.
Lots of work on Climate adaptation from vegetation plans, water quality, sea level rise etc... good if student have a base knowledge and one that is applicable to the region - lots of work underway in the region
More training to be delivered. Should know effective use of PowerPoint, online training, where to obtain to new relevant information
N/A
na
no
No
No.
None that I know of
Not that I'm aware
nothing different than they are currently
Odor management issues are growing
project management
Report writing with high tolerance for repetitive balony. Ability to handle style issues as presented by project managers. Skill with understanding the CSR. Emotional intelligence.
retirement
Retirements

Comments
The "green" economy is growing and most of the EPT Coop students we see, go on to jobs in the sector. I see this sector expanding and I also see the current generation wanting to be involved in the solutions.
There will likely not be any drastic changes to the work that SNAP does however we have noticed that an increasing number of students do not have their full driver's license which is requisite for all positions with SNAP. Encouraging students to obtain a driver's license, even if they don't personally use a vehicle, would be an important piece of information for SNAP and many other jobs in this sector.
Water treatment
Watershed Management; Energy Management
We have seen a shift away from field-based work conducted by the Provincial government so it is important that graduates obtain that experience elsewhere to round out their expertise.
We hire mostly financial auditors
Yes, industry is moving to a construction focused business line. EA's are predominantly done and we will be moving to the actual building. Inspecting and monitoring will become very important and how this overlays with regulations

7. Have you hired or worked with any of KPU's EPT graduates?

	Frequency	Percent
Yes	35	51%
No	34	49%

8. If you have not hired KPU EPT graduates, please tell us why not:

	Frequency	Percent
Other	15	41%
My organization has not needed/been able to hire anyone recently	12	32%
To the best of my knowledge, we have not received any applications from KPU EPT graduates	7	19%
They lack the required communication/soft skills	2	5%
They lack work experience	1	3%
They lack the required technical skills	0	0%
Their job expectations are too high	0	0%

If other, please specify:

Comments
Another applicant had more direct experience, otherwise a very good candidate
Both positions filled with KPU students
have not received many KPU graduate applicants
I am in Alberta
I don't track which university the applicants come from
My company is moving towards hiring within or with experience. Strong writing and practical skills may impress bit I don't personally know of EPT grads have applied
None were willing to leave lower mainland.
One is working for us at the moment
See comments above.
The SNAP program runs almost exclusively for students and so graduates are no longer eligible.
The work we have would be towards sales (consulting) and office type work, for which they do not appear interested.
We have hired a KPU graduate
We have hired them as students (co-ops), but have no yet had the opportunity to hire a full-time graduate from the program due to reduced workload over the past 2 years.
We have limited resources to hire for entry level positions. We usually have open hiring processes.
We have many sources for coop and interns, open positions are often filled by this group

9. If you have hired any KPU EPT graduates:
   a) Please highlight any STRENGTHS you have observed.

Comments
Cheerful, willing, energetic and good spreadsheet and computer skills.
Computer, comprehension, environmental sampling.
Confident and possess a thorough knowledge of their field.
excellent background in environmental management, which allows employers to build on core competencies

Comments
fairly good science preparation, some stats, understand research, open to learning new skills - they don't think they know it all which is refreshing
Good broad range skill set in instrumentation, monitoring and assessments for field work. Lends itself well to introductory positions
Good oral and written communication skills, great team work attitude
good range of environmental knowledge & field skills - very adaptable
Hands on Technical skills, independent workers
hard working
I have always found that EPT grads are well rounded and prepared to start their careers right away.
It was good
Knowledgeable, computer savvy, good report writing.
Longevity. Upgrading. Ability to get professional credentials quickly
Many graduates are now staff. They're great. Have good foundational knowledge for our type of work.
oral & written skills, personable, driven, able to solve problem on their own,
Positive attitudes and background in air, soil, and water sampling
Practical real-world work experience from co-op program. Critical thinkers. Enthusiasm.
Practical, hands-on workers, who don't mind getting hot, or wet and dirty. Very intelligent and questioning, too. Good personal, communication and leadership skills.
Recent KPU graduates that have been hired for permanent positions have typically expanded their skills through industry experience and further education. The EPT program provides a good foundation but it is the individual that creates opportunity. We have not hired a KPU co-op student for some time. Some of the previous KPU students struggled with initiative.
See above.
Strong organizational skills, and leadership skills
technical knowledge and well rounded
technical skills
The candidates seem to have a good biology background.

Comments
This is based on Co-op hires: great attitudes, willingness to learn, team player, critical thinking, understanding of basic project needs for data collection.
Very well prepared for technical work including basic familiarity of equipment or theory, strong work ethic, comfortable asking questions or asking for clarification.

b) Please highlight any SUGGESTIONS you have for improvement.

Comments
Emphasize the occupational health and safety industrial hygiene rubrics in your curriculum.
Expressed in the other survey. I can't really say....
I have no suggestions at this time.
I really like this program and I think it attracts good students with value to the job market when they complete their programs.
It's been many years since we have hired a KPU student, so no comments here. We used to hire students but have not done so in several years as we need Technicians with some years of experience to jump in and start on more technical work right away. No issues with past students that I recall.
keep students current on regional issues and regional work & continue to provide hands on field training
More field work experience would be an asset
No it was good
none at this time
Perhaps, could have a bit more experience in using EXCEL spreadsheets and other computer programs. Anyone who wishes to get a management level job at a commercial nursery, greenhouse or farm, must be proficient in using the kind of spreadsheets and programs that commercial nurseries and greenhouses use to manage inventory. Even the horticulturalists at these operations must be proficient in these programs.
plant/vegetation identification
See above.
Stress for students the need to show initiative; difficult and time-consuming for employers to guide graduates on a day-to-day basis.

Comments
There are many strong candidates from many institutions that have good biology backgrounds and skills. The issue in recent years has been more in the ability to work alone, follow instructions, work as a team, get along with others and generally have a good work ethic.
They have all been great.
This is based on Co-op hires: missing some basic/advanced biological knowledge important for overall ecosystem understanding - additional focus on ecosystems function, missing some training (e.g. electrofishing - that is becoming industry standard for fish work), more regulatory understanding, and how these regulations are applied in practice.
Writing, writing, writing! We are finding the art of English comprehension is being lost especially in report writing. Were very surprised on the significant and prevalent poor writing skill sets we are seeing from technologists all the way up to master's students. It is almost like texting type writing is the new norm. We are finding grads writing skills to be sloppy, rushed, inconsistent with poor flow and communicating out what was observed and assessed. This issue seems to be getting worse as time goes on and we are experiencing this across a broad range of post secondary institutions so is not specific to a certain school. Is almost like it is cultural shift regarding people attitude towards writing.

10. Prior to this survey, were you aware of KPU's EPT program?

	Frequency	Percent
Yes	53	77%
No	16	23%

11. . In your opinion, what are the strengths of KPU's EPT program?

Comments
Adaptability
applied technical focus
Focus on applied science
Forward thinking.
Generalist skills related to environmental monitoring.
good curriculum, gives good grounding to graduates co-op terms are important for practical experience
Good intention to learn, pay attention to the hands on technique
Good knowledge and skills base that matches needs of Ministry of Environment
good quality interns

Comments
Good staff and training and support of students.
Grads are ready to work as soon as they graduate. The Co-op component has been very valuable in the past. Grads have a good general knowledge of all aspects of the environmental consulting business.
Hands on Technical experience. Program participants are expecting to be outside
hands on, field studies
I have not hired from KPU recently, most hiring has been from BCIT's Environmental Engineering Bachelor of Technology Program (they have more environmental engineering technology knowledge, likely due to the fact they require a prior diploma or degree to enter the program and therefore combined with more experience they tend to do better in our interview). However, I have been impressed in the past with KPU's graduates and remain open to hiring them - more due to their potential rather than their readiness at the end of the KPU program
I'm not very well acquainted with the EPT program specifics, but from my limited experience working with a student from the program I would say KPU does a good job of providing a broad knowledge base with more focus on the overarching themes that impact environmental management issues.
It is a high workload program that helps prepare students for real life work expectations.
It's been too long since we worked with the coop program
Like the new Plant Pathology program
Not enough knowledge to comment
Not sure
Practical skills. Safety. Instrumentation. Broad exposure.
Provides a good foundation for the environmental field.
Provides students with a broad range of skills applicable to a number of industry sectors especially for entry level positions
Quality students.
Recent grads with recent knowledge
Relatively well trained students, keen and eager to learn, good variety of skills and background.
science and environmental technology
see previous answer

Comments
Seem to have enthusiastic, committed individual
Solid technical knowledge, good hands-on experience
Students are well focused with practical knowledge and skills
Students can acquire specific training
Students have applicable H&S training upon graduation
Students have arrived with some level of hands on experience and a passion for their field.... often from experiences in the learning environment
students have good all-around environmental knowledge
The ability to provide relevant training and expertise in wide range of environmental requirements that are in demand by institutions, companies and industry.
The coop semester prepare the students for full time employment.
Very hands on program that allows its student's to experience the work in the field (and not only in books). The accent was very much on contaminated site remediation though, which did limit the scope of work training. I believe this has changed over time as my experience is now dated (over 10 years ago).

12. In your opinion, what steps should the program take to improve?

Comments
Can't say
Challenge the students a bit more.
Communications, writing and entrepreneurial awareness
continue field work and working with local groups - make sure understand about climate change and potential impacts - but local/regional focus
Don't know
Don't know enough about the program
EPT students are highly competitive for our jobs, I like the program
I am not in a position to say

Comments
I am not sure that there are enough jobs for environmental technicians in industry anymore. I don't see a lot of combined Environmental, Health and Safety programs
I cannot say at this time. It has been a while since we hired an EPT grad.
I don't know enough about it to give a thoughtful answer.
I'm not sure to what extent the soft skills like teamwork, communication are taught - but these could be emphasized
Increase courses offered in industrial hygiene, occupational air sampling, noise monitoring, confined space training.
It's been too long since we worked with the coop program
Keep expanding course offerings based on the current demands of the future projects. See what the employers are looking for and work with them to help have students understand these things coming out of the program.
Look into asbestos
more communication skills
More emphasis on technology, less emphasis on the biology side.
more learning about local environmental resources and local knowledge about water systems (surface, ground and drinking)
MV would benefit from the KPT program but have a focus on water/wastewater treatment (similar to OK College Water Engineering Tech program)
n/a
No comment.
No idea
none that I am aware of
Not enough knowledge to comment
Not familiar with programs
Not sure

Comments
Opportunity for practical training and acquiring standard certifications (WHMIS, first aid, tree assessor, etc.) Most of the employees we have hired in the past (including students and recent grads) already had many certifications in place prior to hiring.
perhaps more course work on compliance assessment and means to achieve compliance and strategies and tactics to respond to non-compliance
Prepare students for the fact that they may have to leave lower mainland.
Technology management
We have very limited, if any, science based tasks (lab based work, measurements, sampling, etc.) and more work geared towards on the ground implementation of management strategies and carrying out of policies and plans that are created at higher levels. Correlating some classes towards field practices and management strategies for urban natural areas and park land would be beneficial.

13. Which one of the following best describes your organization or business?

	Frequency	Percent
Environmental Consulting	16	23%
Other	16	23%
Government (Environmental Monitoring and Enforcement)	10	14%
Government (other)	9	13%
Non-Government Organization (e.g. non-profit group, activist group, etc	9	13%
Environmental Contracting	4	6%
Environmental Education	3	4%
Government (Environmental Planning)	3	4%

If other, please specify:

Comments
Environmental Laboratory
Environmental sales and manufacturing.
Environmental streamside restoration work, environmental education, agricultural practices, water conservation
Environmental testing laboratory
Government utility
Horticultural Pest Management Research private company
Horticulture biotech
Industry: Lafarge Holcim- Cement, Aggregates, Asphalt and Concrete producing facilities
Manufacturer
Mining
Post-Secondary, Facilities Management
research and development of environmentally protective bioproducts
SNAP would fall under Environmental Education, NGO, as well as government (municipal park management and stewardship)
University
water & wastewater utilities
We are an independent office of the legislature

14. . Where is your organization or business located? Please select all that apply.

	Frequency
Outside the Lower Mainland	17
Burnaby/New Westminster	16
Surrey/South Surrey/ Cloverdale/White Rock	12
Vancouver	12
Langley	11
Abbotsford/ Mission/Chilliwack	7

	Frequency
Delta	7
Richmond	6
North Vancouver/West Vancouver	4
Coquitlam/Port Coquitlam/Port Moody	2
Pitt Meadows/Maple Ridge	1

If you selected Outside the Lower Mainland, please specify where.

Comments
9 offices around the province
Agassiz
all over BC
BC
Calgary
Kamloops
Kamloops. Terrace, Prince George, Kelowna, Calgary, Fort St. John
Nanaimo and multiple US cities.
Northwest BC
Vancouver Burnaby
Vancouver Island
Victoria
Worldwide presence

15. What is the total number of employees in your organization?

	Frequency	Percent
201 or more	30	44%
5-20	18	27%
101-200	9	13%
1-4	7	10%
21-100	4	6%

Appendix 3: EPT Faculty Survey Data (Cleaned)

Administrative Note: The survey link was sent to 12 Environmental Protection Program Faculty. A total of 10 recipients responded. The overall response rate is 10/12=83%. The number of respondents for each question (N) is also provided. In the interest of confidentiality of the data, specific names of instructors and courses are removed.

Satisfaction with Education Provided to Students

1. How satisfied are you that KPU's EPT program is preparing students to meet each of the following program-specific competencies?

	Very satisfied	Somewhat satisfied	Neither satisfied nor dissatisfied	Somewhat dissatisfied	Very dissatisfied	Don't know/ does not apply
Interpret data and write reports. (N=10)	**40%**	**40%**	10%	0%	0%	10%
Use mathematics and statistics for environmental data analysis. (N=10)	**40%**	**40%**	0%	10%	0%	10%
Apply principles of project management. (N=10)	0%	11%	11%	11%	0%	**67%**
Use principles of physics, chemistry, and biology. (N=10)	**40%**	30%	0%	0%	0%	30%
Apply principles of ethics, sustainability, and law in environmental work. (N=9)	**44%**	11%	11%	0%	0%	33%
Communicate effectively with stakeholders (including verbal and graphical presentations). (N=9)	11%	**56%**	0%	0%	0%	33%
Select and use appropriate computer hardware and software. (N=10)	20%	**40%**	10%	0%	0%	30%
Recognize hazards and implement health	33%	0%	0%	0%	0%	**67%**

	Very satisfied	Somewhat satisfied	Neither satisfied nor dissatisfied	Somewhat dissatisfied	Very dissatisfied	Don't know/ does not apply
and safety practices. (N=9)						
Obtain and interpret data on waste generation and management. (N=9)	11%	**56%**	0%	0%	0%	33%
Implement sampling procedures and interpret results. (N=9)	**56%**	22%	0%	0%	0%	22%
Assess effectiveness of pollution control measures. (N=9)	11%	33%	11%	0%	0%	**44%**
Implement relevant quality assurance and quality control procedures. (N=9)	22%	33%	0%	0%	0%	**44%**
Interpret environmental law in Canada, including statutes, regulations and policies. (N=9)	11%	33%	0%	0%	0%	**56%**
Interpret data and write reports (N=9)	11%	**67%**	11%	0%	0%	11%

Please highlight any STRENGTHS or SUGGESTIONS related to how the program prepares students to meet these competencies.

Comments
I have limited knowledge of the overall EPT program as a contract faculty, but do know that the graduates are highly regarded in govt, academia, and industry. Overall I think the program is fulfilling its goals.
It would be valuable for all EPT instructors and contract faculty to meet and chart-out a learning objective schematic for the program to understand how various courses relate to one another and to identify areas of complimentary overlap where common case studies could be used to exercise and reinforce specific learning objectives across courses (e.g. specific Contaminate Sites scenarios).

2. How satisfied are you that KPU's EPT program is preparing students to meet each of the following competencies?

	Very satisfied	Somewhat satisfied	Neither satisfied nor dissatisfied	Somewhat dissatisfied	Very dissatisfied	Don't know/ does not apply
Written communication (N=10)	20%	**80%**	0%	0%	0%	0%
Oral communication (N=10)	22%	**67%**	0%	0%	0%	11%
Group collaboration (N=9)	22%	**56%**	0%	11%	0%	11%
Critical analysis (N=10)	10%	**60%**	30%	0%	0%	0%
Problem resolution (N=9)	0%	**67%**	22%	0%	0%	11%
Learn on your own (N=10)	0%	**70%**	20%	0%	0%	10%
Reading and comprehension(N=10)	0%	**80%**	10%	0%	0%	10%

Please highlight any STRENGTHS or SUGGESTIONS related to how the program prepares students to meet these competencies.

Comments
Same suggestion as above, in that it would allow instructors to evaluate the improvement of student competencies across the progression of courses: It would be valuable for all EPT instructors and contract faculty to meet and chart-out a learning objective schematic for the program to understand how various courses relate to one another and to identify areas of complimentary overlap where common case studies could be used to exercise and reinforce specific learning objectives across courses (e.g. specific Contaminate Sites scenarios).

3. Considering the EPT program as a whole, to what extent would you agree with the following?

	Strongly agree	Somewhat agree	Slightly agree	Neither agree nor disagree	Slightly Disagree	Somewhat disagree	Strongly disagree	Don't know/ does not apply
The curriculum is current (N=9)	**44%**	**44%**	11%	0%	0%	0%	0%	0%
The curriculum has	**67%**	33%	0%	0%	0%	0%	0%	0%

	Strongly agree	Somewhat agree	Slightly agree	Neither agree nor disagree	Slightly Disagree	Somewhat disagree	Strongly disagree	Don't know/ does not apply
appropriate breadth and depth (N=9)								
The curriculum is built around the program-specific competencies (N=8)	38%	**50%**	13%	0%	0%	0%	0%	0%
The curriculum avoids unnecessary duplication (N=8)	25%	0%	25%	0%	0%	0%	0%	50%
The curriculum prepares students well for employment (N=9)	33%	**44%**	0%	0%	0%	0%	0%	22%
The curriculum prepares students well for further education (N=9)	22%	**56%**	22%	0%	0%	0%	0%	0%
Prerequisites prepare students well for subsequent courses (N=9)	**44%**	22%	22%	0%	0%	0%	0%	11%
Assessment methods are suitable for the program's mission and level (N=9)	44%	**56%**	0%	0%	0%	0%	0%	0%
Learning outcomes are coordinated	0%	38%	13%	0%	0%	0%	0%	**50%**

	Strongly agree	Somewhat agree	Slightly agree	Neither agree nor disagree	Slightly Disagree	Somewhat disagree	Strongly disagree	Don't know/ does not apply
across the program to facilitate learning progression and retention (N=8)								
Learning outcomes for each course reflect the program-specific competencies (N=8)	**38%**	13%	0%	13%	0%	0%	0%	**38%**
Connections between learning outcomes, class content and assessments are clear in each course (N=8)	11%	**44%**	11%	11%	0%	0%	0%	22%
Instructional methods facilitate student learning, retention and progression (N=9)	33%	**67%**	0%	0%	0%	0%	0%	0%
Instructional methods are appropriate for students with diverse learning styles and	22%	**67%**	11%	0%	0%	0%	0%	0%

	Strongly agree	Somewhat agree	Slightly agree	Neither agree nor disagree	Slightly Disagree	Somewhat disagree	Strongly disagree	Don't know/ does not apply
backgrounds (N=9)								
Collectively, instructors have the necessary expertise to deliver the curriculum (N=9)	**67%**	33%	0%	0%	0%	0%	0%	0%

Please highlight any STRENGTHS or SUGGESTIONS related to program instruction or curriculum

Comments
Curriculum is well designed and very "hands-on". Very effective in delivering key competencies, especially in relation to methodology and fieldwork.
I have answered these questions mostly related to my own course.
Strengths: Faculty experience, ongoing scholarship and industry connections (many of our faculty are practicing in the field).Suggestions: Ensure learning outcomes are coordinated across the program to facilitate learning progression and retention. This could include a department meeting with faculty to map out learning outcomes across the program.

Satisfaction with Program Resources

4. How satisfied are you with the following resources as they apply to teaching and learning in KPU's EPT program?

	Very satisfied	Somewhat satisfied	Neither satisfied nor dissatisfied	Somewhat dissatisfied	Very dissatisfied	Don't know/ does not apply
Classroom space (N=9)	**56%**	44%	0%	0%	0%	0%
Places to do group or individual work (N=9)	22%	**56%**	0%	11%	0%	11%
Availability of relevant texts and supplies at the KPU bookstore (N=9)	22%	**33%**	22%	0%	0%	22%
Lab/computer space (N=8)	25%	**38%**	13%	13%	0%	13%

	Very satisfied	Somewhat satisfied	Neither satisfied nor dissatisfied	Somewhat dissatisfied	Very dissatisfied	Don't know/ does not apply
Equipment for students as required (N=8)	25%	**38%**	0%	0%	0%	**38%**
Learning centre (N=8)	**50%**	13%	13%	0%	0%	25%
Peer tutors (N=8)	25%	25%	13%	0%	0%	**38%**
Help from the co-op office(N=8)	13%	13%	0%	0%	0%	**75%**

Please highlight any STRENGTHS or SUGGESTIONS related to the program's resources.

Comments
Langley Library has been very accommodating in granting access to their computer lab for in-class lab activities. [Course name] doesn't need to be taught in a lab but it does need period access to a lab, and I would be concerned if access to library lab computers was restricted.

5. How satisfied are you with the following Library resources as they apply to KPU's EPT program?

(N=8)	Very satisfied	Somewhat satisfied	Neither satisfied nor dissatisfied	Somewhat dissatisfied	Very dissatisfied	Don't know/ does not apply
Books	25%	**63%**	13%	0%	0%	0%
Print periodicals and journals, etc.	25%	**38%**	0%	25%	0%	13%
Online resources – journal articles, etc	25%	**50%**	0%	13%	0%	13%
eBooks	25%	13%	13%	0%	0%	**50%**
Study guides	25%	13%	0%	0%	0%	**63%**
Librarian support for program-related research	**50%**	38%	0%	0%	0%	13%
DVDs or online videos on program-related topics	13%	25%	13%	0%	0%	**50%**
Library orientation	13%	**50%**	0%	0%	0%	38%

Satisfaction with Research and Professional Development Opportunities for Instructors

6. How satisfied are you with the following?

	Very satisfied	Somewhat satisfied	Neither satisfied nor dissatisfied	Somewhat dissatisfied	Very dissatisfied	Don't know/ does not apply
Opportunities for instructors to conduct research (N=8)	0%	**38%**	**38%**	0%	0%	25%
Opportunities for instructors to involve students in research projects (N=8)	0%	**63%**	13%	0%	0%	25%
Opportunities for instructors to present research (N=9)	11%	**44%**	11%	0%	0%	33%
Opportunities for instructors to create research partnerships (e.g. with other institutions or organizations in the community) (N=9)	11%	**44%**	11%	0%	0%	33%
Availability of research funding (N=8)	0%	0%	25%	25%	0%	**50%**
Support (e.g. practical, financial) and opportunities for instructors' professional development (N=8)	0%	**50%**	0%	25%	0%	25%

Please highlight any STRENGTHS or SUGGESTIONS related to research opportunities within the program.

Comments
Excellent flexibility and organizational support for creating community service learning projects with organizations in the field. KPU tends to be hands-off which allows instructors to be creative and take initiative (a real plus). PD funds are lacking (not normally enough to cover the costs of even local conferences).

Overall Comments

7. In your opinion, what are the strengths of KPU's EPT program?

Comments
Dedicated and highly competent faculty compact and well-designed curriculum Co-op program built-in
Experienced, collegial faculty with a diversity of expertise and experiences in the field with deep connections to industry, ENGO and First Nations communities. I believe our faculty are passionate about their respective fields and they love teaching. I think we engage our students' believe every course incorporates experiential learning, and allows students to build professional experience and industry connections.
Good hands focus and facilities
Practical focus, but strong science base
This program gives students the exact toolkit needed for employment in a modern environmental industry.

8. What should be changed about KPU's EPT program and why?

Comments
It's a strong program that could be made even stronger by facilitating more discussion among faculty, and integrating and monitoring progression of key competencies across courses. Courses and instructors are a bit siloed at the moment.
More time devoted to practical topics, a bit less science from courses not originally designed for the program, e.g. biology
Perhaps more effort and money could be put into marketing the program to attract more students.
Upgrade requirements? Have a computer course for teaching excel etc.

9. Do you have any further comments relating to your experience with KPU's EPT program overall? Please tell us.

Comments
A great program to teach in.
I love teaching in the program. The collection and depth of courses and the sense of community among EPT students and faculty is really special.

Appendix 4: EPT Student Survey Data (cleaned)

Administrative Note: The survey link was sent to the 18 students currently enrolled in the program. A total of 17 students responded. The overall response rate is 17/18=94%. The number of respondents for each question (N) is also provided. In the interest of confidentiality of the data, specific names of instructors and courses are removed.

Questions about You

1. In which year of the program are you currently enrolled?

	Frequency	Percent
Year 2	11	65%
Year 1	6	35%

2. How do you identify your gender?

	Frequency	Percent
Female	11	65%
Male	5	29%
Other	1	6%

3. What is your age group?

	Frequency	Percent
18-24	7	41%
30-39	6	35%
25-29	3	18%
40 and older	1	6%
Below 18	0	0%

4. Which of the following describes your motivation for pursuing an education in Environment Protection Technology at this time?

	Frequency
I want to prepare for a career in environmental sciences.	15
The courses offered are of interest to me.	13
I think environmental sciences is an exciting field.	13
I want to improve my job prospects and earning potential.	11
I want the skills offered by the EPT program (but do not necessarily want a career in the field).	6
Other. Please specify.	4

	Frequency
The courses offered are at times that are convenient to me.	1
I want to meet my family's expectations and earn a post-secondary credential.	1
I think this is an easy program.	0

If other Please Specify:

Comments
Career change.
I want to do something I'm passionate about and make a difference for the environment.
I want to participate in creating a sustainable future for generations to come
Was told to as nothing looks appealing

4. How useful were the following sources of information when you were deciding on KPU's EPT program?

	Extremely Useful	Very Useful	Moderately Useful	Slightly Useful	Not at all Useful
KPU Advertising (N=15)	7%	**27%**	13%	**27%**	**27%**
Apply BC website (N=12)	0%	0%	25%	17%	**58%**
BC Education Planner website (N=11)	0%	0%	17%	17%	**67%**
BC Transfer Guide website (N=12)	0%	0%	17%	17%	**67%**
KPU's EPT website (N=14)	14%	36%	**50%**	0%	0%
KPU's online Academic Calendar with information about the Journalism program, courses, schedules, deadlines, etc. (N=13)	0%	39%	**46%**	15%	0%
High school teachers/counsellors (N=12)	0%	9%	9%	25%	**58%**
KPU open house (N=13)	**23%**	15%	15%	**23%**	**23%**
My visit to KPU (N=13)	0%	*39%*	23%	8%	31%

	Extremely Useful	Very Useful	Moderately Useful	Slightly Useful	Not at all Useful
Direct contact with KPU's EPT department (N=16)	31%	*50%*	13%	0%	6%
Other contact with KPU representative(s) (N=12)	8%	**42%**	25%	0%	25%
Other university information events (N=12)	0%	8%	17%	33%	**42%**
Visit by university representative to my high school (N=11)	0%	9%	9%	9%	**73%**
Social media (N=11)	0%	18%	9%	27%	**46%**
University profile guides (i.e. Maclean's, Globe and Mail) (N=11)	0%	18%	0%	0%	**82%**
Pamphlets/brochures (N=13)	0%	23%	23%	**31%**	23%

5. How important was each of the following when you decided to choose KPU for your environmental sciences education?

	Critically important	Very important	Moderately important	Slightly important	Not at all important
Cost of program (N=16)	0%	**56%**	25%	6%	13%
Campus location (N=16)	19%	**50%**	25%	0%	6%
Entrance requirements (N=16)	19%	**44%**	25%	6%	6%
Depth and breadth of program curriculum (N=15)	**40%**	27%	27%	7%	0%
Disciplines offered (N=15)	**40%**	27%	20%	7%	7%
Level of credential offered (N=15)	**40%**	20%	**40%**	0%	0%
Small class size (N=16)	**38%**	25%	13%	25%	0%
Range of program resources and support services (N=15)	7%	33%	**47%**	13%	0%
Program's connections to the environmental sciences community (N=14)	29%	**36%**	29%	7%	0%

	Critically important	Very important	Moderately important	Slightly important	Not at all important
Instructors' years of experience in the discipline/sector (N=15)	20%	27%	**33%**	20%	0%
Reputation of instructors (N=15)	13%	**47%**	27%	13%	0%
Reputation of program (N=15)	**40%**	33%	20%	7%	0%
Reputation of institution (N=15)	13%	**53%**	27%	7%	0%
Success of program graduates (N=15)	**53%**	27%	13%	0%	7%
Recommendations from family/friends (N=16)	6%	13%	19%	25%	**38%**
Recommendations from high school teachers (N=13)	0%	0%	23%	15%	**62%**
Recommendations from professionals in the discipline/sector (N=14)	**29%**	21%	14%	14%	21%
Family/friends in the same program or institution (N=13)	0%	15%	23%	23%	39%
Ease of transfer from/into other institutions (N=16)	13%	25%	**38%**	0%	25%
Other (N=3)	0%	0%	0%	0%	**100%**

If other Please Specify:

Comments
I would want there to be better transfer agreements with other institutions where they can give credentials for the courses taken at KPU.

Your KPU Education

When responding to questions about the quality of the education you have received, please refer to the program as a whole <u>without specifying the names of individual instructors or courses</u>.

6. How satisfied have you been with the following aspects of your admission to KPU's EPT program?

(N=15)	Very satisfied	Somewhat satisfied	Neither satisfied nor dissatisfied	Somewhat dissatisfied	Very dissatisfied	Don't know/
Program information on KPU's website	7%	**53%**	7%	13%	20%	0%
Program information provided by Educational Advising	0%	**40%**	20%	27%	7%	7%
Timely notification of acceptance	**47%**	27%	20%	0%	7%	0%
Program information sessions	33%	**40%**	13%	0%	7%	7%
Program orientation	**27%**	**27%**	20%	7%	0%	20%

7. Thinking of KPU's EPT program as a whole, how satisfied are you with the following?

(N=15)	Very satisfied	Somewhat satisfied	Neither satisfied nor dissatisfied	Somewhat dissatisfied	Very dissatisfied	Don't know/
Relevance of program curriculum to my goals	33%	**53%**	7%	0%	0%	7%
Quality of instruction	40%	**47%**	7%	0%	0%	7%
Prerequisites that prepare me for more advanced courses	33%	**40%**	27%	0%	0%	0%
Level of proficiency required in the program	27%	**53%**	20%	0%	0%	0%
Opportunities for experiential learning (i.e. learning by doing and reflecting	**47%**	40%	13%	0%	0%	0%
Range of EPT courses offered each term	7%	**53%**	13%	20%	7%	0%

Please highlight any STRENGTHS or SUGGESTIONS related to the program content.

Comments
Ask Instructor X to lower his grading standards, as impactful his classes are in terms of information, his class brought on so much stress while trying to balance such a full semester. Ask Instructor Y to not send co-op job applications the day of/before it's due. Don't take Course X off of the pre-requisites

Comments
because having strong math skills isn't enough for Course Y there's a certain way you have to think to figure out physics problems. (which may or may not come with practice)Ask Instructor A, Course A instructor, to provide more illegible and helpful feedback on labs write ups. Ask Instructor B to narrow down what's most important for tests. There's just way too much information, abet it's interesting, but for the midterm and final, you don't know what to focus on.
Course X for this program shouldn't be taught like this is the one and only subject people are enrolled in. Course Y is much more applicable than biology courses. Maybe a different approach to biology (i.e. more hands on) would make it a better experience. Also, Biology 11 or 12 should become the "pre-req" for this program (or some intro to biology/refresher course)
EPT courses are good, but they need to transfer to more BC universities!
sampling
The biggest strength of the program is that it is offered as a co-op program. This is the reason why I signed for the program.
The Program does help prepare for out of school work, however it does not give direction to directionless students.
The program is amazing for those of us interested in both science and the environment, and ultimately how we can turn that interest into employment. It's hard, but as a mature student, conflict with school hours and normal working hours has been a challenge. Due to the size of the program, it seems unfeasible to offer a range of class times. But speaking as a mature student, the biggest challenge to investing in education is monetary reasons. With the help from family I have been able to quit my job and pay my mortgage whilst also paying for school. I would bet that there's more than a few people out there who would love to take a program like EPT but cannot out of the fact they work during the day.

8. How satisfied are you that KPU's EPT program is preparing you to meet each of the following?

(N=15)	**Very satisfied**	**Somewhat satisfied**	**Neither satisfied nor dissatisfied**	**Somewhat dissatisfied**	**Very dissatisfied**	**Don't know/**
Interpret data and write reports.	40%	**53%**	0%	0%	7%	0%
Use mathematics and statistics for	27%	**40%**	20%	7%	0%	7%

(N=15)	Very satisfied	Somewhat satisfied	Neither satisfied nor dissatisfied	Somewhat dissatisfied	Very dissatisfied	Don't know/
environmental data analysis.						
Apply principles of project management.	7%	**60%**	7%	7%	7%	13%
Use principles of physics, chemistry, and biology.	33%	**67%**	0%	0%	0%	0%
Apply principles of ethics, sustainability, and law in environmental work.	33%	**60%**	0%	0%	0%	7%
Communicate effectively with stakeholders (including verbal and graphical presentations).	33%	**40%**	20%	7%	0%	0%
Select and use appropriate computer hardware and software.	13%	33%	**40%**	7%	0%	7%
Recognize hazards and implement health and safety practices.	**60%**	13%	13%	0%	0%	13%
Obtain and interpret data on waste generation and management.	20%	**40%**	7%	0%	0%	33%
Implement sampling procedures and interpret results.	**53%**	20%	7%	7%	0%	13%
Assess effectiveness of pollution control measures.	27%	**40%**	13%	0%	0%	20%
Implement relevant quality assurance and quality control procedures.	27%	**47%**	13%	0%	0%	13%
Interpret environmental law in Canada, including statutes, regulations and policies.	20%	**40%**	20%	7%	0%	13%

Please highlight any STRENGTHS or SUGGESTIONS related to how the program is preparing you to meet these skills.

Comments
CADD or GIS software would be useful.
I don't think Instructor X's tough marking on writing and grammar is fair. Especially since EPT requires is the communications class.
Lots of hands on experience and industry based learning which can be applied directly to any work.

9. How satisfied are you that KPU's EPT program is preparing you to meet each of the following?

(N=15)	**Very satisfied**	**Somewhat satisfied**	**Neither satisfied nor dissatisfied**	**Somewhat dissatisfied**	**Very dissatisfied**	**Don't know/**
Written communication	**53%**	40%	0%	0%	7%	0%
Oral communication	33%	**40%**	20%	0%	7%	0%
Group collaboration	**53%**	40%	0%	0%	7%	0%
Critical analysis	27%	**47%**	27%	0%	0%	0%
Problem resolution	7%	**67%**	13%	13%	0%	0%
Learn on your own	27%	**53%**	20%	0%	0%	0%
Reading and comprehension	13%	**60%**	13%	13%	0%	0%

Please highlight any STRENGTHS or SUGGESTIONS related to how the program is preparing you to meet these skills.

Comments
No comments

10. How satisfied are you with the following resources as they apply to KPU EPT students?

(N=15)	**Very satisfied**	**Somewhat satisfied**	**Neither satisfied nor dissatisfied**	**Somewhat dissatisfied**	**Very dissatisfied**	**Don't know/**
Classroom space	**47%**	40%	0%	7%	7%	0%

(N=15)	Very satisfied	Somewhat satisfied	Neither satisfied nor dissatisfied	Somewhat dissatisfied	Very dissatisfied	Don't know/
Places to do group or individual work	**47%**	40%	0%	13%	0%	0%
Availability of required texts and supplies at the KPU bookstore	**60%**	27%	7%	7%	0%	0%
Learning Centre	20%	13%	**40%**	0%	0%	27%
Student Resource Centre	7%	7%	27%	0%	0%	**60%**
Peer tutors	13%	0%	27%	0%	7%	**53%**
Department audio-visual equipment (e.g. computers, audio recorders)	27%	13%	27%	0%	0%	**33%**
Lab space for scheduled class labs)	**53%**	27%	13%	0%	7%	0%
Lab space (for individual research projects)	**40%**	33%	0%	0%	7%	20%
Help from the co-op office	**33%**	27%	13%	13%	7%	7%

Please highlight any STRENGTHS or SUGGESTIONS related to program resources.

Comments
Co-op office
It was useful how the program has a central classroom

11. How satisfied are you with the following library resources as they apply to KPU EPT students?

	Very satisfied	Somewhat satisfied	Neither satisfied nor dissatisfied	Somewhat dissatisfied	Very dissatisfied	Don't know/
Books (N=14)	21%	**43%**	29%	0%	0%	7%
Print periodicals and journals, etc. (N=15)	20%	**40%**	7%	7%	0%	27%
Online journal articles, etc. (N=15)	27%	**33%**	13%	7%	0%	20%
Study guides (N=15)	20%	**27%**	20%	13%	0%	20%

	Very satisfied	Somewhat satisfied	Neither satisfied nor dissatisfied	Somewhat dissatisfied	Very dissatisfied	Don't know/
Librarian support for program-related research (N=15)	27%	**33%**	7%	7%	7%	20%
Availability of audio-visual and computer equipment (N=15)	**33%**	7%	27%	0%	0%	33%
DVDs on program-related topics (N=15)	0%	0%	27%	0%	0%	7**3%**
Library orientation (N=15)	27%	20%	**40%**	0%	7%	7%

Please highlight any STRENGTHS or SUGGESTIONS related to library resources.

Comments
Immediate support from the librarians

12. Thinking of your instructors as a whole, how satisfied are you with the following?

(N=15)	Very satisfied	Somewhat satisfied	Neither satisfied nor dissatisfied	Somewhat dissatisfied	Very dissatisfied	Don't know/
Are competent and well-qualified	**60%**	40%	0%	0%	0%	0%
Demonstrate enthusiasm for teaching	**53%**	33%	7%	7%	0%	0%
Are available during office hours and/or appointed times	**60%**	27%	0%	7%	0%	7%
Act respectfully towards students	**53%**	27%	20%	0%	0%	0%
Provide useful and timely feedback	**27%**	**27%**	20%	**27%**	0%	0%
Present curriculum in a clear and well-organized manner	27%	**33%**	27%	13%	0%	0%
Appear well informed about current developments in the discipline/sector	**47%**	**47%**	0%	7%	0%	0%

(N=15)	Very satisfied	Somewhat satisfied	Neither satisfied nor dissatisfied	Somewhat dissatisfied	Very dissatisfied	Don't know/
Have years of relevant professional experience	**67%**	20%	7%	0%	0%	7%

Please highlight any STRENGTHS or SUGGESTIONS related to your instructors.

Comments
My instructors were very qualified and helpful.
Need to consider the opinions of students

13. In your opinion, what are the strengths of KPU's EPT program?

Comments
Hands on practical experience
It is very balanced for both new students and students with degrees, as much of the material requires some depth of thinking and can't simply be solved by equation.
It's very had on and therefore prepares us for field work well.
Relevant and in-depth instruction of real problems
sampling biology
small class sizes, good instructors, co-op.
Small classes, co-op semesters, specific topic courses.
Small classes, direct contact and support from instructors.
Strongly applied focus prepares students well for their future careers.
The EPT program is very relatable to the work field and the work ethics required to finish the program helps us prepare for after graduation.

14. What should be changed about the EPT program?

Comments
Approach to biology should be changed. Add intro to GIS perhaps as many companies require that now.

Comments
Awareness and creativity towards making our own products from our everyday use, such as cosmetics, house cleaning products, food products. I guess this will apply for chemistry classes.
Combine the Course X lab and course. Had difficulty in the lab since not all the topics matched what we did in the course.
Create a Diploma technology/ Degree program to help separate our graduates from the rest
Extending the program length (from 2 years to 3?) to incorporate volunteering and other activism in environment related opportunities. Change the all-day classes...I don't learn very much when I have to focus on one class (even with breaks)
geography classes
Have more classes offered throughout the year and possibly have an undergrad degree option.
More technical (math and science) and less political/management study
More transferable options to other universities.
Probably nothing as it has continued like this to my knowledge for over 15 years. However new equipment that is more modern would be useful as training on outdated equipment is an impairment for heading into the job field after the diploma
The transferability of EPT courses to other BC academic institutes needs to increase. It would be nice if more courses were transferable to SFU and UBC.

15. Do you have any further comments relating to your experience with KPU's EPT program overall? Please tell us.

Comments
I really enjoy the program. Also, I don't regret my decision at all that I choose KPU instead of BCIT.
Loving this program.
The program is great for self-starters, and people with initiative or a sense on where they want to go in life, however it does not help at all guide one to become a self-starter or give guidance towards the future.

Appendix 5: EPT Alumni Survey Data (cleaned)

Administrative Note: The survey link was sent to the 52 alumni. A total of 31 recipients responded. The overall response rate is 31/52=60%. The number of respondents for each question (N) is also provided. In the interest of confidentiality of the data, specific names of instructors and courses are removed.

Demographics

1. When did you complete the EPT program?

	Frequency	Percent
Before 2011	26	84%
2013	3	10%
2014	2	7%
2015	0	0%
2012	0	0%
2011	0	0%

2. Are you currently employed?

	Frequency	Percent
Yes	28	90%
No	3	10%

3. Are you currently in school or have you pursued further education since completing your EPT program at KPU?

	Frequency	Percent
None of the above	18	58%
Yes – I have pursued further education	11	36%
Yes – I am currently in school	2	7%

Education Assessment

We would like your assessment of various aspects of your KPU EPT education. We want to know how well it has prepared you for work and/or further studies. Please refer to the program as a whole without specifying the names of individual instructors or courses.

4. Upon graduation from KPU's EPT program, how prepared were you to perform each of the following (at an entry-level job or a program of further study)?

	Very Prepared	Moderately Prepared	Marginally Prepared	Not at all Prepared	Don't Know/ Does Not Apply
Interpret data and write reports. (N=29)	38%	**48%**	10%	3%	0%

	Very Prepared	Moderately Prepared	Marginally Prepared	Not at all Prepared	Don't Know/ Does Not Apply
Use mathematics and statistics for environmental data analysis. (N=28)	32%	**36%**	21%	4%	7%
Apply principles of project management. (N=29)	3%	**35%**	**35%**	21%	7%
Use principles of physics, chemistry, and biology. (N=29)	31%	**48%**	17%	3%	0%
Apply principles of ethics, sustainability, and law in environmental work. (N=29)	41%	**48%**	10%	0%	0%
Communicate effectively with stakeholders (including verbal and graphical presentations). (N=29)	**41%**	**41%**	14%	0%	3%
Select and use appropriate computer hardware and software. (N=29)	28%	**52%**	17%	3%	0%
Recognize hazards and implement health and safety practices. (N=29)	**48%**	41%	7%	3%	0%
Obtain and interpret data on waste generation and management. (N=29)	**38%**	31%	21%	3%	7%
Implement sampling procedures and interpret results. (N=29)	**72%**	21%	7%	0%	0%

	Very Prepared	Moderately Prepared	Marginally Prepared	Not at all Prepared	Don't Know/ Does Not Apply
Assess effectiveness of pollution control measures. (N=28)	21%	**39%**	21%	11%	7%
Implement relevant quality assurance and quality control procedures. (N=28)	25%	**46%**	21%	4%	4%
Interpret environmental law in Canada, including statutes, regulations and policies. (N=29)	28%	**35%**	**35%**	0%	3%

Please highlight any STRENGTHS or SUGGESTIONS related to how the program prepared you to meet these skills.

Comments
Field skills taught were very helpful. Felt the course focused hard on contaminated sites regulations when I completed the course and feel the focus should be moved toward other areas (if not already done)
I feel this program prepared me for the work force more so than my eventual bachelor's degree. The work load was heavy but I feel this put me ahead of others who may have gone to school for a longer term but could not handle a heavy workload. The coop program was hugely beneficial for preparing me for work and it was valuable to have some work experience and references when trying to enter the work force. To improve on the program I would suggest aligning the program with a professional association that is recognized under contaminated sites regulations across the country. Also some focus on remediation techniques, hydrogeology and soil/rock sciences would help if entering a consulting or environmental science line of work. Great program I would recommend to anyone. The hands on labs and heavy workload set me above other candidate for jobs.
I finished EPT August 2014, and have not yet worked in the industry. I found it difficult to find work after graduation, so started working in a different field then decided to continue my education at BCIT September 2015. Having said that, I think the practical components of the program (W&S sampling, the labs in Earth Science, Contaminated Sites, Health & Safety and learning about Life Cycle Analysis in physics) are very useful in the working world. I think this program really needs to incorporate a more practical biology component. For example, attention to streams, estuaries and fish biology since a main

Comments
part of the environmental industry in BC revolves around salmonids and their protection. Also elaborate on plant ID, especially native and invasive spp and what type of plants make good riparian vegetation. It would also be good to focus on population and community ecology to know how ecosystem components interact with each other and how they can be impacted, especially impacts on ecosystem services. As a junior technician, site assessments are within the work scope and having this type of background in biology would be beneficial.
I graduated the EPT program in 1998, so it's difficult to remember exactly how the program prepared me for the above tasks. Certainly there was a base of understanding, but over years of working I've learned more and developed these and other skills.
I learned report writing skills on the job. Program could benefit from including technical report writing, sample Phase 1 and 2 reports, and business cases for implementing environmental programs or upgrades (e.g. lighting for energy conservation).
In my line of work, I deal with high risk situations, each of which vary day to day, with weather conditions, or the people I work with. Course X is the one I have had to use from the get go. I realize how much further ahead I was in understanding Health & Safety compared to those from other programs or those who did not obtain or complete a post-secondary education.
Not sure if the program includes this now or not as I graduated 10 years ago or not but GIS would have been a worthwhile study even if just touching base on it. In general, my biggest strengths coming out of school were sampling, safety, meters and other related field work.
Program gave a very good platform to expand theoretical learned material and having the practical experience was invaluable.
Public speaking was a great skill, especially the "adhoc" ones that Instructor X used to make us do. It put us in a stressful situation and a short time to research one subject plus present to our classmates. Many times in a real life work environment, we've had to put together a public education seminar or something for Mayor and Council. I very much appreciated this skill and have made larger presentations to a variety of both scientists, and public with great confidence.
Several employers have told me they prefer KPU diploma graduates to degree programs because of our practical experience.ie coming out of the diploma we already knew how to water sample. People with a bachelors generally do not. This is/was the strength of this diploma for me and there should be more of this practical hands on experience to set this diploma apart from all the rest.
Some classes were taught in a manner that directly applied to the type of work that could be expected in the environmental field (i.e., water & soil sampling, health & safety, solid waste management, air quality monitoring, contaminated site management). However, others were perhaps too broadly apply (i.e., statistics, legislation). Overall I'm happy with the courses and teachers of the EPT program.

Comments
Strengths: the program provide lots of hand-on training Suggestions: the chemistry and physics courses could have used more environmental examples
Course X was very good and took some specific skills and applied them to practical study. The Environmental sampling program looked at sampling methods, note taking, legal sampling, equipment use and calibration. This back ground was crucial to landing the coop placement and providing a solid foundation for practical field work.
The co-op terms, of course, were essential to actually applying the knowledge. Don't ever consider removing that part. Instructor X's labs and commitment to excellence will always be appreciated, if sometimes begrudgingly :)
The number of presentations that we were required to give was very intimidating for me, but as it turned out this experience was some of the best that I received from this program. The ability to present subject matter to colleagues, clients and the public is very, very important and has gotten me quite far in my career.
The program prepared me very well and overall there was no real weakness to the program as it offered hand on work and lab work as well as great theory! Well done!
The program was great in that it included a bit of everything, such that I was able to begin any task and know generally what direction to take it in. That was good, because one can then ask for assistance once started, and be somewhat conversant. The program covered such a breadth of material, that it was impossible to be 'expert' at any one thing. Compared to others, coming out of university for e.g., I think the program was good preparation for work in the industry.

5. How helpful was your EPT program in developing the following skills?

(N=29)	**Very helpful**	**Moderately Helpful**	**Slightly helpful**	**Not at all helpful**	**Don't know/ does not apply**
Written communication	38%	**52%**	7%	3%	0%
Oral communication	**48%**	45%	7%	0%	0%
Group collaboration	**52%**	28%	10%	0%	0%
Critical analysis	**45%**	41%	14%	0%	0%
Problem resolution	38%	**45%**	14%	3%	0%
Learning on your own	**41%**	**41%**	17%	0%	0%
Reading and comprehension	28%	**55%**	14%	3%	0%

Please highlight any STRENGTHS or SUGGESTIONS related to how the program prepared you to meet these skills.

Comments
Group projects and oral presentations were good practical experience. Application of study and learnings into a presentation within a group produced project, was helpful in identifying group skill sets and weaknesses.
Honestly, most of those skills I came in with already. Again, a commitment to requiring good quality is so important. There is more annoying being on the receiving end of an environmentally report that does not appear/sound professionally written.
I receive regular compliments on my written and verbal communications, mannerism and team work. I owe it to having taken EPT and having completed oh so many group projects and collaborating with others of different personalities and strengths.
The EPT program gave me a good base to start from. Many of my employers had different ways of doing things and I found many mentors over the years to build my skill set and improve my problem resolution and critical analysis skills.
The EPT program required a lot of presentations, which helped with the oral communication skills.
The heavy course load of the program was vital to helping develop my ability to plan my work. A skill critical to any job.
The program offered some great communication practice via report writing and plenty of opportunities to present to other people. These are key areas in which it prepared me well for my employment!

6. If there was a particular topic/area that was missing from KPU's EPT curriculum that would have helped you prepare for related work or further study please tell us about it.

Comments
Better specific focus to the environmental soil and water standards would have been more helpful then broad details of the ccme, csr and BCWQG's. Time factors allowed for broad understanding but less specifics. A concentrated look at the BC CSR would be more applicable to the contaminated sites industry, which I work. Technical writing would be useful.
GIS training
I just wish I could have done a bachelor's in EPT because I feel with the limited number of classes, you only get to cover the surface of the field. I think a bachelor's program would allow for more in depth

Comments
Coverage and a deeper understanding of the principles and theories taught. I feel like upon graduating from the diploma program you know a little in a lot of areas in the environmental field, as opposed to knowing a lot about a specific aspect (or 2) of the environmental field.
Maybe a brief course/seminar on Canadian political science just for background as many end up working either for or closely with various levels of government.
NA
Perhaps some of the more social items, like how to deal with difficult people, getting to yes, conflict resolution, active listening etc. Also, maybe a basic boat safety course (one of those one day ones like PCOC or MED A3).
Project Management - I don't remember the program in 1996 -1998 including much project management, but since then it's a skill that I've had to develop.
Project- and Time management skills would have been helpful.
Remediation techniques hydrogeology and soil-rock sciences. Full courses not a part of a course
See previous page relating to applied biology
When looking for my first job, I found my knowledge of contaminated sites, drilling operations, and pollution modelling was lacking a bit. I also think that some employers expect a lot for entry level jobs!

Program Feedback

7. Thinking of the program as a whole, how helpful has it been with the following:

	Very helpful	**Moderately Helpful**	**Slightly helpful**	**Not at all helpful**	**Don't know/ does not apply**
The program prepared me for employment (N=28)	**75%**	21%	4%	0%	0%
The program prepared me for further education (N=29)	**38%**	17%	7%	0%	**38%**
The program enabled me to achieve my personal goals (N=29)	**59%**	28%	10%	3%	0%
The program provided opportunities for experiential learning (i.e. learning by doing and reflecting) (N=29)	**72%**	17%	3%	0%	7%

The program provided opportunities to develop connections with industry/potential employers (N=29)	**59%**	35%	3%	0%	3%

Please highlight any STRENGTHS or SUGGESTIONS related to how the program helped you in these areas.

Comments
X course, Y course and COOP. Focus on Enviro consulting general background skills was sufficient to land a COOP job and eventually permanent employment.
Excellent program for all of the above
Getting to know the industry professionals/visiting or on staff teachers was very helpful. However, it's important to get good TEACHERS above all else. So, just having connections or being in the field should not be the criteria for hiring industry professionals on staff, temporary or otherwise. Teaching skills or an interest in gaining teaching skills should be a prerequisite for becoming a teacher at KPU
I do plan to go back to school, perhaps for a bachelors in biology (meaning only one year of my studies would apply towards that degree). The program was very hands on, which was nice. Co-op provided the opportunity for gaining experience, but hardly created job opportunities after graduation. I do feel like the co-op positions I obtained wouldn't hire an EPT grad because they were just looking for cheap temporary student labour instead of long-lasting connections to developing environmentally focused individuals.
Strengths were the co-op positions, allowing me to learn on the job, and it provided me the educational background and experience to allow me to complete a degree several years later.
The biggest strength was the coop education. My first employer picked me out of 200 potential applicants in the first round because I had the relevant experience as well as the education.

8. Thinking of your program as a whole, to what extent would you agree with the following?

	Strongly agree	**Somewhat agree**	**Slightly agree**	**Neither agree or disagree**	**Slightly disagree**	**Somewhat disagree**	**Strongly disagree**
The time I invested in my EPT education was well spent (N=29)	**72%**	24%	3%	0%	0%	0%	0%

The money I invested in my EPT education was well spent (N=29)	**76%**	21%	3%	0%	0%	0%	0%

9. In your opinion, what were the strengths of KPU's EPT program?

Comments
Applied practical skill courses and environmentally focused components of general science courses
Breadth and relevance of material covered.
Coop, hands on field work and the adaptability if the program.
Heavy workload prepared me for heavy workloads in continued education and employment and scheduling and prioritizing. Hands on labs sampling techniques and equipment familiarization was top notch. Presentation skills were very helpful. I can't say enough good things about this program.
Helps get you in the door
Knowledgeable teachers who worked in env industry, co-op program, hands on experience
Lots of companies prefer KPU diploma graduates due to their practical skills. Also the coop was great for finding work and making connections. The job I have now is, partially, thanks to the second coop job I did in the KPU program back in 2005. The environmental technician world is a small tight knit world and the connections follow you everywhere.
One of its strengths is also its weakness- the program is so general and touches base on many different aspects that it allows graduates to work in many different industries involving the environment. But because it is so general, if an employer is looking for expertise in a field, graduates may be lacking and be outcompeted for more qualified graduates from other programs.
Practical learning with a small group of your peers. The co-op education component. In my time, the overall quality of the instructors was very good with "outside" experts teaching several classes. (i.e. environmental law, toxicology).
Small class sizes Good personal relationships with classmates and profs/ instructorsSupport from program profs/ instructors outside of class hours Contract instructors right out of the industry with real life experience and knowledge Variety of co-op opportunities within and outside of Canada Hands on fun factor - I learn way better and retain more if I do things rather than just read about them Option to complete part time to accommodate those of us who have to financially support ourselves

Comments
Strengths are - real world experience through coop education, concentrated learning, use of the same equipment and protocols as would be seen on the job.
The caring teachers (especially Instructor X, Y and Z!). They were always available and willing to help and they were passionate about the program.
The co-op for sure! The instructors and quality of courses was very good. The classes were very reasonably sized.
The lab work, the hands on field work and the large amount of group work which allows you to develop skills with working with different people in different environments. This is very important when working as you will be working with many different people through your career!
Very general program, which is great for finding all kinds of jobs.

10. What should be changed about KPU's EPT program and why?

Comments
Alignment with professional organizations and more focus on remediation and earth science related to soils rocks hydrogeology.
Don't make the courses so easy. The real world is far more challenging.
General courses such as Chemistry and Biology had less industry focused components to the EPT program. This was an advantage to getting foundations but less focus on the practical job uses was achieved. Mathematics was added after I was finished with the program around 2003 this is a general foundation skill which is more valuable than say, Physics as a whole. Subject X is not useful in a practical sense because the foundation is not enough to do practical industry work. The same goes for Subject Y. This view in my opinion makes practical skills more valuable for getting entry level jobs but gives less foundation to go onto full degrees. A balance needs to be met between a 2 year program designed for practical application and marketed to people supplementing their degrees and providing a good 2 year Technician program. Since the 2 year technician program is not a good foundation for a degree in terms of time spent, I would propose that the Diploma Program focus more on practice.
I graduated the EPT program in 1998 and so don't know enough about the current status of the program to suggest changes.
I think it has been great the way it was/ is.
Increase to a degree program as an option after diploma. More jobs available with degree
Lots of companies prefer KPU diploma graduates due to their practical skills. This should be stressed in the program to set it apart from other programs. Of course the basics of project management and analysis of data should be covered, but coming out of the program the students are most likely to have

Comments
field or other data gathering jobs. So, the practical hands on part of the program should take precedence in my opinion over writing in depth reports.
Much has changed in the program from when I graduated so I'm unable to make comments here. It's good to see that the program has evolved and that the ASTTBC now consider EPT grads as Technologists.
NA. The program should continue to offer as much hands on died and lab work as possible! These surely come in handy in the job!
Option for continuation for a degree. More co-op employers who legitimately want to hire EPT grads. And if possible, a reschedule in courses that allows for a slightly easier year two summer semester (it was brutally tough).
Order of courses - Health and Safety before first co-op (if hasn't happened already).
See previous note about applied biology

11. Do you have any further comments relating to your experience with KPU's EPT program overall? Please tell us.

Comments
Excellent program. Very knowledgeable instructors. Best education choice I ever made.
Great program, great instructors. Keep it up!
Great program! Great professors and great structure!
I had a very hard time finding environmental work, both for my co-op jobs and after graduation. I've had a few environmental jobs and wasn't very happy with them. I am changing careers - I am now looking for work as a software developer. Loved the EPT program while I was in it. It was challenging, I learned a ton and it was great fun. But once I graduated and discovered how hard it was to find environmental work, I was very unhappy. I was expecting a job market hungry for new environmental technologists, and that is not what I found. Unfortunately this post-graduation experience has coloured my view of my time in EPT.
I have no regrets. Well, maybe that I aimed for really good marks. That nearly killed me. That was a seriously intense program. I'm employed in the field and this is directly because of the program. I value very much that should I decide to go back to conclude my degree, the program transfers over at full credit.
I loved pretty much all the teachers and courses. It was a tough but valuable two years. I only wish it was easier to get a job after graduation but that's more on my end of it than the programs (I did have a

Comments
six month contract with one company so far, but otherwise I have not been working in the environmental field).
I still can't believe how far I got with my diploma alone and what I gained from it. It was such a huge strength to have practical hands on training that helped me get jobs over others that had degrees alone.
I would recommend this program 100%
I'm pleased with the experience overall and it definitely got me to where I wanted to be after I graduated. Over time, I've made some different career choices and am now out of the Environmental Protection field, but overall, it was still a great start and I would recommend it to anyone.
It's been almost 20 years since I graduated, but the EPT program prepared me for entry-level employment in the environmental field and allowed me the basis for continuing on to finish my degree. I still work mainly in the environmental field. Overall I'm happy with my experience with the EPT program.
Thank you
The program was great. It did its best to cover all aspects of the technical environmental field. The practical knowledge from the laboratory side of the program is probably the area that served me best in the real world. I knew more about how to sample properly than most of the engineers I worked with.
The program was INTENSE. Looking back, I really enjoyed it and learned a ton. I really learned how to work in a team and collaborate with others. This is not an official course but has been one of the most important take-always from the program. It is what employers look for and what has made me succeed in my career so far. You don't always choose who you work with, but you can have the tools to complement your teammates' capabilities and skills. Having worked in the field for the last 3 years, I consistently find what I learned in EPT has given me an edge over grads from other programs (diploma and degree).

Employment

12. Which of the following best describes your current employment situation?

	Frequency	**Percent**
In a full-time position	21	81%
In a contract position	3	12%
In a part-time position	2	8%
In a casual or temporary position	0	0%
Self-employed or freelancing (part-time)	0	0%
Self-employed or freelancing (full-time)	0	0%
Other	0	0%

13. Does your current position draw upon skills and knowledge you gained through the EPT program?

	Frequency	Percent
Yes	23	89%
No	3	12%

14. In which of the following industry sectors are you currently employed?

	Frequency	Percent
Environmental Consulting	7	27%
Government (Environmental Monitoring and Enforcement)	7	27%
Government (other)	6	23%
Other (non environmental)	5	19%
Environmental Contracting	1	4%
Environmental Education	0	0%
Government (Environmental Planning)	0	0%
Non-Government Organization (e.g. non-profit group, activist group, etc)	0	0%

If other, please specify:

Comments
Education
Industrial
non-environmental
Public Sector
Transportation

15. In which of the following fields of activity do you mostly work? Please select all that apply:

	Frequency
Other	12
Contaminated Sites	7
Waste Management	7

	Frequency
Water Quality	7
Air Quality	4
Health and Safety	4
Environmental Sustainability	3
Impact Assessment	1
Resource and Wildlife Conservation	1

If other, please specify:

Comments
Administrative/ Program Coordinator
Customer Service
Education, without environmental focus
Equipment management for field sampling. Field programs broad based. H&S.
human resources
landfill gas monitoring
Liquid Waste
northern hydrology and climate impacts research
Project and Program Management (includes some environmental component)
Regulatory and Enforcement
Spill/ Incident Response
wastewater treatment, Environmental Management System

16. Which of the following best describes your current position? Please select all that apply:

	Frequency
Field Technician/Technologist	8
Environmental/Enforcement Officer	6
Technician/Technologist	5
Administration/Management	3
Consultant	3
Project Manager/Coordinator	3
Other	3
Educator	1

Lab Technician/Technologist	1
Research Assistant/Researcher	1
Engineer	0
Writer	0

If Other, please specify:

Comments
Mentor and small crew supervisor; health and safety
Public Sector
Risk Assessor

17. If possible, could you specify the organization where you are currently employed? This information will help us better determine KPU graduates' career trajectories.)

Comments
Arcadis Canada Inc.
BC Ministry of Environment
City of Surrey
City of Vancouver
City of Vancouver, Engineering Assistant 2, Landfill Gas Technician
Coast Mountain Bus Company
Defence Construction Canada
Environment and Climate Change Canada
Environmental Consulting company mostly deals with contaminated sites (in Vancouver office)
Envirosystems (formerly Tervita)
Golder associates Halifax office
I have worked for Municipal Government Engineering Departments as well as Bylaw Enforcement. Regulatory enforcement is where I eventually ended up. I am currently with Bylaws at Islands Trust, a Land Use Planning Authority in the Gulf Islands. We have an Environmental Preservation mandate, so my training helps me work with both the environmental professionals as well as our regulatory scheme.
Keystone Environmental

Comments
KPU
Metro Vancouver
Metro Vancouver - liquid waste services
Was with Federal Government, currently am with Regional Government but going back to Federal w/in two months

18. What is your annual salary or income?

	Frequency	**Percent**
$60,000 to $74,999	12	46%
$75,000 to $89,999	7	27%
$30,000 to $44,999	3	12%
$45,000 to $59,999	3	12%
Up to $30,000	1	4%
over $90,000	0	0%
Prefer not to say	0	0%

Further Education

19. Please list the name of the program and the institution where you enrolled after completing your KPU EPT program (e.g. B.Sc. in Biology, Simon Fraser University).

Comments
B.Sc. in Biology, Thompson Rivers University
B.Sc. in Environmental Science at Royal Roads University
BBA Entrepreneurial Leadership, KPU
BCIT B.Sc. in Ecological Restoration
BSc royal roads environment science
JIBC - Investigative Skills and Enforcement Certificate (completed) , JIBC - Conflict Resolution Certificate - with Specialization in Negotiation (currently in progress), JIBC Emergency Management & Security Degree (also in progress)
Never did end up going back yet but have researched Royal Roads multiple times (and BCIT once but it did not go well!).
Royal Roads
Web Development Bootcamp, Lighthouse Labs

20. What is the highest credential you have earned or are currently earning since completing KPU's EPT program?

	Frequency	Percent
Associate Degree	6	60%
Diploma	4	40%
Bachelor Degree	0	0%
Master Degree	0	0%
Doctorate	0	0%

Alumni Connections

KPU's EPT program would like to keep in closer touch with alumni, to share news, publicize job postings, send invitations to special events and provide information about other networking opportunities.

21. What possible functions of such an Alumni group would you value?

	Frequency	Percent
Sharing information relevant to work and professional practice	6	23%
Helping alumni connect with prospective employers	5	19%
Organizing professional development workshops	5	19%
Facilitating networking opportunities for KPU's EPT alumni	4	15%
Creating online community and resources for KPU's EPT alumni	3	12%
Other. Please specify.	2	8%
Promoting KPU's EPT alumni	1	4%
Organizing social events	0	0%

If other, Please specify:

Comments
I don't know, can you help me find work as a software developer? Otherwise I'm not sure what KPU has to offer me anymore.
I'm always happy to talk to students looking to enter the world of regulatory enforcement

22. How interested would you be in joining a KPU EPT Alumni Association?

	Frequency	Percent
It would depend on what was offered and my availability	12	43%
I would probably attend some events/activities	8	29%
Sorry, I am not currently interested.	5	18%
I would like to receive information/social media alerts but would be unlikely to attend events/activities	3	11%
I would like to be actively involved	0	0%

Accreditation Audit Report

Educational Institution: Kwantlen Polytechnic University **Audit Team Visit Date: October 20, 2016**

Program (, Option): Environmental Protection Technology

Accreditation Level:
- ☐ Technician
- ✓ Technologist

Type of Accreditation:
- ✓ Initial Accreditation
- ☐ Subsequent Accreditation

Recommendation of the Audit Team:

- ✓ The program should be accredited for five (5) years.
- ☐ The program should not be accredited until non-compliant items are resolved through further investigation and/or submitted material by [insert date that is six months or less from the Audit Report Date].

Lead Auditor's Name:	Gary Closson	CET, PEng.
Auditor's Name:	Ariel Estrada	AScT., PEng.
Auditor's Name:	Geoff Sale	AScT.

Accreditation Audit Summary

The assessment of the program is indicated by the letters in the 'Rating' column using the following code system:

NC	Not Compliant (Does not meet the Criteria)
C	Compliant (Meets the Criteria)
NA	Not applicable

Important Note: NC ratings must be resolved before accreditation can be granted.

Part A: Program Background Information (Does not affect accreditation decision)

Criteria	Submitted Yes/No/NA
A.1 Program History	Yes
A.2 Program Option Names and Descriptions	Yes
A.3 Program and Option Instructional Delivery Modes	Yes
A.4 Program Organizational Structure	Yes
A.5 Program Enrolment Numbers	Yes
A.6 Program Graduate Numbers	Yes
A.7 Program Graduate Employment and Further Education Numbers	Yes

Part B: Student Policies

Criteria	Rating
B.1 Admission Policies	C
B.2 Policies for Monitoring Student Progress	C
B.3 Academic Policies and Procedures	C
B.4 Student Transfer Policies	C

B.5 Co-op and/or Internship Policies	C
B.6 Graduation Requirements	C

Part C: Program Policies

Criteria	Rating
C.1 Program Development Policies and Procedures	C
C.2 Program Continuous Improvement Policies	C
C.3 External Program Input	C

Part D: Program and Course Information

Criteria	Rating
D.1 Program Description Documents	C
D.2 Program Objectives	C
D.3 Course Outlines	C
D.4 Transcript and Diploma	C
D.5 Scholarship and Bursary Information	C

Part E: Program Learning Outcomes

Criteria	Rating
E.1 Program Discipline Learning Outcomes	C
E.2 Program General Learning Outcomes	C
E.3 Student Work	C
E.4 Technology Reports (for Technologist Programs only)	C

Part F: Faculty

Criteria	Rating
F.1 Faculty Qualifications (Program Discipline Learning Outcomes)	C
F.2 Faculty Qualifications (Other Faculty)	C
F.3 Faculty Workload (Program Discipline Learning Outcomes)	C

Part G: Facilities, Resources and Other Student Support

Criteria	Rating
G.1 Offices, Classrooms and Labs	C
G.2 Maintenance and Upgrade of Facilities	C
G.3 Health and Safety Procedures	C
G.4 Student Research and Library Resources	C
G.5 Student Academic Resources and Support	C
G.6 Student Career Resources and Support	C

Unique Program Features

Co-op, fieldwork, and extensive research report writing experience

Not Compliant Items

None

Recommended Improvements

- Students should be given an opportunity to defend their capstone report or other reports and the results of their project.
- There should be a marking scheme or rubric for the Technical/Research Report.
- Encourage faculty members to register with related professional associations if they have not done so already.
- A comprehensive Health and Safety Plan should be developed for the labs. Material Safety and Data Sheets (MSDS) signs and binders should be displayed and kept in central locations where hazardous chemicals are used.
- Contract faculty teaching critical courses in the program should be consulted regarding changes to the program and kept up-to-date on policy and resources for faculty and staff.
- More effort should be made to ensure that Contract Faculty, students, and staff are aware of and understand the use of the Early Alert System.
- It would be useful to have a job developer for Co-op to help find more potential employers, especially for the winter term.
- A Terms of Reference should be written for the Advisory Committee (e.g. quorum, chair, role of students, members list who are in attendance and not present)
- Consider changing the Ecology course, BIOL 2322, so that the student work is more closely related to Environmental Protection Technology. This would make it a better fit for the Discipline Outcome, BSTY10 (Professional Reporting).

Best Practices

- The Early Alert System to enable instructors to initiate support for students who are likely to fail.
- Changes to programs and courses are vetted by an active Faculty Council of the Faculty of Science and Horticulture as a first step in institutional approval.

- A rigorous Internal Program Review is conducted every 5 to 7 years with support from the Office of Institutional Planning and Analysis and in this instance has been integrated with the TAC Accreditation Review.
- The Course Outlines have a consistent well-though-out layout that include minimum lecture and lab content as well as learning outcomes.
- Faculty members are very active in program-related professional development.
- The Cuba Research Internship is an excellent opportunity for an international work experience.
- Library staff give EPT students library instruction in research, citation and plagiarism, as well as an introduction to the research manager Zotero, as part of the course ENVI 2315.
- A dedicated Co-op office helps student with work placements as well as entry level jobs upon graduation.
- Students receive a great deal of support outside of class time from the faculty and staff of the program.

Accreditation Audit Detailed Report

Part A: Program Background Information (Does not affect accreditation decision)

Criteria	Submitted Yes/No/NA
A.1 Program History	Yes
A.2 Program Option Names and Descriptions	Yes
A.3 Program and Option Instructional Delivery Modes	Yes
A.4 Program Organizational Structure	Yes
A.5 Program Enrollment Numbers (See Table 1)	Yes
A.6 Program Graduate Numbers (See Table 1)	Yes
A.7 Program Graduate Employment and Further Education Numbers (See Table 1)	Yes
Recommended Improvements: Best Practices:	

Part B: Student Policies

Criteria	Descriptors	
B.1 Program Admission Policies **Rating: Compliant**	.	**Compliant**: Policies related to program admission requirements based on secondary school courses and grades are documented and available to all applicants. Policies for other admission paths (for mature students for example) are documented and available to all applicants.
	Recommended Improvements: none Best Practices: none	
B.2 Policies for Monitoring Student Progress **Rating: Compliant**		**Compliant**: Policies used to monitor student progress each semester to ensure that pre-requisite course credits have been obtained are documented and available to all students.
	Recommended Improvements: More effort should be made to ensure that Contract Faculty, students, and staff are aware of and understand the use of the Early Alert System. Best Practices: Early Alert System to enable instructors to initiate support for students who are likely to fail.	

B.3 Academic Policies and Procedures **Rating: Compliant**		**Compliant**: Institutional and/or departmental policies on plagiarism, cheating, grade appeals, etc. are documented and available to all students.
	Recommended Improvements: none Best Practices: none	
B.4 Student Transfer Policies **Rating: Compliant**		**Compliant**: Articulation and transfer agreements for the program and options are documented and available to all applicants and students.
	Recommended Improvements: none Best Practices: none	
B.5 Co-op and/or Internship Policies **Rating: Compliant**		**Compliant**: If the program or options include co-op or internship placements, clear processes and procedures are documented and available to students. The processes and procedures include how to: obtain a placement, get credit for the placement, ensure that the placement is relevant to the area of study, have the placement assessed, and find other options available if a placement opportunity is not possible.

	Recommended Improvements: It would be useful to have a job developer for Co-op to help find more potential employers, especially for the winter term. Best Practices: none	
B.6 Graduation Requirements **Rating: Compliant**		**Compliant**: Graduation policies related to passing grades for courses, overall program average grade, number of credits, etc. exist and are documented and available to all students.
	Recommended Improvements: none Best Practices: none	

Part C: Program Policies

Criteria	Descriptors	
C.1 Program Development Policies and Procedures **Rating: Compliant**		**Compliant:** Timelines, institutional processes, and governance for program and course development are documented and available. Program and course changes are documented and understood by all faculty members and program administration.
	Recommended Improvements: none Best Practices: Changes to programs and courses are vetted by an active Faculty Council of the Faculty of Science and Horticulture.	
C.2 Program Continuous Improvement Policies **Rating: Compliant**		**Compliant:** Policies for program continuous improvement are documented and available. Periodic program self-assessments producing recommendations that are used for changes that lead to improvements in the curriculum and/or student success are documented and available.
	Recommended Improvements: none Best Practices: A rigorous Internal Program Review is conducted every 5 to 7 years with support from the office of Institutional Planning and Analysis.	

C.3 External Program Input **Rating: Compliant**		**Compliant**: A Program Advisory Committee exists. Names and contact information for the current Program Advisory Committee members are documented and available. Minutes from Program Advisory Committee meetings over the past three years are documented and available. Reports are provided from any other external bodies that reviewed the program over the past three (3) years.
	Recommended Improvements: A Terms of Reference should be written for the Advisory Committee (e.g. quorum, chair, role of students, members list who are in attendance and not present). Best Practices: none	

Part D: Program and Course Information

Criteria	Descriptors	
D.1 Program Description Documents **Rating: Compliant**		**Compliant:** Sufficient printed and/or online calendar information, brochures, program handbooks, and web-based information about the program are available to anyone interested in learning about the program. The URL is provided for the program and program options.
	Recommended Improvements: none Best Practices: none	
D.2 Program Objectives **Rating: Compliant**		**Compliant:** Program objectives are a good fit for the mission statement of the Educational Institution.
	Recommended Improvements: none Best Practices: none	

D.3 Course Outlines **Rating: Compliant**		**Compliant:** Course outlines are available for all courses in the program and program options. All course outlines include: the course ID, course title, date of last revision, prerequisite(s), corequisites, course description, textbook(s) or other support materials, methods of assessment (assignments, tests, projects) and course outcomes.
	Recommended Improvements: none Best Practices: The Course Outlines have a consistent well-though-out layout that include minimum lecture and lab content as well as learning outcomes.	
D.4 Transcript and Diploma **Rating: Compliant**		**Compliant:** An accurate and complete transcript and diploma are provided for the program and all program options.
	Recommended Improvements: none Best Practices: none	
D.5 Scholarship and Bursary Information **Rating: Compliant**		**Compliant:** A list is available in print and/or online of all available scholarships and bursaries, and their amounts, for new applicants to the program and current students. Application forms are also available with the list.
	Recommended Improvements: none Best Practices: none	

Part E. Program Outcomes

For Criteria E.1 use Tables 2 and 3 which were completed by the Educational Institution as part of the Accreditation Self-Assessment Package.

For Criteria E.2 use Tables 4 and 5 which were completed by the Educational Institution as part of the Accreditation Self-Assessment Package.

For Criteria E.3 and E.4 use student work provided by the Educational Institution. For these Criteria complete Table 6 to evaluate the sample work provided.

<table>
<tr><th>Criteria</th><th colspan="2">Descriptors</th></tr>
<tr><td rowspan="2">E.1 Program Discipline Learning Outcomes

Rating: Compliant</td><td></td><td>Compliant: The program courses enable students to achieve appropriate Discipline Learning Outcomes. TAC accreditation requires that the program have five (5) main Program Discipline Learning Outcomes.</td></tr>
<tr><td colspan="2">Recommended Improvements: Consider changing the Ecology course, BIOL 2322, so that the student work is more closely related to Environmental Protection Technology. This would make it a better fit for the Discipline Outcome, BSTY10 (Professional Reporting).

Best Practices: none</td></tr>
<tr><td rowspan="2">E.2 Program General Learning Outcomes

Rating: Compliant</td><td></td><td>Compliant: The program achieves all of the eight General Learning Outcomes specific to the technician or technologist level.</td></tr>
<tr><td colspan="2">Recommended Improvements: none

Best Practices: none</td></tr>
</table>

E.3 Student Work **Rating: Compliant**		**Compliant:** Student work, including tests, exams, assignments and technology reports (if applicable) contribute to the Program Discipline Learning Outcomes. Student work and marking schemes clearly match the Demonstrable Learning Outcomes listed in the course outlines.
	Recommended Improvements: none Best Practices: none	
E.4 Technology Reports (for Technologist Programs only) **Rating: Compliant**		**Compliant:** A Technology Report is a required component of the program and is evaluated by the Educational Institution. If the Technology Report is completed by multiple project team members, there are documented processes in place to ensure an equal contribution by all team members. There is also evidence that this process for ensuring an equal contribution by all team members is followed.
	Recommended Improvements: Provide a marking scheme or rubric for the report and presentation. Students should be given an opportunity to defend their report and the results of their project. Best Practices: none	

Part F: Faculty

For Criteria F.1 use Table 8 which was completed by the Educational Institution as part of the Accreditation Self-Assessment Package.

For Criteria F.2 use Table 9 which was completed by the Educational Institution as part of the Accreditation Self-Assessment Package.

For Criteria F.3 use Table 10 which was completed by the Educational Institution as part of the Accreditation Self-Assessment Package.

Criteria	Descriptors	
F.1 Faculty Qualifications (Program Discipline Learning Outcomes) **Rating: Compliant**		**Compliant:** The program has documented policies and procedures for hiring qualified faculty for courses in the Program Discipline Learning Outcomes. There is documented evidence that the program follows these policies and procedures, including evidence of appropriate and relevant academic qualifications, teaching experience, work experience, professional certifications and professional development.
	Recommended Improvements: Encourage faculty members to register with related professional associations if they have not done so already. Best Practices: Faculty members are very active in program related professional development.	
F.2 Faculty Qualifications (Other Faculty)		**Compliant:** The program has documented policies and procedures for hiring qualified faculty for other courses. There is documented evidence that the program follows these

Rating: Compliant		policies and procedures, including evidence of appropriate and relevant academic qualifications, teaching experience, work experience, professional certifications and professional development.
	Recommended Improvements: Contract faculty teaching critical courses in the program should be consulted regarding changes to the program and kept up-to-date on policy and resources for faculty and staff. Best Practices: none	
F.3 Faculty Workload (Program Discipline Learning Outcomes) **Rating: Compliant**		**Compliant:** The program has documented policies and procedures about faculty teaching workload, preparation and assessment marking working, class sizes and lab sizes. There is documented evidence that the program follows these policies and procedures.
	Recommended Improvements: none Best Practices: none	

Part G. Facilities, Resources and Other Student Support

Criteria	Descriptors	
G.1 Offices, Classrooms and Labs **Rating: Compliant**		**Compliant:** The office space, classroom space, lab facilities, meeting rooms for faculty and students, office support and lab support staff are sufficient to meet the needs of the students and faculty.
	Recommended Improvements: none Best Practices: none	
G.2 Maintenance and Upgrade of Facilities **Rating: Compliant**		**Compliant:** Procedures and processes are in place to maintain and upgrade the tools, equipment, computing resources and laboratories used by students and faculty members in the program. These processes and procedures are documented.
	Recommended Improvements: none Best Practices: none	
G.3 Health and Safety Procedures **Rating: Compliant**		**Compliant:** Health and safety procedures for all facilities are documented and available. Processes for training students and staff in the health and safety procedures are documented and available. There is documented evidence that these student and staff training procedures have been followed. Health and safety warnings are clearly displayed in facilities as appropriate.

	Recommended Improvements: A comprehensive Health and Safety Plan should be developed for the labs. Material Safety and Data Sheets (MSDS) signs and binders should be displayed and kept in central locations where hazardous chemicals are used. Best Practices:	
G.4 Student Research and Library Resources **Rating: Compliant**		**Compliant:** The library and online resources are sufficient for students to do the research required for their course assignments, their capstone or final year projects (if required) and technology reports (if required).
	Recommended Improvements: none Best Practices: Library staff also give EPT students library instruction in research, citation and plagiarism, as well as an introduction to the research manager Zotero, as part of the course ENVI 2315.	
G.5 Student Academic Resources and Support: **Rating: Compliant**		**Compliant:** Course-related resources and faculty support are available to students in the program for coursework, homework, research and lab projects.
	Recommended Improvements: none Best Practices: none	
G.6 Student Career Resources and Support: **Rating:** Compliant		**Compliant:** Resources, advisors and other institutional support are available for student career counselling and guidance.
	Recommended Improvements: none Best Practices: A dedicated Co-op office helps student with work placements as well as entry level jobs upon graduation.	

Site Visit Interviews

Current Student Interviews

1. Why did you choose this institution and/or this program?

- There is the opportunity for Co-op work experience.
- The program is accredited.
- The program offers extensive hands-on field experiences.
- The program is accredited and credits are transferrable to Royal Roads University.
- It is better than the program at BCIT because of the hands on experience.
- The program has small class size that students enjoy personalize-like teaching atmosphere.
- Courses offer a broad range of environmental spectrum.
- KPU's EPT program has a very good reputation in the environmental industry.
- The program has good foundation in science and public health industry.

2. Do you feel that your expectations have been met?

- Yes. The small class sizes have made it possible to get extensive help from faculty and staff in the program.
- The expectations have been met and the field work and laboratory exercises exceeded expectations.
- Yes. The small class sizes have made it possible to get extensive help from faculty and staff in the program.

3. Can you give an example of how a faculty member and/or administrator provided you useful support or assistance?

- One student was helped when a faculty member provided a reference letter for a job application and for an award application.
- Faculty members frequently make themselves available for help outside the class.
- Faculty/staff members are approachable and helpful to students.
- Rapport between faculty/staff/administrators with students are always good; easy to talk to.

4. Who is there for you to talk to about student issues? Is this help readily available?

- There are Academic Advisors to help with student issues.
- There is an Early Alert System so that students at risk can obtain the required assistance.
- Students can come to the Learning Centre and/or faculty members for course assistance.

5. Are course outlines available before each semester?

- Course Outlines are always available for each course plus specific Course Presentations from each instructor with more details about a specific instance of the course.
- Course Outlines are readily available before each semester.

6. Do your course outlines generally reflect what you learn in class?

- Course Outlines and Course Presentations reflect what is learnt in class.

7. What do you consider the strengths of this program?

- Hands-on learning experience, fieldwork, lab work and Occupational Health and Safety Training are all strengths that help students get jobs and succeed in their careers.
- The program schedule and co-op terms are flexible.
- The program prepares students to be employable after graduation.

8. What would you like to see changed for the program and/or the institution?

- Some courses and/or further education in Renewable Energy, Resource Management, Environmental Sustainability, and Cultural Shifts required to maintain a healthy planet.

9. How well do the lab facilities support the program?

- The labs have a good mix of old and new equipment. Sometimes the equipment in the labs is better than in the workplace.
- A new ICP (Inductively Coupled Plasma) mass spectrometer was recently acquired by KPU to reinforce the program's analytic tools in detecting trace metals and several non-metals in soil.

10. Are the study areas, library resources, online reference materials, etc. sufficient?

- The study areas and library resources are sufficient and are often open for extended hours when the students need to do research for projects.

11. What do you know about your Provincial Professional Association?

- The students know about ASTTBC and many are already registered as student members.

Alumni Interviews

1. Why do you remain involved with this Educational Institution and program?

- One alumnus was invited to join the Advisory Committee after three years of work experience.
- Alumni enjoy letting KPU know the current industry trends.
- They want to give back to the Educational Institution and program through mentorship, sharing latest trends in the industry; and provide co-op opportunities in their workplace.

2. Did this program prepare you well for your career?

- The lab and field work helps alumni find and succeed at related jobs.
- Yes. The co-op programs help the students apply the knowledge they learned in the classroom.

3. What are the major strengths/weaknesses of this program?

- Strengths of the program are Co-op, hands-on project work, liaison with other departments for student projects and opportunity for collaborative projects with the public/private sector, flexible program schedules and course-focus.
- The program is well known and respected throughout the Environmental sector in the region, and good mentoring and networking opportunities are available to students and grads.
- EPT cohorts are not especially cohesive, compared with other business, health and technology programs at KPU. This is not a problem for either the students or the program, and it is generally accepted that such flexibility is an advantage rather than a difficulty.
- Weaknesses of the program are the lack of basic engineering plan interpretation; lack of knowledge in plant identification and dendrology (study of trees and shrubs); more emphasis on community/First Nations involvement or consultation process and environmental stewardship.

4. What would you recommend to improve the program?

- Make it easier for students to continue their education and obtain a Bachelor's Degree.
- Inclusion of a calculus course or higher math.
- Identify bridging courses to make transition to university level easier.
- Inclusion of specialty courses on: renewable energy, environmental sustainability, anthropogenic climate change, flood hazard and risk management, erosion and sediment control; landscaping or invasive species control; basic engineering drawing interpretation; on-line WHIMIS and relevant field safety courses; more emphasis on environmental sustainability and community environmental stewardship.

5. Was the institution/faculty/staff support a contributor to your success in the program?

- Faculty and staff provided sample reports and one-to-one support for the projects done in many of the courses.

Faculty Interviews

1. Why did you decide to work at this institution?

- The job related well to my industry experience.

2. Do you have industry experience? If so, how has that helped you in your teaching career?

- Yes! was the common answer – This helped make the course content relevant when related to real-life job experience.

3. Have you recently participated in PD activities? How have they helped you provide a better learning experience for your students?

- Expect and accept regular instructional assessment through in-lecture audit and by (*department administrators)* and others, and welcome any feedback.

4. Give examples of how the institution and/or your program administration support your PD?

- Faculty members all have PD funding available to cover a portion of the cost.
- Contract faculty and Lab Technicians are not sure where to go for PD support.
- Good relationships are actively maintained with all KPU EPT management, faculty, staff, advisory committee members, graduates and employers.
- Professional development is encouraged at KPU, which provided funding (capped at 0.6 of cost) for this instructor's Master's thesis.
- New equipment is frequently acquired, both by donation and by purchase. Training for the optimum operation of such new items as an ICP has proven to be a challenge.
- Have never requested any PD support from KPU and is not familiar with PD availability or procedures.

5. What would you like to see changed/continue in the program, facilities, or the institution?

- It would be useful for KPU to bridge to a Geography Science Degree developed at KPU.
- Strong practical course content is emphasized, with theory supporting lab and field work rather than the reverse. KPU ETP lab equipment is notably better than that at competing EPT programs.
- Note: Relatively small course content changes are both possible and encouraged, but major program changes are difficult, mainly due to the already full curriculum load for students; significant additions must be offset by eliminations to maintain the two-year program structure. Changes are most often prompted by responses to regulatory changes from governments rather than to equipment or methodology changes by industry.
- Recently liaised with *(lab instructor)* to discuss possible changes in lab/lecture ratios to better prepare students for co-op work opportunities.

Program Advisor Interviews

1. Why did you choose to become an advisor for this program?

- Advisors like to contribute to the program and make recommendations for change so that they can recommend graduates for their organization.
- Many were alumni and they wanted to let current students and faculty know the trends in the field.
- Some alumni wanted to recruit graduates from the program.

2. How many meetings have you attended over the past three years?

- The number and meetings that were attended by advisors varied from 2 to 5 out of the 6 meetings.

3. Do you feel that the meetings are productive? If so, in what ways are they productive?

- The meetings were seen to be productive but members believed that there was often a consensus that was used to suggest a change but there were no rules about the need for a quorum or whether students had a say in decisions.

4. Do you feel that your ideas have helped to bring changes that benefitted the students in the program?

- The chemistry course was changed based on a recommendation by the Advisory Committee.
- The EPT program managers maintain close ties with industry, and ideas and suggestions brought to Advisory Committee meetings by industry reps are invariably welcomed and often implemented, although seldom immediately.

5. What changes to the program and/or facilities would benefit the program?

- None mentioned

6. Have you or your company hired graduates from this program? If so, would your company hire more?

- Yes, graduates from the program have been hired by the companies of some of the alumni.

7. How do you feel that you benefit from being involved as an advisor?

- The Advisory Committee is a good way to stay on top of the changes in the program, to get to know the faculty members, to have input into changes, and to meet students in the program.

Employer Interviews

1. Have you or your company hired graduates from this program?

- Yes, the company has hired EPT graduates.
- The City has hired co-op students for certain projects.

2. If yes, how well have the graduates performed? What strengths did they have as employees? What weaknesses did they have as employees?

- The on-the-job training sessions are shorter due to the knowledge and skill set the graduates possess.
- Strengths: The graduates have the ability to learn quickly and easily adapt to the work environment. They apply technical skills learned from the program and thus require minimal supervision.
- Weaknesses: Lack of understanding in interpreting engineering drawing, symbols, specifications, etc. lack of understanding about community stewardship.

3. If yes, will you continue to hire graduates from the program when you have positions to fill?

- Certainly without a doubt, because they possess employable skills for the job.

4. If no, is there any reason you have NOT hired graduates of the program?

- There are some instances that the company do not hire EPT graduates on the basis of: there's no funding/budget available for the new hire; the position requires higher/specialty skills set; and the position requires certain number of related experiences.

5. Based on what you know about both this program and the demands of working in this field, what would you recommend be changed about the program?

- There is a spike demand in the environmental industry for sediment and erosion control technicians; hydrometric and water quality monitoring technicians and in the energy renewable and environmental sustainability sectors. There is a need to incorporate these specialized topics/courses in the program to be more employable and competitive in the industry.

6. What are trends in the field or sector that the program administrators need to be aware of?

- Program administrators should be aware of high demands in the environmental sector for sediment and erosion control technicians during construction; water quality technicians and laboratory technicians on water and wastewater related research initiatives.
- Grads from this program are employed all across the Greater Vancouver area, in many capacities in both the private and public sectors. Some grads find work in sectors which are not closely related to the EPT program. Many, like the two interviewees, are in recruiting and/or management positions.

Program Administrator and Educational Institution Administrator Interviews

1. Do you have any additional questions about the TAC accreditation process?

- Explanations were given regarding the number of years of accreditation, the requirement of an Annual Report, and the differences from the previous accreditation.

2. How will you promote the program's accreditation to prospective students and their parents?

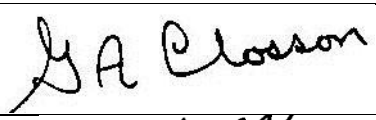
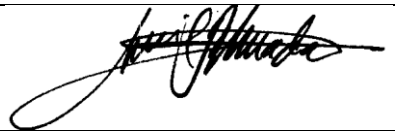
- Accreditation would be useful for recruitment of students and for graduates seeking employment.
- Accreditation might make it easier to enable graduates to ladder into a new BSc in Environmental Geography that is being considered at KPU.

3. How will you promote the program's accreditation to employers?

- Graduates would be from an accredited program that had been reviewed by an external Audit Team and accredited based on meeting or exceeding industry standards.
- ASTTBC would be able to accept graduates as4 certified members as AScTs after two years work experience.

Auditor Declaration

As a member of the Audit Team for the **Environmental Protection Technology** accreditation for **Kwantlen Polytechnic University** I have reviewed this Accreditation Audit Report TACNAC 025 in detail and agree that it accurately reflects my evaluation of the program with respect to the TAC National Accreditation Criteria.

Lead Auditor's Name and Signature:	Gary Closson, CET, PEng		Date: October 26, 2016
Auditor's Name and Signature:	Ariel Estrada, AScT, PEng		Date: October 27, 2016
Auditor's Name and Signature:	Geoff Sale, AScT		Date: October 26, 2016

Program Review Quality Assurance Plan

Quality Assurance Plan for: Environmental Protection

Date submitted to SSCPR: April 2016

Date Self-Study Report approved by SSCPR: January 2017

Date of External Review: Oct 20/2016

SUMMARY

Summarize what the program has determined - through evidence - about program quality (e.g. strengths, challenges, opportunities for improvement, potential threats, etc.)

The EPT program is unique in BC. It delivers a mix of general education, including a thorough grounding in science basics, and hands-on skills designed to produce graduates ready for the needs of the environmental employment sector.

Among the challenges are the difficulty of getting the word out and becoming well known in the community (this includes challenges for recruiting students as well as contract faculty with industry experience); integrating the delivery of fundamental science with practical skills; reducing attrition without sacrificing on learning outcomes. Addressing these challenges provide opportunities to improve the program.

One key threat to the program would be losing its accreditation status. Accordingly, some of the recommendations are made with an eye to strengthen the match between the program learning outcomes and those of the accreditation agency against which the program is evaluated.

QUALITY ASSURANCE GOALS

List the program's Quality Assurance Goals (broad statements about what the program intends to accomplish to ensure program quality). Identify the Recommendation(s) – drawn from the Self-Study Report and External Review Report - each Goal addresses. Provide a brief Rationale for each Goal (see the Quality Assurance Plan Guidelines for instructions). Add or remove rows as necessary.

GOAL 1: A new course where project management, ethics, and professional concerns specific to the environmental industry can be addressed, in parallel to the current co-op course.

RATIONALE FOR THIS GOAL: a) Providing such learning outcomes is expected of all technology program; b) this creates a forum to create a sense of identity and belonging for the EPT students

Recommendation(s) this Goal Addresses	**Report (page number)**
Incorporate project management topics into curriculum	20, 26
Explore ways to foster a sense of identity and integrate experiential learning from co-op	20

GOAL 2: modify curriculum in two key service courses (Ecology and Physics)

RATIONALE FOR THIS GOAL: a) Create a better match with accreditation outcomes; b) address student attrition by reducing non-essential content

Recommendation(s) this Goal Addresses	**Report (page number)**
Repatriate key courses	20, 27

GOAL 3: Create block registration for incoming first year students

RATIONALE FOR THIS GOAL: improve sense of identity by creating a true cohort; ensure that students select appropriate sections (for schedule management as well as appropriate course focus)

Recommendation(s) this Goal Addresses	**Report (page number)**
Create block registration	20

GOAL 4: Improve communication within KPU

RATIONALE FOR THIS GOAL: a) Improve understanding by all instructors of the general learning outcomes of the program; b) create research opportunities for all instructors; c) identify opportunities for partnering with other programs and create new avenues for students wishing to pursue a degree

Recommendation(s) this Goal Addresses	**Report (page number)**
Invite instructors to advisory committee meetings	Pg 20
Liaise with programs such as Geography, Urban Ecosystems, Policy Studies, Sustainable Agriculture	Pg 20

GOAL 5: Improve communication with the outside community

RATIONALE FOR THIS GOAL: a) Improve student recruitment; b) raise profile in the community, especially to identify possible community research partners and other opportunities for experiential learning; c) increase awareness of our program among sister institutions; d) facilitate student mobility between institutions

Recommendation(s) this Goal Addresses	**Report (page number)**
Continue community outreach and increase social media presence	Pg 20
Submit appropriate courses for transfer credits	Pg 20

RECOMMENDATIONS THE QUALITY ASSURANCE PLAN DOES NOT ADDRESS

List the Recommendations from the Self-Study and External Review this Plan does not address. Provide a brief explanation why these Recommendations cannot be addressed. Add or remove rows as necessary.

Recommendations	***Report (page number)***	***Explanation***
Goal 3 (block registration)	Pg 20	While we will try to get this implemented, the control of this does not reside within FSH; we will simply ask the Registrar's Office to consider our initiative

QUALITY ASSURANCE FIVE-YEAR ACTION PLAN

Describe the program's Quality Assurance Objectives (specific and demonstrable milestones the program must achieve to attain its Goals). Detail the actions the program will take to achieve each Objective.

List the objectives the program expects to achieve in Year One following the submission of the Quality Assurance Plan. Add or remove rows or tables as needed.

OBJECTIVE: Creation of a course about the Environmental Industry

GOAL(S) THIS OBJECTIVE SUPPORTS: GOAL 1 entails the creation of a new course where project management, ethics, and professional concerns specific to the environmental industry can be addressed, in parallel to the current co-op course.

RATIONALE FOR THIS OBJECTIVE: a) Providing such learning outcomes is expected of all technology program; b) this creates a forum to create a sense of identity and belonging for the EPT students

Action(s) Required to Achieve this Objective	To be Led by	To Begin on (M/YY)	To be Completed By (M/YY)	Notes
Submit a course outline, program change, and develop course material	Chair	Feb 17	May 18	
Request funding for course, identify or hire contract instructor (NR1)	Dean	Sept 17	ongoing	
Launch course	Dean	Sept 18	ongoing	

OBJECTIVE: modify curriculum in Physics, Ecology courses

GOAL(S) THIS OBJECTIVE SUPPORTS: GOAL 2, which was originally stated as the "patriation" of two key service courses (Ecology and Physics) into ENVI courses so as to be able to modify their learning objectives and approaches. This has been modified to rather work with faculty and staff from both department to achieve the required outcomes without changing the course numbers or the structure of the program.

RATIONALE FOR THIS GOAL: There were two main reasons for this goal: create a better match with accreditation outcomes, and reduce student attrition by reducing content considered of low importance for accreditation. The proposed strategy is different from the stated goal in the self-study report. It was determined that an easier path may be to modify existing courses rather than create new ones. This effectiveness of this strategy is to be re-assessed after two years.

Action(s) Required to Achieve this Objective	To be Led by	To Begin on (M/YY)	To be Completed By (M/YY)	Notes
Initiate consultations with Physics and Biology chairs and instructors	Dean & Chair	Jan 17	May 17	Completed, but discussions on-going
Launch modified courses	Biology and Physics	Sep 17	Dec 18	

OBJECTIVE: Community liaison

GOAL(S) THIS OBJECTIVE SUPPORTS: GOAL 5, Improve communication with the outside community (including sister institutions)

RATIONALE FOR THIS OBJECTIVE: a) Improve student recruitment; b) raise profile in the community, especially to identify possible community research partners and other opportunities for experiential learning; c) increase awareness of our program among sister institutions; d) facilitate student mobility between institutions

Action(s) Required to Achieve this Goal/Objective	To be Led by	To Begin on (M/YY)	To be Completed By (M/YY)	Notes
Launch an advertising campaign on social media, develop video material for website in consultation with FSO and Marketing	Communication specialist	April 17		ongoing
Increase awareness of program in environmental industry through industry-led student project partnerships	Chair & co-op coordinator	Sept 18		Guest speakers in new course; press releases for specialized outlets
Submit courses for transfer credit evaluation	Chair	Sept 18	Sept 21	Current course outlines to be updated first

OBJECTIVE: Invite instructors to advisory committee meeting, other meetings

Improve communication within KPU

GOAL(S) THIS OBJECTIVE SUPPORTS: Goal 4, which is to improve EPT-relevant communication within KPU

RATIONALE FOR THIS OBJECTIVE: It is desirable to improve all instructors' understanding of the general learning outcomes of the program; this may also create opportunities for research partnership for all instructors and foster synergy of complementary expertise and interests.

Action(s) Required to Achieve this Goal/Objective	To be Led by	To Begin on (M/YY)	To be Completed By (M/YY)	Notes
Identify suitable time for an initial special meeting at upcoming advisory committee meeting	Chair	April 17	Sept 17	
Schedule larger advisory/instructors meeting	Chair	Oct 17	ongoing	May require postponing to May 2018 (instructors time conflicts may be more easily avoided)
Create an appropriate forum for annual meetings	Chair, Co-op	Sept 19	ongoing	Could be equivalent of career day

YEARS THREE TO FIVE: Sept 19 to Sept 22

List the objectives the program expects to achieve in Years Three to Five following the submission of the Quality Assurance Plan. Add or remove rows or tables as needed.

OBJECTIVE: patriate service courses in Biology and Physics – if necessary

GOAL(S) THIS OBJECTIVE SUPPORTS: Goal 2, which is to modify curriculum in two key service courses (Ecology and Physics)

RATIONALE FOR THIS OBJECTIVE: It remains possible that the course contents and learning objectives of these two service courses, BIOL 2322 and PHYS 1140, cannot be modified suitably to address the program's needs (there may be limited flexibility, especially in the case of BIOL 2322 which already has transfer status to other institutions). The overall rationale for the requested changes is to create a better match with required accreditation outcomes, while also addressing student attrition by reducing content and outcomes not considered essential.

Action(s) Required to Achieve this Goal/Objective	To be Led by	To Begin on (M/YY)	To be Completed By (M/YY)	Notes
Submit new course outlines (and program change), if necessary after a two-year pilot	Chair	Sept 2019	Feb 2020	To be performed only if strategy of modifying current courses ineffective
Create course material	Chair	Sept 2019	Sept 2020	‘’
Identify instructors as appropriate	Dean	Mar 2020	Sept 2020	‘’

KWANTLEN POLYTECHNIC UNIVERSITY

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April 26, 2017

Senate Standing Committee on Program Review

Institutional Response: Environmental Protection Technology (EPT) Diploma

I would like to extent congratulations to Dr. Paul Richard (EPT Department Chair) for singlehandedly compiling a comprehensive and honest review of a long-standing, successful program which has not been previously internally reviewed. I would like to point out that this review was the first in KPU to coincide with the submission of an extensive report to the external accreditation body, Technology Accreditation Canada (TAC) and I commend Dr. Richard on being the guinea-pig in participating in this internal/external joint review. The external review culminated in the EPT program being the first program in British Columbia to receive TAC Accreditation.

Dr. Richard outlines five (5) Quality Assurance Goals, based on recommendations outlined in the Self-Study and found in the TAC Accreditation Audit Report. In consultation with Dr. Salvador Ferreras, Provost and Vice-President Academic, I approved of the goals and steps outlined to achieve said goals. This program epitomizes both Vision 2018 and the Academic Plan 2018 and the successful achievement of these goals will ensure that the program evolves to continue to fit the needs of students and the industry.

Goal 1: Incorporate project management topics into the curriculum. This is a very important goal and one that also has been suggested by the members of the EPT Advisory Council. The plan to develop and launch a new course in September 2018 is very doable and is already is underway. I support this goal and will seek funds from the Provost to hire an external industry expert to teach this course (NR1), not unlike what is presently being done with a few of the other highly industry-specific ENVI courses.

Goal 2: Modify curriculum in Ecology and Physics service courses. Again, this recommendation also came from the EPT Advisory Council. This recommendation reflects what is desirable in job-ready EPT graduates and will be required to maintain future TAC accreditation. Dr. Richard and I have already met with the key instructors of the two courses and come to an amiable agreement to pilot substantive changes in primarily the laboratory component of both courses to reflect the learning outcomes needs. This was a very positive experience with the instructors in each case excited to incorporate more relevant content in their existing courses. These changes will be implemented for September 2017 and will run as pilot for two years, then reassessed and a decision will be made as to whether or not new stand-alone courses should be developed or to retain the current EPT-focussed courses.

Goal 3: Block registration for incoming students. This goal seeks to identify a process whereby a true cohort nature of the program be introduced. Presently, students have several options for service courses and more often than not do not register in courses in a lock-step fashion. This results in some students falling out of sync with classmates and having to wait an

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extra year to get key courses. We would like to work with the Registrar Office to find a mechanism that once a student is admitted into the EPT program they are automatically registered in all the courses in Year 1 and then Year 2. Although not identified as a major goal it is one that I support and hope to see implemented in the near future.

Goal 4: Improve internal communication and liaisons. A good proportion of courses making up the EPT Diploma are taught by instructors from other FSH Departments (Biology, Chemistry, Physics, Mathematics) and Faculties (Arts, Business) thus removing any control EPT has over who is chosen to teach EPT students. This can, and periodically has, resulted in non-ideal selections of instructors. Regardless, this goal highlights the need for the EPT Chair to, on a yearly basis, facilitate the interactions of all instructors teaching EPT courses by meeting to share curricular ideas, pedagogies, research interests and expertise. We suggest that this also extends to inviting faculty from related disciplines such as Horticulture, Brewing, Design, and Sustainable Agriculture to join in what could be an annual forum. I strongly support any and all forms of collaboration and encourage Dr. Richard to initiate the planning for an inaugural gathering to take place no later than Spring 2018. As Dean, I would be happy to dedicate funds for refreshments for a yearly event.

Goal 5: Improve external communications and liaisons. This goal is multifaceted and covers recruitment, community awareness and experiential learning opportunities. Although the EPT Program is well respected both internally and externally there is always room for improvement. Dr. Richard has already met with FSH Communications and Events Specialist Triona King to devise a marketing and recruitment strategy. Dr. Richard plans to involve more guest speakers in key courses and seek out more industry partners for student research projects and co-op placements. Inviting instructors to meet with the EPT Advisory Council is a quick win and will be actioned for the Fall 2017 Advisory Council meeting. Until the proposed B.Sc. in Environmental Geography degree is launched we need to ensure EPT graduates can bridge into advanced programs offered by other institutions. To enable this Dr. Richard will systematically update all relevant ENVI courses and submit to BCCAT for transfer credit evaluation. I support all of these initiatives and will provide resources on an ‘as-needed’ basis.

In summary, in consultation with Provost Dr. Sal Ferreras, I am fully supportive of the goals and timelines outlined by Dr. Richard and pleased to see that many are already well on their way to fruition. In addition, I congratulate Dr. Richard for an exemplary program review and look forward to seeing the above goals implemented.

Respectfully yours,

Elizabeth Worobec

Elizabeth (Betty) Worobec, Ph.D.
Dean, Faculty of Science and Horticulture

Program Review Year Two Follow-Up

Two-Year Follow-Up Report for: Environmental Protection Technology

Date Self-Study Report approved by SSCPR: 2016

Date External Review approved by SSCPR: 2016

Date Quality Assurance Plan approved by SSCPR: 2016

Progress Report on Quality Assurance Plan

YEAR TWO: This is a continuation of initiatives outlined in the 2016 QA plan. Eight recommendations were made (see Table 1 of the QA report; these recommendations are reproduced in the objectives below.

OBJECTIVE: Incorporate project management topics into the curriculum

GOAL(S) FROM THE QA PLAN THIS OBJECTIVE SUPPORTS: Incorporate project management topics into the curriculum

RATIONALE FOR THIS OBJECTIVE: recommendations from advisory committee

Action(s) Required to Achieve this Goal/Objective	To be Led by	To Begin on (M/YY)	To be Completed By (M/YY)	Progress to Date/Reasons for Lack of Progress
Use class project in ENVI 2310 to include project management basics	Paul Richard	Sept 17		Ongoing
Incorporate time management topics into individual research project ENVI 2902	Chris Hauta	Jan 18		Ongoing

OBJECTIVE: Seek bloc registration to foster sense of identity

GOAL(S) FROM THE QA PLAN THIS OBJECTIVE SUPPORTS: *Click here to enter text.* Seek bloc registration to foster sense of identity

RATIONALE FOR THIS OBJECTIVE: improve student retention

Action(s) Required to Achieve this Goal/Objective	To be Led by	To Begin on (M/YY)	To be Completed By (M/YY)	Progress to Date/Reasons for Lack of Progress
Ask registrar's office whether such a plan is possible	Paul Richard	Jan 17		Done
Implement plan				Not done; not part of Oreg procedures

OBJECTIVE: Incorporate applied topics in some key service courses*Click here to enter text.*

GOAL(S) FROM THE QA PLAN THIS OBJECTIVE SUPPORTS: Repatriate key courses to modify curriculum

RATIONALE FOR THIS OBJECTIVE: recommendations from advisory committee

Action(s) Required to Achieve this Goal/Objective	To be Led by	To Begin on (M/YY)	To be Completed By (M/YY)	Progress to Date/Reasons for Lack of Progress
Instead of repatriation, ask BIOL 2322 to incorporate applied field research	Paul Richard	Sept 18	Dec 18	Done successfully; ongoing in future years
Instead of repatriation, ask PHYS 1400 to incorporate applied fluid mechanics concepts	Paul Richard	Sept 18	Dec 18	First changes implemented; ongoing

OBJECTIVE: Improve communications between instructors and advisory committee

GOAL(S) FROM THE QA PLAN THIS OBJECTIVE SUPPORTS: Invite instructors to advisory committee

RATIONALE FOR THIS OBJECTIVE: recommendations from advisory committee and QA findings

Action(s) Required to Achieve this Goal/Objective	To be Led by	To Begin on (M/YY)	To be Completed By (M/YY)	Progress to Date/Reasons for Lack of Progress
Invite instructors to advisory committee meeting	Paul Richard	Spring 19	Spring 19	Scheduling issues have prevented this so far

OBJECTIVE: Create sense of identity

GOAL(S) FROM THE QA PLAN THIS OBJECTIVE SUPPORTS: Use co-op program to create sense of identity and report to wider workplace

RATIONALE FOR THIS OBJECTIVE: recommendations from QA report; help with student retention

Action(s) Required to Achieve this Goal/Objective	To be Led by	To Begin on (M/YY)	To be Completed By (M/YY)	Progress to Date/Reasons for Lack of Progress
Create opportunities for first and second year students to meet and discuss activities etc	Melissa Drury	Sept 17		Started; ongoing
Create opportunities for first and second year students to meet and discuss workterm experience etc	Melissa Drury	Sept 17		Started; ongoing

OBJECTIVE: Improve communications between EPT and other programs

GOAL(S) FROM THE QA PLAN THIS OBJECTIVE SUPPORTS: Liaise with other programs such as Geography, Sust Ag, Policy studies

RATIONALE FOR THIS OBJECTIVE: recommendations from QA findings; create opportunities for students

Action(s) Required to Achieve this Goal/Objective	To be Led by	To Begin on (M/YY)	To be Completed By (M/YY)	Progress to Date/Reasons for Lack of Progress
Work with POST faculty to ensure that students develop a good understanding of non-science aspects of sustainability	Paul Richard	Sept 17	ongoing	done
Work with POST faculty to ensure that students know that POST is a possible avenue to degree	Paul Richard	Sept 17	ongoing	Done (class visits by Post chair)
Work with geography faculty to promote creation of BASc in environmental geography	Paul Richard	Sept 17	ongoing	Ongoing; no clear completion date

OBJECTIVE: Submit ENVI 1121 for transfer credits

GOAL(S) FROM THE QA PLAN THIS OBJECTIVE SUPPORTS: Improve transferability of ENVI courses

RATIONALE FOR THIS OBJECTIVE: make ENVI 1121 a more attractive and recognised elective course (including for high school students)

Action(s) Required to Achieve this Goal/Objective	To be Led by	To Begin on (M/YY)	To be Completed By (M/YY)	Progress to Date/Reasons for Lack of Progress
Submit course for transfer credits	Paul Richard	Jan 17	Jan 18	Done; ENVI 1121 has received transfer credit from some institutions

OBJECTIVE: Improve community outreach

GOAL(S) FROM THE QA PLAN THIS OBJECTIVE SUPPORTS: Continue community outreach and social media presence

RATIONALE FOR THIS OBJECTIVE: program relevance and community awareness; marketing

Action(s) Required to Achieve this Goal/Objective	To be Led by	To Begin on (M/YY)	To be Completed By (M/YY)	Progress to Date/Reasons for Lack of Progress
Reach out to community groups and offer to partner on research projects	Chris Hauta	Jan 17	ongoing	Some progess made; eg, LEPS partner for some student capstone projects
Create short videoclips for social media (via our marketing group)	Paul Richard	Jan 18	Dec 18	Strategy developed, EPT students (to be interviewed) identified; ongoing

YEARS THREE TO FIVE: Click here to enter text.

OBJECTIVE: Click here to enter text.

GOAL(S) FROM THE QA PLAN THIS OBJECTIVE SUPPORTS: Click here to enter text.

RATIONALE FOR THIS OBJECTIVE: Click here to enter text.

Action(s) Required to Achieve this Goal/Objective	To be Led by	To Begin on (M/YY)	To be Completed By (M/YY)	Progress to Date/Reasons for Lack of Progress