



VANCOUVER ISLAND
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PROGRAM REVIEW

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FORESTRY DEPARTMENT

FACULTY OF SCIENCE AND TECHNOLOGY

EXTERNAL REVIEW PANEL REPORT

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FORESTRY EXTERNAL REVIEW PANEL REPORT

INTRODUCTION

This report presents the findings of an external review of the Forestry Department at Vancouver Island University (VIU). It is based on our interpretation of two documents provided in advance of our site visit¹, discussions and interviews that occurred during the site visit, the 2012 Summative Program Assessment of the Forest Resources Technology Diploma Program, and the Academic Plan for VIU.

The Forestry Department is one of several departments in the Faculty of Science and Technology, located on the Nanaimo campus of VIU. The Department teaches most of the courses that comprise the two-year Forest Resources Technology Diploma (FRTD) program. In addition, the Department offers a service course to students in the Resource Management Officer Technology (RMOT) diploma program, teaches a few students each year who are enrolled in a bridging program for eventual transfer to a degree program², and teaches several students from other VIU programs who elect to take a few of the courses included in the FRTD program. The Department is also responsible for managing the VIU Forest (a.k.a. VIU Woodlot) and a treated sewage spraying program that takes place on the woodlot (the Forest Fertilization (Biosolids) Project). The Department is comprised of 4 FTE instructors and a 0.5 FTE technician, 1 FTE for managing the VIU Woodlot and 0.5 FTE for managing the Biosolids Project.

Our site visit took place on November 8 and November 9, 2012. We began with an orientation session with Brandon Nelson from the Office of University Planning and Analysis. We then met with Vice President Academic, David Witty, followed by the Dean of Science and Technology, Greg Crawford. The morning of November 8 concluded with a tour of the Forestry Department facilities led by Marise Wickman. We then had lunch with Marise and Doug Corrin from the Forestry Department and had an open discussion with them regarding the Department and the FRTD program. After lunch, we met separately with several students from the first year and the second year of the FRTD program. Two 2012 spring graduates of the FRTD program, currently taking a bridging year, were also present at our meeting with the second year students. The second day started with a meeting with all the Forestry Department faculty members. This was followed by a meeting with two representatives of the Advisory Board for the FRTD program, Nancy Paluzi and Brooks Yancy. Following a working luncheon session, we met with professor of Biology David Gaumont-Guay, Chair of Geography Alan Gilchrist, and professor Resource Management Officer Technology John Morgan. The day concluded with a meeting with Liesel Knaack of the Teaching and Learning group at VIU.

¹ Program Data Analysis Report. Program Review 2011-2012. Forestry Department, Faculty of Science and Technology.

Departmental Self Study. Program Review 2011-2012. Forestry Department, Faculty of Science and Technology. September 2012.

² These students take some of the same courses offered to students in the FRTD program.

We wish to thank all of the individuals who met with us and shared their perceptions of the Forestry Department and the FRTD program. We appreciated their insight and candor – many of the suggestions contained in this report arose from these discussions. We also appreciated the efforts made by the Office of University Planning and Analysis to develop the schedule for our visit and to ensure that we were well looked after.

In the remainder of this report, we summarize the Forestry Department strengths, identify some challenges we perceive that the Department is facing, and finally offer suggestions for the Department to consider.

FORESTRY DEPARTMENT STRENGTHS

The Forestry Department is comprised of a group of experienced and dedicated instructors. These individuals bring considerable practical experience to the classroom. The program data analysis report indicated that the great majority of students who responded to the survey appreciated the instruction that they received. This was certainly supported by the students with whom we spoke – they indicated that they found their instructors to be both approachable and knowledgeable. The Department has embraced the new VIU on-line learning platform (Desire2Learn) in support of all of their teaching. Furthermore, the forestry instructors have been working closely with Liesel Knaack of the VIU Teaching and Learning group for the last several months and are in the process of applying new teaching/learning approaches in some of their classes. They have also reworked their individual course syllabi to reflect learning objectives tied to Bloom’s taxonomy³ and have explicitly identified the contribution each of the courses in the FRTD program make to achieving broader learning objectives specified by the BC Ministry of Higher Education. Both the Vice President Academic and the Dean of Science and Technology indicated to us that they appreciated the willingness of the forestry instructors to recast their course syllabi and embrace new teaching/learning approaches. They hoped that the Forestry Department’s initiatives in this area would encourage other departments at VIU to follow suit.

Current and former FRTD students generally appear to be quite happy overall with their educational experience. They very much appreciate the “hands on” nature of the program and the fact that it prepares them well for future careers. They also appreciate the fact that employment opportunities are excellent, at least at present, for both summer jobs and post-graduation positions. Feedback from employers indicates that FRTD students and graduates are considered “field ready”. If they do not know specific procedures, they learn them quickly and appear to have a solid basic understanding upon which to build.

The VIU Woodlot was cited by the students, forestry instructors, and administrators of related departments as a tremendous asset. The Woodlot provides students with a field laboratory, relatively close to VIU’s Nanaimo campus, on which to develop the practical skills necessary for technical forestry applications. It also serves as a site for a number of research and demonstration

³ This is a well-established classification system (hierarchy) for learning objectives that dates back to the mid-1950s.

projects. Of note is the ongoing biosolids project taking place on the Woodlot in conjunction with the city of Nanaimo. Finally, proceeds from the harvesting operations on the woodlot contribute to VIU's general funding, which positively impacts the University's entire academic enterprise.

The Forestry Department should be recognized for providing and promoting several post-diploma academic pathways for students. They established a route (the bridging program) into the third year of the Bachelor of Science in Forestry (BSF) degree program at the University of British Columbia several years ago that a few former FRTD students follow each year. More recently, routes into the Bachelor of Natural Resource Protection degree offered by the RMOT Department at VIU and the Geographic Information System (GIS) diploma offered by the Geography Department at VIU have been established. Several of the students with whom we met indicated that they intend to seek further education via one of these routes.

The Forestry Department has good relationships with the coastal forest industry, which hires many of their students for summer work and many of their graduates in more permanent jobs. One of the mechanisms for maintaining these relationships is the Forestry Department Advisory Committee. This committee generally meets at least once per year. The Department has made a good effort to keep this committee informed of changes to both the curriculum and personnel, and listens and responds to comments and suggestions from the committee.

Finally, the Department should be commended for enabling many of their students to gain exposure to national and international forestry issues. They do this by organizing trips outside of the province and outside the country most years, and hosting visits by students and instructors from international partner institutions. The Department has been proactive in leveraging outside funding to partially support these initiatives, considerably reducing the costs to their students for participating.

CHALLENGES

In order to provide some structure to the following discussion, we chose to group the challenges under three headings: (1) resource issues; (2) academic issues; and (3) other issues.

Resource Issues

The major challenges facing the Forestry Department are related to resource limitations. This extends from limited physical space for holding classes to budgetary limitations that affect the number of instructor FTEs in the department and make the procurement of higher-priced field equipment and software difficult. We understand that resource limitations create challenges across VIU (and indeed at many post-secondary institutions) -- they are certainly not unique to the Forestry Department.

Forestry Department instructors teach the first and second year student cohorts in the FRTD program in two principal classrooms on the Nanaimo campus (one classroom for each year), at the VIU Woodlot, and in other outdoor locations as necessitated by the subject area being covered. The classrooms are limited in size – we were told that the classrooms seat approximately 25 students

comfortably, but that adjustments can be made to accommodate up to 30 students. We were also told that teaching space is limited across the entire Nanaimo campus and that finding a larger classroom, even for single courses let alone an entire program year, is not likely possible. This limits both the size of the targeted yearly intake, as well as the number of non-forestry students who can register in any of the forestry courses.

One consequence of the Forestry Department working within a limited budget is that they have a relatively small number of FTE instructors to teach the courses for which the Department is responsible, to manage the Woodlot, and to coordinate the biosolids project. The latter two activities extend year-round and consequently can present staffing difficulties, particularly over the summer months, the normal time for instructor holidays. Staff allocation to these responsibilities needs to be handled carefully to avoid possible workload inequalities and mitigate the possibility of instructor burnout.

Other challenges related to budget limitations are procuring higher-priced field equipment and software and supplying transport to field activities. The issue of procuring higher-priced field equipment is generally addressed by obtaining one or two “demonstration” instruments and covering the principles underlying the instruments in lectures. A somewhat similar approach is taken with expensive software products; the underlying principles are taught in the lectures and exercises to reinforce understanding of the principles are completed by hand or using less-expensive (usually older) versions of the software. Arranging transport to field sites can be an issue, although the VIU Woodlot, where many of the field exercises are held, is not far from the Nanaimo campus. There is one older bus available on the Nanaimo campus that is allowed to be used to travel off-pavement. However, this bus is old, which can occasionally present maintenance problems. Also, there can be occasional scheduling conflicts, so the bus is not always available with limited notice. If the bus is taken, the instructor is expected to drive the bus, which includes the tasks of preparing it and loading it with equipment and students. This increases instructor workload and detracts from the time they have available to instruct in the field.

Student Issues

Students, both through their responses to the survey and in our interviews with them, expressed several concerns. While these concerns were minor relative to the many positive things the students had to say about their instructors and their program, the sources of these concerns need to be understood by the Forestry Department and, where appropriate, addressed. These concerns included hidden and/or unnecessary costs, perceptions of heavy workload, issues regarding transportation to field exercises, and concerns over their ability/confidence in writing.

Some students claimed that they were not aware of all of the costs, on top of tuition, associated with the FRTD program. However, we were provided with a copy of the acceptance letter sent to incoming students and, in fact, most of the additional costs are specified (books and equipment with a cost of \$1400 and first aid and transportation certificates with a cost of approximately \$150). The only cost mentioned by the students that was not covered in the acceptance letter was a deposit (\$300) required to borrow field equipment. We expect that the deposit was not mentioned in the letter since the deposit is refundable once the borrowed equipment is returned intact. A few

of the students mentioned the indirect costs of their field schools that are offered outside of the formal academic term (i.e., the field schools reduced the length of their summer employment). These students thought that some of the field school content was redundant and unnecessary and that the field schools could be shortened.

Many of the students regarded textbooks, especially if readings from the textbooks were not specifically required for a course and the material covered in the readings considered to be examinable, to be an unnecessary expense. Instructors did not usually share this perception and generally believed that the textbooks that they require for their courses to be necessary or at least extremely helpful to the students.

Students, especially those responding to the survey, indicated that the workload in the FRTD program was too heavy. The Forestry Department reduced the course load for students in the first year of the program a few years ago. The second year students recognized that their workload was indeed heavier in second year than it was when they were in first year. They indicated that they thought that the first year workload was appropriate; however, the second year load was “barely manageable”. They also expressed concern over how they could catch up if they missed a few days in a row due to illness. Students report waves of assignments/tests are causing some of the workload strain. This is a result of the natural pattern of instructors giving assignments and setting due dates driven by term schedules, exam dates and other influences, perhaps without due consideration to activities required of students in other courses. The outcome is multiple assignments due on the same date and students having to study for midterms while preparing major assignments for other courses. We recognize that some of this time crunch is unavoidable.

Coordination issues extend beyond assignment due dates to other aspects of the curriculum. Students reported some content overlap among courses. This is not necessarily a problem – some overlap is beneficial and can be reinforcing. Also, some students commented on the apparent inefficient use of time in certain field labs. They indicated that there was sometimes a lack of direction in these labs because there were so many students and they are so spread out. With only one instructor on site students are not able to get support in a timely fashion. Consequently some of the value of these exercises is compromised. Structurally, field lab scheduling can create a corresponding classroom lab that is too long, putting strain on students and instructors alike.

The few complaints we heard regarding transportation to field exercises, primarily travel to the Woodlot, regarded the expectation that students use personal vehicles. We are not certain if this is a major issue, but we believe it ought to be explicitly addressed by the Department at the beginning of each academic year.

It appeared to us that the credits assigned to some forestry courses were low relative to the contact hours involved. Since students pay tuition by the credit, this means student tuition is lower than it otherwise would be (which is good for the students but perhaps not so good for VIU) and potentially masks the actual student workload to outside observers who look initially at the number of credits offered per term.

Students and former students who responded to the survey indicated that they were not confident in their writing abilities. This lack of confidence exists despite two courses provided by the English department and one communications/research course offered by the Forestry Department, which we understand is relatively new. The second year students we spoke to indicated that they thought that one of the English courses (English 204 – Business & Technical Writing) could be dropped from the curriculum and the forestry communications/research course expanded to increase the emphasis on discipline-specific communication skills.

Other Issues

The FRTD students are required to purchase and use appropriate safety gear, obtain at least basic first aid training, and work in groups when in the field. These are all positive steps towards promoting a culture of safety. However, there are some safety issues pertaining to field exercises that ought to be addressed more comprehensively, including the fact that often only a single instructor is present with the students on field exercises, and this individual often needs to travel through the forest on his/her own among student crews and also is at risk of being injured.

Not surprisingly, students responding to the survey and in discussion with us identified much more strongly with the Forestry Department than they did to the University and, in fact, appeared to interact only minimally with the rest of VIU. This is not surprising given the relatively heavy class load and the cohort nature of the FRTD program. There also appeared to be little interaction between the students in the first and second years of the FRTD program. We believe that there are many potential benefits to FRTD students from interacting, both formally and informally, with students registered in other programs at VIU and with students in the other year of their program. However, we recognize that it may be difficult to create many opportunities for this interaction without negatively impacting on the FRTD program content or the benefits of a cohort-based teaching approach.

Although the Forestry Department Advisory Committee, as a whole, has been actively engaged with the Forestry Department, participation of representatives of the larger forest companies in the committee has been sporadic. Major coastal licensees represent a significant employer group for students from the FRTD program seeking summer jobs and graduates of the program seeking more permanent positions. Having representatives of this employer group participate actively on FDAC would be beneficial to the Department. Student representation at Advisory Committee meetings has been sporadic as well.

No discussion of challenges within the North American forestry education world would be complete without mentioning student recruitment challenges. The FRTD program has maintained student numbers over the past decade better than many similar programs, and general student interest in the program at present appears to be higher than it was several years ago. The Forestry Department and VIU should be congratulated on this achievement. However, attracting good, committed students into more traditional forestry programs, at both the diploma and the degree level, remains a challenge. Despite the fact that physical and financial resource limitations make expansion of the FRTD program unlikely, recruitment efforts need to be maintained, if not increased. Although we have no reason to doubt the quality of the students currently in the FRTD

program, it stands to reason that higher demand to participate in the FRTD program would allow the Department to be more selective in terms of which applicants receive offers.

SUGGESTIONS

We offer the following as suggestions to the Forestry Department. We choose to use “suggestions” rather than the stronger term “recommendations” deliberately. We are cognizant of the fact that the Department members and the VIU administration are in a better position than we are to know whether these suggestions are actually useful and implementable without impacting on Department members or students in unintended ways.

We have organized the suggestions into two groups that we have termed “academic” and “administrative”. This is purely for convenience and some suggestions could have been listed in either of the groups. We do not intend to imply any ranking of importance or priority in the order in which the suggestions are given.

Academic

- 1) Look for opportunities to integrate the first and second year cohorts within the FRTD program.

There are a number of benefits, particularly to students in the first year cohort, of enhancing the interaction between students in the first and second year cohorts of the FRTD program. These benefits are both tangible (e.g., the first year cohort learning of summer employment possibilities and having a better idea of what lies ahead for them academically) and intangible (e.g., increase the first year students’ sense of belonging to the department, increase the possibility of the students forming a forestry club within VIU). There are likely a number of different ways to achieve some integration without negatively impacting on program delivery. Possibilities include jointly running field labs for related courses in the two years and having second year students make presentations to the first year students on their summer job experiences.

- 2) Consider broadening the FRTD program content.

Some students noted that the FRTD program was focused too much on traditional forestry and could include related material dealing with other natural resources. An example would be to include more fish/wildlife/forestry interactions in the program. However, care must be taken to avoid diluting the technical forestry content too much since providing students with a good technical skill set is one of the strengths of the existing program.

- 3) Consider removing the requirement for one of the two English courses and strengthening the communication requirements offered within the FRTD program.

Communication training may be more effective if it can be discipline-specific. The students we met with stated that the content of one of their English courses (English 204) overlapped considerably with the Forestry course they take in communications and

research. One possibility for strengthening communications would be to expand the forestry communications and research course so it can be offered in both first and second year. However, such an action would increase the teaching load within the Forestry Department, which is already high, or necessitate hiring a sessional instructor, which would increase the strain on an already tight Departmental budget.

- 4) Periodically assess the textbook requirements in each Forestry course.

If a textbook is deemed to be an important component of a course, it is beneficial to ensure that students actually use the textbook(s) in that course. Unless textbooks are explicitly used by students in a course (i.e., students are required to do readings and/or assignments from the textbook and are held responsible for the content), textbooks are considered by many students to be an unnecessary expense. However, adding workload to validate textbook requirements needs to be evaluated relative to student concerns regarding overall workloads. It may be possible that other means of providing background information (e.g., packages of readings, class reference sets of texts, library reserves) may provide a lower cost alternative to standard texts.

- 5) Consider offering an option that allows the FRTD program to be spread over a longer period of time than two years.

Some students struggle under a heavy academic load. Others need to hold a part-time job for financial reasons or have parental commitments that make full-time study difficult. Introducing a formal option that allows the current two-year FRTD program to be distributed over three or even four years of study would be beneficial to such students and could increase the number of students interested in enrolling in the program. However, introducing such an option would make scheduling courses considerably more challenging. There may also be implications with respect to how the VIU administration evaluates program utilization/FTE calculations that would need to be factored into the consideration.

- 6) To the extent possible, coordinate the scheduling of assignments and midterms among courses to better harmonize student workload throughout an academic term.

The normal structure of an academic term dictates the timing of certain class activities. Also, subjecting students to some degree of time stress during their studies helps them learn to manage multiple activities more efficiently. Nevertheless, more communication among instructors regarding the timing of certain activities with their courses (e.g., mid-term examinations, major assignments) can help avoid inadvertently overloading students at key points during an academic term. It may be a worthwhile exercise to look at aspects such as number and timing of major term assignments, repetitive “practice” assignments and other assigned work to determine if they are enhancing learning or producing busy work. The Forestry Department appears to be on this track already through their engagement with the Teaching and Learning group.

- 7) Endeavor to support field labs with a technical assistant.

Given the size of the classes and complexity of assignments, the learning value of field labs would be enhanced by ensuring that student guidance is readily available. Ideally, no fewer than two knowledgeable staff should be present in the field. This has both learning implications and safety implications. This situation is exacerbated when the sole instructor is also responsible for transportation as well as other instructional related duties. While many of the suggestions in this report address how to do more with less, this may be a point where more is needed.

- 8) Evaluate the technical equipment/instruments used in the program and ensure that students are kept current with current industry standards.

There is a technical revolution occurring in forestry equipment/instruments. In this process some older items are being discarded while other items are being used differently as new technologies are integrated into technical work. Knowledge of current equipment is important for students, not only from the point of view of functional knowledge, but also as a validation of the relevance and currency of the program. Some of the newer tools are so ubiquitous that they need to be in every student's hands much like the traditional compass is in everyone's vest. Others need to be seen and demonstrated only. To illustrate, an advanced GPS is now as much a part of an individual's field gear as a compass. Where funding to purchase equipment is limited, consider renting expensive units or perhaps seeking donations from employers.

Administrative

- 1) Explicitly mention the deposit required for borrowed equipment in the letter specifying costs that is sent to new students.

The current letter provides information on direct expenses. However, no mention is made of the need for an equipment deposit. Even though the deposit is refundable provided the equipment is returned in good condition, an initial cash outlay is required of each student. We were told that the amount required (\$300) can be significant to a cash-strapped student and that knowing about the need for the deposit in advance would be helpful.

- 2) Identify potential drivers for trips to the VIU Woodlot at the beginning of each term. Consider providing some small compensation (gas money) to those drivers who carpool other classmates.

Formalizing arrangements with students for providing their own transportation to and from the Woodlot for field exercises ought to remove uncertainty (and possibly the student grumbling) about providing transportation. However, risk management may suggest reviewing insurance coverage as a condition of this arrangement. VIU buses should generally be used for field trips to more distant or industrial sites. If providing gas money from Departmental sources is not feasible, perhaps an explicit "field lab charge" that covers this cost can be included in the "extra expenses" expected from each student.

- 3) Provide a structured safety orientation at the beginning of each field exercise that is targeted to the specifics of the location, weather, and the field exercise itself. Provisions for what to do in the event that the instructor is injured should also be included in the orientation.

Safety orientations for field exercises should become routine. These orientations can often be quite brief; however, they serve to reinforce awareness of safety issues among the students. It is important that provisions are in place to check that the instructor is uninjured before the last students leave the field site on occasions when personal transportation is being used. When bus transportation is provided, it is important that there are a few students appropriately trained as backup drivers in case the instructor cannot drive the bus.

- 4) Pay attention to instructor workloads, with particular attention to work required outside of the academic terms.

Managing the VIU Woodlot and coordinating the biosolids project require attention from at least some members of the Forestry Department throughout the year. Teaching loads of departmental instructors are also generally high during the academic terms. Continuing attention needs to be given to ensuring workloads are distributed fairly and that possibilities for “instructor burnout” are minimized.

- 5) Seek more active participation by representatives of the major coastal licensees on the Forest Department Advisory Committee and ensure student representation at meetings of the committee.

Major licensees represent a significant provider of summer jobs for students and more permanent positions for graduates of the FRTD program. Their representatives should be encouraged to engage in shaping the evolution of the program. If possible, senior people from these licensees should serve on the Advisory Committee. However, a commitment to attend committee meetings and become engaged in issues discussed by the committee is more important than seniority. Perhaps alternate representatives can be designated at the same time as primary representatives so that some representation of major licensees at committee meetings is more likely to occur. Student representatives have been present at a few of the recent meetings of the Advisory Committee. This representation should be continued and students should be encouraged to play an active role at the meetings.

- 6) Maintain or enhance student recruitment efforts.

As well as continuing to recruit in more traditional markets such as Vancouver Island and the lower mainland, it could prove beneficial for the Forestry Department to develop a strategy for recruiting students internationally. Given budgetary constraints and the need to maintain domestic recruitment efforts, international recruitment will need to be somewhat opportunistic. However, there are a few things the Department can do for little direct cost. The Forestry Department already has a number of formal and informal relationships with similar institutions in Europe. Such relationships include student or faculty exchange and

other forms of partnerships. The Department could seek to extend these relationships to institutions elsewhere in the world, especially Asia. Another opportunity for establishing stronger relationships with Asia would be to arrange student field tours to the region similar to those that have often been offered to certain European countries. These relationships help to increase the visibility of a program within a region and may lead to interest among potential students. Locally, it could prove useful to strengthen relationships with North Island College and First Nations communities. There could be a market for off-campus First Nations extension programs; this activity might prove financially viable and would also raise the profile of the Forest Department within these communities.

- 7) Aim for class sizes of 24, but allow up to 28 students per year in the FRTD program.

A class size of 24 would be in alignment with the other Science and Technology programs at VIU, provide better optics in terms of student FTEs, and better fit the classroom space that is available.

- 8) Review the credits assigned to existing forestry courses relative to the contact time associated with those courses.

If the credits assigned to individual courses are reassessed relative to VIU standards we expect that the credit loading for each term in the FRTD program will go up. If nothing else is changed, this would result in an increase in FRTD student tuition, which could have a negative impact on the number of students interested in taking the program. On the other hand, it would increase the revenue flow to the university, which would provide greater support for the program, either directly or indirectly. Another approach would be to reduce the contact hours in a course to reflect the current number of credits assigned to the course. If the Forestry Department chooses to undertake a credit review, it is likely that a mixture of the two responses would be appropriate (i.e., some courses will retain their current contact hours and be assigned more credits and the credit in other courses will be left the same, but their contact hours reduced).

SUMMARY

The Forestry Department at VIU is comprised of a dedicated group of instructors who care very much about their students and who are committed to evolving the teaching/learning activities that take place within the Department. We commend the Department for offering a quality program through a period in which they continue to face significant resource limitations. We have noted in this report challenges faced by the Department and have offered a number of suggestions for their consideration. We recognize that many of the challenges are not unique to the Forestry Department nor to VIU, and do not intend for our depictions of these challenges nor our suggestions to be interpreted as criticisms. Rather, we offer these suggestions as possible ways in which the Forestry Department may adapt in order to continue to produce excellent graduates and maintain their reputation of being able to “do more with less”.