**Program and Curriculum Review Template**

*Instructions: Review all information that is stored on your program and curriculum review web page.*

[***https://department.flemingcollege.ca/pcr***](https://department.flemingcollege.ca/pcr)

*On this template, enter Key Findings only, in brief point form. This is intended to be a reflective, continuous exercise and it is not expected that there will be a written response to every single question. You will work with this document and update it annually. The primary focus on an annual basis will be on the curriculum areas and at the 5 year interval, the document will be a more comprehensive representation of further depth of analysis within each of the sections. Add links to additional information only if you will find it to be helpful in the future use of this document.*

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| Program Coordinator:  | Steve Wilkinson | Chair: | Rick Gray |
| Program Review Facilitator: | Val Bishop | Date Completed: | June 2017 |
| Program Name: | Resource Drilling Technician Program | Program Code: | RDT |
| 1.0 Industry Trends and Employment | Summary of Key Findings |
| 1.1 Industry and Sector Trends Review and discuss the following:Industry / sector changes or issues identified by the Program Advisory Committee Recent labour market data or sector reports as provided by the Fleming Library Researchers. Recent or anticipated changes in occupational standards, level of entry and credential and / or standards of accreditation Based on the above, do these changes or issues necessitate changes to your program, either immediately, or in the next few years? | Occupations in this group include Drillers and Blasters - Surface Mining, Quarrying and Construction and Water Well Drillers. Drillers operate a variety of drilling rigs and equipment to drill and monitor residential, commercial and industrial sites. They are employed by contractors and governments, or they may be self-employed. ([www.jobbank.gc.ca](http://www.jobbank.gc.ca))For **Crane operators, drillers and blasters**, over the period 2015-2024 nationally, new job openings (arising from expansion demand and replacement demand) are expected to total **6,000**, while **5,600** new job seekers (arising from school leavers, immigration and mobility) are expected to be available to fill them. (Canadian Occupational Projection System).As job openings and job seekers are projected to be at relatively similar levels over the 2015-2024 period, it is expected that the balance between labour supply and demand seen in recent years will continue over the projection period. (Canadian Occupational Projection System).According to the Labour Force Survey (2014), in Canada, 97% of workers in this group worked full-time, compared to the average of 81% for all occupations.According to the National Household Survey (2011), in Canada, women represented 2% of workers in this occupational group compared to the average of 48% for all occupations.**Water Well Drillers:**Certification in **Ontario*** 10 day Well Constructed Course
* pass the MOE Well Technician Licence exam
* complete a total of 4000 hours in the industry/class of licence
* *or*
* graduate from the Resources Drilling Technician Program
* pass the MOE Well Technician Licence exam in the Well Construction course
* complete a total of 3000 hours in the industry

Education requirements:* Completion of secondary school is usually required.
* Completion of a two- to three-year water well drilling apprenticeship program
* *or*
* Two to three years of work experience in the trade combined with college or industry courses in water well drilling is usually required to be eligible for trade certification.
* Trade certification is available, but voluntary, in New Brunswick, Saskatchewan, Alberta and British Columbia,

**Drillers and blasters - mining, quarrying and construction:** Drillers in this unit group operate mobile drilling machines to bore blast holes in open-pit mines and quarries and to bore holes for blasting and for building foundations at construction sites. Blasters in this unit group fill blast holes with explosives and detonate explosives to dislodge coal, ore and rock or to demolish structures. They are employed by mining, quarrying and construction companies and by Drilling and Blasting Contractors.In Ontario, this group includes the apprenticeable trade Surface Blasters. \* note that RDT does not teach blasting beyond a 15 hour safety course.Education Requirements:* + Completion of secondary school is usually required.
	+ On-the-job training is provided.
	+ Experience as a Heavy Equipment Operator may be required for Drillers.
	+ Experience as a Blaster Helper in surface mining and quarrying or construction may be required for blasters.
	+ Provincial blasting licence is usually required for Blasters.
	+ In Ontario:
	+ Individuals who do not hold an Ontario Certificate of Apprenticeship may be assessed for equivalency if they are able to provide proof of equivalent experience or qualifications in the trade.
	+ Grade 12 or equivalent is the minimum entry requirement to register as an apprentice.
	+ The apprenticeship program for the trade of Surface Blaster is 2,240 hours or approximately one and a half years.
	+ This is a voluntary trade under the *Ontario College of Trades and Apprenticeship Act, 2009*.
	+ Apprentices must be members of the Ontario College of Trades' Apprentices Class in order to apprentice in this trade.
	+ Individuals do not require a Certificate of Qualification and are not required to be members of the College to work legally in this trade. However, individuals may choose to obtain their Certificate of Qualification and maintain membership in the College's Journeypersons Class.

 PAC Summary:* Program must maintain the high safety standards and continually adapt to regulation,technology and industry needs in the program.
* All drilling industries are extremely busy. The following day was the Frost job fair which was attended by 18 drill companies from all industries.
* Infrastructure in North America is extremely busy so the spin off is all the drilling industries are busy providing services.
* Marketing required to get students in the program as companies are struggling to fill personnel positions. More school marketing in canada and the USA.
* Common theme is the industry is happy with the graduates.
* Co-op is a great idea but can it be longer?

(February 8, 2017 PAC minutes)It is felt at this time that the program is meeting and in some cases exceeding industry expectations. There are no immediate concerns that come to light in looking at this data. There is however an opportunity to build a closer link with the Mining Industry’s Human Resources Council and to explore becoming a training centre for: * Common Core Surface Driller
* Common Core Surface Miner
* Foundation Driller

(Wilkinson, 2017) |
| 1.2 Labour Market and Employment TrendsReview and discuss the following:Graduate employment statistics over the last few years, including those of students employed in the field, in a related field, outside the field, or unemployed, and any emerging patterns in this data. Emergent employment trends such as new types of positions, changing job market, regional distinctions, changing employer profile, or emerging skill shortages | Overall employment rate:2014 - 88% ; 2015 - 91% ; 2016 - 81% ; 2017 - 88% which translates to an overall average of 87% employment rate. The College’s overall employment rate average is 84% so RDT is in line with the College average (KPI data).Related employment rate:2014 - 71% ; 2015 - 68% ; 2016 - 67% ; 2017 - 56% which translates to an overall average of 66% related employment rate. The College’s overall related employment rate average is 55% (KPI data). Wilkinson (2017) commented that graduates are likely interpreting the word “related” in a variety of ways and feels that this may be contributing to the lower averages recorded for related employment. PAC members identified need for more new grads with basic skills.* Foundational training required (training that cannot be completed on the rig and Fleming does a great job at.)
* we need more students to train because they are in demand by industry

(February 8, 2017 PAC minutes)Construction demand in southern Ontario. Growing demand for drillers in high north and the north as not able to meet 25% local hire targets so are searching further afield (February 8, 2017 PAC minutes).Faculty also commented that they are anecdotally observing a rising retirement rate in the industry (Faculty program review meeting March 7, 2017). |
| 2.0 Key Performance Indicators Review and analyze the formal Key Performance Indicator (KPI) results for your program. | Summary of Key Findings |
| 2.1 Student SatisfactionIn addition to the formal Student Satisfaction KPI results, comment upon any other formal or informal discussions with students and graduates such as *student focus groups*, class councils, class representatives, individuals or delegations, or debriefing sessions following a field placement, clinical placement, or practical work integrated learning experience.  | Student Satisfaction with their Learning Experiences are consistently on par with System results at 90.8% in 2017 (KPI data)Student Satisfaction with Teachers are consistently on par with System results at 86.1% in 2017. Noteworthy is the leap in this statistic from 77% in 2016. (KPI data)The RDT class was surveyed in the Winter semester of 2017. Overall comments are very positive particularly related to the faculty’s depth of knowledge, willingness to share that knowledge, and the access students are given to industry experts. As well students noted that D2L worked well to keep them up to date on their progress although it was noted that not all faculty get marks into D2L within the allotted two week time period. Students also liked the lecture/lab sequence of theory/application and the use of online videos to see ‘how stuff works’.  |
| 2.2 Retention RatePlease review the retention rates for Fleming College students within each program for Fall intakes 2008 to 2012. The report illustrates the retention of students within Fleming College (i.e. those students who transfer out of their current program, but who remain in the college and progress to the next semester level). The information in this report is based on students enrolled at the 10th day of classes for each semester.Review patterns of retention on a semester by semester basis as well as graduation rates over the last five years.Comment on the effectiveness of any strategies adopted to improve student retention.Please review the IPP (Integrated Program Planning) data that focuses on Retention data. | Retention has remained quite consistent at 85% over the last three years.The retention for Fleming system wide, for the same period, is noted, on average as 81% (IPP, Situational Analysis)There are currently no concerns with retention in this program.  |
| 2.3 Graduate RateReview patterns of graduation rates on a semester by semester basis over the last five years. | Graduation rate:2014 - 65.4% ; 2015 - 66.5% ; 2016 - 66.9% ; 2017 - 68.8% (KPI data)On par with System graduation rates.Over the last two years, employers have been encouraged by faculty to ask to see potential hires transcripts to make sure students have completed their program but also to reinforce the value of the diploma and marks to students (Wilkinson, 2017) |
| 2.4 Graduate SatisfactionUse the FDR report for Program Review – 5 year historical trends to provide your analysis. | Graduate satisfaction with the program is on par with System results and is noted at 97.4% in 2017, up from 89% (KPI data) |
| 2.5 Enrolment Trends and DemandYour team will review and analyze the patterns in the number of program applicants, confirmations and actual registrants over the past 5 years. You will also examine changes, if any, in the student demographic profile and the impact, if any, of this changing student profile on program curriculum.Assess whether the program curriculum needs to change based on the above analysis.Use the KPI excel spreadsheet that provides Day 10 enrolment numbers for Fleming for the last 10 years, to assist you with your analysis.Please review the IPP (Integrated Program Planning) data that focuses on trends related to student demand, and the related ‘Situational Analysis’ information included for your program – select the  Demand Trending Tab and Situational Analysis Tab. | Applications are generally on the decline from a high of 391 in 2014 to 129 in 2017.Subsequently confirmations are also on the decline from a high of 96 in 2013 to the current 42 in 2016.Registration follows the same pattern as applications and confirmations with a high of 116 in 2014 to the current 64 in 2016. (IPP Situational Analysis)Fleming was getting a large boost of interest for the RD program because of popular TV programs and the boom in the West.The TV show (Licence to Drill) stopped airing new shows June 2014 at the same time the layoffs started in the oil patch. This led to a direct decline in enrollment. 80% of the students came to the RD program because of the oil industry. The students that are here still do not know about all of the drilling industries until they are here (Wilkinson comment 2017). |
| 3.0 Program Curriculum | Summary of Key Findings |
| 3.1 Program Learning Outcomes and/or Sector StandardsReview program level learning outcomes in preparation for curriculum mapping (vocational, essential employability skills, general education)Where applicable review sector standards to ensure program is keeping up with new trends, developments and requirements. | The program outcomes were reviewed and Wilkinson noted the importance of the interpersonal/intrapersonal outcomes as “some of the most important to the long range career path of the industry.” It is felt that all the program outcomes are being taught, reinforced and assessed over the four semesters except for outcome #15 which is currently not indicated as being taught or assessed in any course.Wilkinson (2017) also noted that the RDT program incorporates industry Common Core Training in the Surface Diamond Driller, Surface Miner & Foundation Drill Rig Operator courses. The Common Core training documents were developed by the Ministry of Training, Colleges and Universities, in consultation with representatives from the industry. These Training Standards are intended to be used by trainees, trainers/instructors, and companies as a “blueprint” for training or as a prerequisite for government accreditation/certification. Although this training document is intended as a guideline for training, all issues might not apply in all operations. As a result, the RDT program focusses on teaching the safety components from these modular training standards.  |
| 3.2 Program of Study, Course Outlines, Delivery and Program Map Review the feedback and suggestions received from Course-level survey completed by faculty at the end of each semester.Review the balance and frequency of assessment types across the curriculum and their appropriateness to learning outcomes for the course and program level outcomes.Collect a cross section of samples of student work as evidence of achievement of learning outcomes.Reflect and comment upon the variety of methods used to demonstrate program outcomes.Reflect and comment upon the degree of technology-enhanced delivery of the program outcomes.Discuss the degree and depth to which the program is providing work integrated learning experiences.Record the course in the curriculum that covers the college-wide sustainability learning outcome: “Students will be able to explain the interconnections between the broad principles of sustainability - which include human health and well-being, ecological health, social issues, and secure livelihoods- in order to support a better world for all generations”Review (or create) Program Curriculum Map(s) to ensure that there is alignment of current courses to the overall program outcomes, including the Vocational Learning Outcomes, the Essential Employability Skills, and adherence to the General Education Policy.Make recommendations to address any gaps identified or improvements required.Review the program’s current admission requirements and their suitability in relation to program rigour and student preparedness.Include an updated program curriculum map on your program and curriculum review web page. | Course by course reviewGenerally speaking all courses reflect that they are working well or require minimal improvement with respect to assessment and course material. With respect to learning outcomes, the following is noted.Major Revisions noted for:MECH3 Advanced Hydraulics and Rig Maintenance* identified as needing a complete overhaul
* content is significantly out of date as is the delivery method
* review and update learning outcomes

GEOL73 Air Rotary Drilling * Needs updated course description because it is no longer accurate and then the learning outcomes need updated to match the curriculum.
* the new drill purchase means that the curriculum needs to be updated to match the drill capabilities

GEOL18 Horizontal Directional Drilling * the course Learning Outcomes are not specific enough. They need to be updated to reflect the skills and concepts that are taught in the Labs and Lectures.
* improved the drilling field to improve steering opportunities for horizontal directional drilling learning experience
* new equipment introduced in labs that now needs to be reflected in the course outcomes.

NATR41 Soil Studies I* not mappable to Program’s VLO
* learning outcomes need to be reviewed
* recommended to create a course specifically for RDT rather than use this very generic soils course anymore(Hodge, 2017)
* lecture material needs updating (Smith, 2017)

Minor Revisions noted for:GEOL72 Foundation Drilling* add one new learning outcome
* new drill purchased so curriculum needs to be updated to match drill capabilities
* course has only run three times so the course was still being developed without adding new equipment
* identified content gap is the insulation of large diameter footings - currently investigating the purchase of a simulator to close this gap.

GEOL16 Geotechnical Drilling* update wording of learning outcomes

GEOL8 Environmental Drilling* unspecified minor changes noted
* new drilling method (direct push) added last year. Adding tooling now to demonstrate new technology. Lectures and labs will need to be updated

MECH32 Hydraulics - wordsmithing of learning outcomesGEOL6 Diamond core Drilling - wordsmithing of learning outcomesGEOL47 Blasting - re-word learning outcome #4 and look at assessment of blast design concept.Courses indicated as working well:MECH50 Rig Maintenance and RepairMECH9 Drilling Pump SystemsGEOL74 Well ConstructionNATR85 Soil Studies IIGEOL75 Rock StudiesCurrently no information on the status of:APST26 Field OperationsGEOL46 Blasthole DrillingCOMM201 Communications ICOMM202 Communications IICOMP461 Data Management for Environmental and Natural Resources Sciences - It is noted that it has been proposed for Sept 2019 to remove COMP461 from Sem 2 and move the curriculum from COMP461 into GEOM36 and make GEOM36 a 90 hour course - this will create a better balance in terms of course load for students who will have 6 courses in CFS and 8 courses in Sem 2 (instead of 9) (Luloff, 2017).The General Education policy states that the RDT students take two general education courses and this is currently met in the form of NATR8 which is a mandatory General Education course and then RDT students have a General Education elective in Semester 2. One comment from the student focus group survey noted that “it would work when we change to co-op to have a compressed GenEd in reading week”. Other students noted that the online GenEd is a good option so they can work at their own pace it’s just that online isn’t a good way to learn for some students.Balance and Frequency of Assessment Types:The program uses a variety of assessment types including but not limited to quizzes, daily field logs, written exams, D2L exams, practical equipment operations tests, id tests, and multiple choice tests.Wilkinson (2017) notes that most courses are loaded back end heavy for assessments to prevent the students from ‘checking out’ once they have hit 50%. Testing and delivery methods tap into multiple intelligences allowing many types of learning styles to succeed (Wilkinson, 2017)..Collection of Student Work:There is currently a limited collection of exemplary work housed in the RDB offices. Wilkinson (2017) notes that the faculty team will continue to enhance the collection over the academic year 2017/2018.Technology Enhanced Delivery:Currently faculty use pretty standard classroom technology to deliver course material including D2L, Powerpoint, youtube, email, and a program produced video. Wilkinson notes that RDT now has a team that wants to do PD to enhance their use of technology in the classroom.Work Integrated Learning Experiences:Currently two formal work integrated learning experiences exist in RDT. They are: * 45 hour industry placement. This placement works but, with the time required for company training before a student is able to start work, the actual hands on hours are impacted
* 4 month co-op that will start academic year 2017/2018. Wilkinson notes that Companies on the RDT advisory committee have already been asking if the co-op can be longer than 4 months.

Sustainability Learning Outcome is covered in NATR8 Skills for Stewardship and Sustainability. Across RDT sustainability is reinforced in the core drilling courses.Curriculum Gaps to Close:* APST154 Career Preparation - ensure resume skills are being taught in the front 7 weeks of Sem 2.
* see individual course notes above.

Curriculum Improvements:* Wilkinson noted the need to find a place in a course for air compressors to be reintroduced as a lab. This is covered well in lecture in Blasthole Drilling but needs a hands on lab component to enhance it.
* Wilkinson noted significant concern from industry about the quality and preparedness of student’s resumes and interview skills for the 2016/2017 class.
* Propose moving Foundation Drill to 3rd Semester and Drilling Pump systems to 4th (switch) to allow better and more efficient use of new drill.
* propose switching semester that Envt’l and Diamond core drilling are offered to alleviate lost time and the cost of anti-freezing water pumps in Diamond labs due to cold weather conditions. The geoprobe used in Envt’l does not use drilling fluids so weather conditions do not influence when it gets used.

It is noted that it has been proposed for Sept 2019 to remove COMP461 from Sem 2 and move the curriculum from COMP461 into GEOM36 and make GEOM36 a 90 hour course - this will create a better balance in terms of course load for students who will have 6 courses in CFS and 8 courses in Sem 2 (instead of 9) (Luloff, 2017) **Admission Requirements:**OSSD with the majority of credits at the College (C) and Open (O) level, including:* 2 College (C) English courses (Grade 11 or Grade 12)
* 2 College (C) Math courses (Grade 11 or Grade 12)

When (C) is the minimum course level for admission, (U) or (U/C) courses are also accepted.Advanced Standing - University or College GradsA University degree or Ontario College Diploma in a related field, can be granted credit for semester one of the Resources Drilling Technician program, and enter directly into semester two. Degrees in the following areas of study will be considered:* Environmental Science
* Environmental Studies
* Science - Chemistry or Biology
* Geography

Graduates with an Ontario College Diploma in one of the following fields of study will be considered:* Environmental Science/Studies
* Natural Resources

Mature StudentsStudents 19 years of age or older before classes start, who do not possess an OSSD, may write the [Canadian Adult Achievement Test](https://flemingcollege.ca/how-to-apply/mature-students) to assess their eligibility for admission. Additional testing or academic upgrading may be necessary to meet specific course requirements for this program.Wilkinson (2017) comments that he would like to see a broader range of Degrees be considered that allow University graduates to enter directly into semester two. As well, a broader range of College Diplomas could be considered that would also allow College graduates to enter directly into semester 2.  |
| 4.0 Strategic Positioning and New Opportunities | Summary of Key Findings |
| 4.1 College and School AlignmentReview program alignment with college priorities such as vision, mission, values, strategic plan, academic plan and the educational mandate, and / or academic priorities of the School. | Program Alignment with College Vision and Values: Below are outlined three examples of how the RDT program is aligned with the current College **Vision: “***More than Skills. Fleming will be known for our continuous pursuit of excellence in teaching and every endeavor”;* and College **Values:** *“Learning, Collaboration, Creativity, Continuous Improvement, Sustainability, and Inclusiveness” (Fleming College Strategic Plan, 2015-2018, p. 2).* 1. Faculty members maintain professional contact and maintain industry currency by working with working professionals and, faculty connect these individuals to the curriculum, each other and the student body.
2. The program also works with the MOECC who come in to class to administer the Well Technician licence exam to all third semester students and who also give a presentation in class on licence requirements.
3. Faculty also bring in new processes (geoprobe, foundation drilling course) and equipment to stay current with industry trends.

Program Alignment with Academic Priorities: Specifically the RDT program reflects the following Academic priorities: *“Learning Design: Reimagine and design learning opportunities to fully engage our students using accessible outcomes-based approaches, applied learning and authentic assessment.*  Connection to the Strategic Plan: Priority #1 Deliver outstanding student learning and experiences, and Priority #2 Collaborate and prosper with our communities” (Fleming College Academic Plan, 2015 – 2018, pp. 10 – 11). The RDT program demonstrates this by conducting hands on applied learning strategies in all labs and using state of the art drilling and auxiliary equipment . As well, courses are designed to tap into multiple intelligences by having a balance of testing procedures from applied hands on assessments to theoretical exams. The one week field placement (45 hours) requirement provides students with an opportunity to fully engage in industry and forge individual connections with industry players.  *“Teaching Excellence: Promote and recognize innovation and excellence in teaching by supporting and engaging faculty in industry practices, discipline research, and educational technology.* Connection to the Strategic Plan: Priority #1 Deliver outstanding student learning and experiences, Priority #2 Collaborate and prosper with our communities, and Priority #3 Excel as an organization” (Fleming College Academic Plan, 2015 – 2018, p. 12). RDT faculty members are committed, energetic, and creative people who want to contribute to the future of education. Faculty are both teachers and subject matter experts. They regularly attend drill conferences (PDAC, OGWA) and, maintain close contact with contractors in the various sectors to stay abreast of new technologies, standard operating procedures and safety protocols. Some faculty also work in the industry during the summer holidays. |
| 4.2 Competitor ProgramsAnalyze key parallels and differences between this program and those of its closest competitors, where applicable.Comment on the ’Value-added’ program distinctions and their attractiveness to prospective students. | OCAS – noneMTCU - none Robert Gordon University – Aberdeen, ScotlandMasters - Drilling and Well Engineering<http://www.rgu.ac.uk/engineering/study-options/postgraduate-taught-full-time/drilling-and-well-engineering/> Value added: The RDT program is a full experiential learning experience. Using state of the art drilling equipment the application of theory learned in our classrooms is applied in our labs thus completing the experiential learning experience.  |
| 4.3 Learning PathwaysComment on recent or anticipated initiatives that promote student pathways including secondary school partnerships, dual credits, program laddering, dual diplomas, and university transfer, articulations, and partnerships.Identify any new pathways that could be developed.  | Graduates of the two-semester [Blasting Techniques](https://flemingcollege.ca/programs/blasting-techniques) program are eligible for entry to semester two of Resources Drilling Technician. The [General Arts and Science – Environmental and Natural Resource Studies Option](https://flemingcollege.ca/programs/general-arts-and-science-environmental-and-natural-resource-studies-option) (GSN) is another pathway to consider if an interested applicant does not meet the requirements for admission to Resources Drilling Technician.  |
| 4.4 New Program or Redesign IdeasAre there opportunities for new program initiatives based on Program, School, or community strengths and alliances? | Consider looking at “modular” delivery of courses that would serve to train/upgrade working professionals in the industry.Consider looking at “online lectures and then intensive 3 day on equipment on site” course delivery (Geotech Drilling because dual credit does this course, and to accommodate an international cohort ie. China) The diamond drill needs to be updated to comply with safety regulations and to keep pace with technical upgrades in industry. Co-op - in progress. |
| 5.0 External Relations | Summary of Key Findings |
| 5.1 Community PartnershipsDoes your program have significant partnerships, relationships, connections, or offers of support from the community that help to enrich the program and the student experience?Are faculty, staff, and student involved in volunteer projects and events? | * Baroid and Di-corp have had a long standing relationship of donating all of the drilling fluids and grout products that the program uses.
* The RDT program has had great industry support (donations)in the past.
* RDT is hosting the ADSC 2017 Anchor & Micropile Installation School. September 17-22, 2017. Attendees from all over North America. Five rig manufacturers with new drill rigs on site. This is the 1st time to be held in Canada.
* Guest speakers throughout the school year
 |
| 5.2 Program Advisory CommitteeComment on the distribution of Committee membership by constituency, sector, and / or region.Comment on the vitality of the Committee (frequency of meetings, members’ level of participation, engagement, and turnover.)  | Darren Juneau Aardvark Drilling Inc.Natalie Spitini Ministry of the EnvironmentAndy Braithwaite Andy Braithwaite Trenchless ConsultingMark Duckworth Baroid of CanadaGary Oswald Gary Oswald Blasting Ltd.Ryan Bailey Underground Sonic Drilling Services Inc.Bill Morrison Morrison Envir. Ltd.Bryan Watson G.Hart & Sons Well DrillingBlair Miles Anchor ShoringAndy Blokker Avertex Utility Solutions Inc.Dave Gunn Geo-Environmental DrillingEvan Williams Lantech Drilling Serv.Bill Starke Deep Foundation ContractorsPaul McAnuff Golder Associates Ltd.Jason Bindseil EBS GeostructuralBill Krasnozon Boart LongyearDaryle Pinter LafargeTao Henderson GroundTruth ExplorationPat Vincent Berkel & Company Contractors IncNatalie Spina Ministry of the Environment & Climate ChangeMike Rochetta Aquatech Dewatering Company Inc.Dwayne Graff Well InitiativesThis Advisory group demonstrates broad industry representation and is noted to have good participation annually from it’s members. The Committee meets once per year in February and this timing works because it is the day before the job fair so the representatives who fly in benefit by being able to access students at the job fair and this is done on purpose (Wilkinson, 2017). |
| 5.3 Alumni RelationsDescribe the type and range of alumnae involvement in the program.Current and future strategies to engage alumnae in the program. | Alumni are involved in the program as guest speakers in classes, as PAC members, as faculty and as job fair attendees (Wilkinson, 2017). |
| 6.0 Program Resources  | Summary of Key Findings |
| 6.1 Program Revenue and ExpensesPlease review Integrated Planning and Performance (IPP) information for your program.Are program resources adequate, in the context of program currency and student numbers? (e.g. laboratory equipment, software, library holdings, or tools essential to program delivery and student learning.Are there opportunities for further program specific external revenue such as sponsorship, grants, donations or gifts-in-kind?Review the existing revenue and expenses associated with your program using the IPP tool and provide comments below. | CTO remains strong (42%) although declining from a high of 46% in 2014 (IPP Situational Analysis).It is felt that resources are currently adequate. When Marketing gets the RDT numbers to start to trend up we will have to look at resources again (Wilkinson, 2017).  |
| 6.2 Faculty and Staff ResourcesPlease comment on:The number and distribution of all faculty, technicians, and technologists associated with the program including full-time, part-time, sessional, and cross-appointments.Profile of the faculty, and staff associated with the program including cumulative credentials, scholarship, work-related and teaching experience, and expertise in education.Significant faculty or staff accomplishments such as professional recognition and awards, achievement of credentials, and appointments.Hiring priorities over the next few years based on the above. | Currently there are:* Three full time faculty
* one full time tech - shared with surface blasting
* one part time tech - shared with surface blasting
* two/three part time faculty

All full time faculty have minimum 10 years working in the field and are all grads of the program. Range in teaching experience from 19 years to 2 years. Each faculty member teaches the courses directly related to their industry experience. Two full time faculty currently remain active in the industry outside of RDT.Part time tech’s administrative strength is noted and the Full time tech is a licenced mechanic.Steve Wilkinson and Jim Smith are both licensed well technicians.With current student numbers this staffing complement is working. |

Program Improvement Plan

Based on the analysis of your key findings, identify areas that require attention and action in the next 1-3 year timeframe. Ensure that you only recommend actions that reflect the program’s priorities and its capacity to achieve them, and record the success of any changes implemented and the means by which they are being evaluated.

**Write recommendations to:**

1. **bridge identified gaps**
2. **build on strengths**

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| In order of Priority | Recommended Improvements: | Timeframe | Person(s) Responsible | Action:ImmediateMidtermLong Term |
| 1. | Program marketing - develop a strategy that includes but is not limited to:* developing a role for alumni here
* explore bringing high school students on site to deliver curriculum related to a high school tech course
* more clearly articulate the exemptions from RDT that GSN grads are entitled to in order to enhance this internal pathway
* articulate and allow for a broader range of university degrees/college diplomas accepted for admissions beyond what is currently listed on the program page
* explore a system that will allow University graduates to be exempt from CFS
 | ready for Jan 2018intake | developing a plan ???GSN exemptions - Thomas Luloff/Steve WilkinsonAdmission requirements - Daryl PapkeUniversity Grad exemptions - Thomas Luloff/Steve Wilkinson | Immediate |
| 2. | MECH3 needs facelift (estimate 40 hours of curriculum work) | ready to go Jan 2018 | Ted Sturman | Immediate |
| 3.  | guest lecture and lab in Ecosystem Skills (CFS) needs to be updated (4hrs) | January 2018 | Thomas Luloff/Josh Feltham/Steve Wilkinson | Immediate |
| 4. | APST154 Career Preparation - ensure resume skills are being taught in the front 7 weeks of Sem 2 (before the job fair in Feb) (minimal hrs) | Jan 2018 | Steve Wilkinson and Sarah Haase | Immediate |
| 5.  | Co-op | Sept 2017 | Sherri Crump/Steve Wilkinson | Immediate/In progress |
| 6. | update all course learning outcomes (estimate 40 hours of work) | Spring 2018 | Coordinator/Faculty/Learning Designer | Midterm |
| 7.  | diamond drill needs to be updated to comply with safety regs and industry tech upgrades.  | January 2019 | Steve Wilkinson/Karen Rosborough | Midterm |
| 8.  | Continue the research to budget for and purchase/lease/rent a Foundation Drill simulator |  | Co-odinator, donation person?, Charlie Moretti | Immediate/Midterm |
| 9. | Would like to explore the possibility of a compressed gen ed being offered winter sem reading week so that a student that is missing their gen ed can graduate | Sept 2018 | Learning Design | Midterm |
| 10. | Consider looking at “modular” delivery of courses that would serve to train/upgrade working professionals in the industry. |  | Learning Design/Alternate Delivery?? | Long Term |