**Program Review Self Study Template**

| **Program Coordinator:** | **Scott Heard** | **School:** | **SENRS** |
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| **Program Code:** | **HEO** | **Date Completed:** | **May 8, 2014** |
| **Program Name:** | **Heavy Equipment Operator** | | |

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| **Indicator**  **1.0 Industry Trends** | **Summary of Key Findings** |
| **1.1 Sectoral Standards and Industry Trends**  **Review / discuss:**   * New or emergent industry / sector themes or issues that may have a potential impact on program positioning * Industry / sector issues identified by the Program Advisory Committee * Recent labour market data or sector reports * Recent or anticipated changes in occupational standards, level of entry and credential and / or standards of accreditation * Program alignment to labour market and sectoral trends * Trends identified by the Program Advisory Committee | The industry is changing with more computerization and electrical components including:  -electric drive systems  -medium voltage systems on mobile equipment  -low emission engine technology (Tier 4)  -remote tracking  Due to the increase in technology demand for skills in this trade now include more computerized training.  Trends reported by the Advisory Committee including the current mining boom and pipeline work up north and out west. |
| **1.2 Industry Liaison**  **Review / discuss:**   * Program initiatives to maintain involvement with the industry / sector such as field placement supervisions, clinical, faculty renewal, professional learning, other professional affiliations, or community-based projects | The program is well supported by industry including membership on the Advisory Committee and donations of equipment. |
| **2.0 Curriculum Development and Framework** | **Summary of Key Findings** |
| **2.1 Curriculum Framework**    **Review / discuss:**   * Describe how your program demonstrates a learner centered approach and addresses our core promise to students concerning personalized learning and support. | This program is a hands-on program with more than half of the total program hours spent on the heavy equipment accomplishing a variety of tasks that increase in complexity during the weeks. Students spend approximately 20 hours per week operating five different types of heavy equipment. Small groups of no more than 10 students allow instructors and technologists to work individually with students to assist in the development of skills. Weekly checklists give students feedback so that improvement can be done the next time the student is on the same piece of machinery the next week. |
| **2.2 Outcomes from Curriculum Renewal**  **Review / discuss:**   * Key outcomes from the Curriculum Renewal processes of the past few years * Progress to date in implementing the recommendations arising from Curriculum Renewal * Success of the changes implemented and the means by which they are being evaluated | Students are spending more time on simulators and this has become a more integral part of the program. |
| **2.3 Curriculum Sequencing and Alignment with Standards**  **Review / discuss:**   * The Ontario College Credentials Framework and the extent to which the program aligns with the provincial standards. * The program’s current admission requirements and their suitability in relation to program rigour and student preparedness * The extent to which course content, levels of learning, and assessment methodology are successfully sequenced and aligned between courses and across semesters | The program standards were revised in November 2013. The program also aligns to the NOC occupational classification and their standards and performance measures for a heavy equipment operator.  The admission requirements are suitable although some students are not prepared for the weather elements; something which should likely be placed on the web site.  The new model, implemented in the fall of 2013 did not work well as the sequencing was not suitable. Some students were working with machinery that they had received little or no instruction and this was creating issues and safety concerns. The model has been changed to ensure better sequencing.  Assessments are also being redesigned for the March 2014 intake with more use of D2L including online quiz completion required before operating the simulator and better lecture preparation. | |
| **2.4 a) Curriculum Map**   * Review the Program Curriculum Map and discuss the extent to which there is alignment of vocational and course outcomes * Review / discuss the distribution and progression of Vocational Learning Outcomes, Essential Employability Skills, and General Education themes across the curriculum. | The program will be re-mapped with the updated outcomes. The outcomes are focused on operating of equipment. Two outcomes refer to safety and maintenance and two separate courses teach these important areas.  This program had 6 vocational outcomes. A safety outcome was added in October 2013 as safety needs to be stressed as an integral part of the learning in the program. |
| **2.4 b) Curriculum Map**  **Submit an updated curriculum map as an attachment to the Program Review Report** |  |
| **2.5 Delivery Mode**  **Review / discuss:**   * The *primary* modes used to deliver curriculum such as lecture, seminar, lab, applied project, field camp and web based courses * The rationale for, and appropriateness of, these delivery modes in relation to program learning outcomes * The degree and depth to which the program is providing work integrated learning experiences * The degree and depth to which the learning experiences are enhanced by the use of educational technology. | The primary modes of teaching in this program are direct instruction. In lectures, the students are taught the basics of equipment operation, maintenance and safety and then spend the balance of time in the field (labs) driving the machinery to complete a variety of assessed tasks. These are graded weekly and students are given immediate feedback about their performance.  The current model is having some issues as the lecturing is not in sequence with the labs. In some cases, students are expected to operate machinery that they have not had instruction (lectures) on. This poses a safety hazard as well it does not make for good pedagogy. This is being addressed and the program will be redesigned to meet this concern.  Students use simulators to enhance their learning on a weekly basis. New quizzes are being redesigned with the learning technologist and curriculum consultant to make better use of student time with the simulators.  Weather is becoming of increasing concern which is reducing operating time for the students. Many private companies have large structures that do not require heating. These are metal structures that allow for operating of machinery at all times of the year and in all weather conditions. |
| **2.6 Assessment and Evaluation Methods**  **Review / discuss:**   * The program approach to learning assessment * The balance and frequency of assessment types across the curriculum and their appropriateness to course / vocational outcomes * Reflect and comment upon the variety of methods used to demonstrate outcomes. Are learner centered principles part of the assessment approaches? | The program is applied and most of the assessments are based on the correct operation of the equipment. Students do several projects with the equipment that simulate the actual work in the field such as digging to a pipeline, excavating a basement, moving earth into a dump truck, etc.  One area that is over-represented is the value of attendance marks; this should be reduced and changed to participation grades or other assessments. Many assessments are checklists and these, while providing good feedback, are not comprehensive. A new model of the program will allow for more comprehensive feedback and better culminating activities.  As hands-on learners, students do not see the relevance of the maintenance and safety courses to their careers. As a result, attendance can be spotty and assignments not completed. Students also start missing other components in their operating courses once they have achieved the minimum of 50%. Recommendations below should increase attendance as well as improve the quality of the work that students are required to do in the program. |
| **2.7 Curriculum and Diversity**  **Review / discuss:**   * Program strategies that support student diversity and promote understanding of diversity, including program culture / climate, curriculum content and approaches to teaching and learning | The program would like to see more female students. New marketing materials include women as operators. |
| **2.8 Learning Pathways**  **Review / discuss:**   * Recent or anticipated initiatives that promote student pathways including high school articulations, dual credit, program laddering, dual diplomas, and university transfer, articulations, and partnerships | As a short twelve-week program and no competitor programs in Ontario, transfer and articulation agreements are not suitable at this point. |
| **3.0 Student and Graduate Satisfaction** | **Summary of Key Findings** |
| **3.1 Formal Measures of Student and / or Graduate Satisfaction**  **Review / discuss:**   * Key Performance Indicator results for the program with a focus on #s 4, 8, 9, and 11 * Program status and positioning in relation to the KPIs of other programs of a similar type (where applicable) * Feedback and summary report from Learning Support Services (LSS) summary * Themes or issues emerging from a review of course evaluation summaries (Chair/Dean response here) | Graduate Satisfaction (KPI 4) was slightly weaker in 2013 with 83% satisfied compared to the college average of 87%. This was the lowest in several years of reporting since 2009. Note that there are still no comparator programs in the system. There is no data for KPI 8 or 9. In 2013, graduate satisfaction was 79% (KPI 11) lower than the college average of 83%. |
| **3.2 Other Measures of Student and Graduate Satisfaction**  **Review / discuss outcomes from:**   * Student focus groups (mandatory component)      * Student Advisor observations / reports * Formal or informal discussions with students and graduates such as class councils, class representatives, individuals or delegations * Debriefing sessions following a field placement, clinical placement, or practicum | Most students enjoy the operating parts of the program, but struggle with some of the other areas.  A student focus group will occur in late March/ early April to be included in this report. |
| **4.0 Employment Trends** | **Summary of Key Findings** |
| **4.1 Employment**  **Review / discuss:**   * 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 * Student preparedness for entry-level positions * Emergent employment trends such as new types of positions, changing job market, regional distinctions, changing employer profile, or emerging skill shortages | Employment opportunities are good for graduates especially if they are willing to move out west or up north with such large projects as the oil sands, pipeline construction, and mining.  According to the KPIs from 2011-2012, employers are highly satisfied with graduates with 90% reporting very satisfied/ satisfied. Over 80% of graduates were working. However, only 45% were working in related employment 6 months after graduation. Many graduates are young and this may be a deterrent for employers and many students do not want to move where there are jobs (out west and up north). Students who do go where the jobs are get hired. Also, many jobs are seasonal such as subdivision and highway work. While many work in these jobs all-year round; newer staff are often laid off during non-peak times.  Students are well-prepared to operate five different pieces of equipment which makes them highly marketable. They are also taught basic maintenance, something which employers require especially in remote locations. |
| **4.2 Other Graduate Destinations**  **Review / discuss:**   * Alternative graduate destinations such as further education, international opportunities, volunteer service, or other experiences | Some graduates of the HEO program, follow with the HET program. This works well with the fall intake as HET starts in January. Three to four graduates from the November group often also apply to the HET program. |
| **5.0 Strategic Positioning** | **Summary of Key Findings** |
| **5.1** **College Alignment**  **Review / discuss:**   * Program alignment with college priorities such as vision, mission, values, strategic plan, academic framework, and the educational mandate, and / or academic priorities of the School * Opportunities for new program initiatives based on Program, School, or community strengths and alliances | This program aligns with the vision and mission of the college with its applied and hands-on focus.  Students work in pairs and alternate their time on the equipment which allows for peer support and review. |
| **5.2 Competitor Programs**  **Review / discuss:**   * Key parallels and differences between this program and those of its closest competitors, where applicable * ’Value-added’ program distinctions and their attractiveness to prospective students | There are no direct competitor programs at the college level. There are private industry programs that tend to be short in duration and many drivers are still taught on job sites by other operators.  Conestoga has a HEO program as well but it is part of a complete apprenticeship. This program consists of three levels and has more maintenance and transportation courses in it. The major difference is that students in this program are registered apprentices with local industry. At the completion of the program, successful students earn an OCC. |
| **6.0 Enrolment Trends** | **Summary of Key Findings** |
| **6.1 Demand for the Program**  **Review / discuss:**   * Patterns in the number of program applicants, qualified applicants, and actual registrants over the past 6 years * Changes, if any, in the student demographic profile, including level of maturity, diversity, prior knowledge, technological literacy, work experience, and expectations * Impact, if any, of this changing student profile on program curriculum | The program had a conversion of 4.2 in 2012; one of its best rates in the last five years with 231 applications and 55 registered. This program has a large differentiation in ages ranging from the 17 year old high school graduates to more mature learners who have lost their jobs and are returning to college for retraining.  In past years, many students had taken automotive courses or were experienced with farm equipment. Fewer students have had this type of experience and this is becoming an issue. Teachers are spending more time on rudimentary areas and this is resulting in curriculum changes. |
| **6.2 Student Progression**  **Review / discuss:**   * Patterns of student success and retention on a semester by semester basis over the last six years * The effectiveness of any strategies adopted to improve student success and retention | As this program is 12 weeks in duration, students who drop out usually do so early in the program. Some return the next time the program is offered if they have resolved a variety of personal issues.  To give students a better view of the program, the first week has been designed as an overview including the type of equipment, safety, and personal protective equipment and clothing. |
| **7.0 External Relations** | **Summary of Key Findings** |
| **7.1 Alumnae**  **Review / discuss:**   * The type and range of alumnae involvement in the program * Current and future strategies to engage alumnae in the program | Phil Graham (Learning Technologist) is a graduate of the program. Evan Fudge (Learning Technologist) is also a graduate. |
| **7.2 Community Relations**    **Review / discuss:**   * Significant partnerships, relationships, connections, or offers of support from the community that help to enrich the program and the student experience * Faculty, staff, and student involvement in volunteer projects and events * Contributions to the not for profit sector such as committee or board service by program-associated faculty and staff * Community recognition in the form of student bursaries, awards and scholarships | Students and Instructors have helped maintain the Trans Canada trail section that goes through Frost Campus.  We have recently become members of OCGRA (Ontario Regional Common Ground Alliance). This is an organization with over 400 member organizations and companies such as Enbridge, Bell, Rogers, Hydro One and Aecon that work towards creating safe excavating practices in Ontario. |
| **7.3 Program Advisory Committee**  **Review / discuss:**   * The distribution of Committee membership by constituency, sector, and / or region * The vitality of the Committee such as the frequency of meetings, and members’ level of participation, engagement, and turnover * The extent to which Committee operations are aligned with the Fleming College Advisory Committee Orientation Manual and Advisory Committee policy. | The HEO committee has been revitalized and regular meetings will now occur on a yearly basis. Several members volunteered to be part of the program review panel for the program review.  Current PAC members are:  Bill Kasper (The Miller Group); Al Douglas (Fowler Construction); Scott Whittaker (Dufferin Aggregates); Gary McNamara (Drain Bros. Construction); Rob McCarthy (LaFarge); Tammy Quenneville (JG Stewart Construction); Dan Brown (Holcim (Canada Inc.); Ross Deal (Aecon Construction & Materials Ltd.); Wayne Smith (Coco Group of Companies); Steve Brough (HARD-CO); Karl Dings (Balterre Contracting Ltd.; Glen Ferguson (Aecon); Tom Collins (Kawartha Utility Services); Mark Minaker (KJ Beamish Construction); |
| **8.0 Program Resources** | **Summary of Key Findings** |
| 8.1 Human Resources  Review / discuss:   * 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 Dean, 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 * Contributions to the professional community or industry by program-associated faculty and staff including board / committee service, research, and presentations / publications * Current staffing levels for the program in relation to program   numbers, curriculum, delivery modes and areas of specialization / generalization   * Hiring priorities over the next few years based on the above * Current professional development and renewal plans in relation to program or student needs | The program has had issues with retention of technologists and instructors. There are no full-time faculty who teach in the program although the coordinator is full-time.  The learning technologists are current operators and bring this expertise with them. One technologist is fully trained with the simulators.  One shortfall of the program is that the instructors and technologists have no or little teacher training. This could be done either before the March start up or prior to the September start up. There is no CBD time as the program runs through May / June.  The coordinator has participated in two Eastern Region training programs- Focus on Learning and LEAP. It has been recommended that he or other staff attend the Aligning and Building Curriculum program in the fall of 2014. |
| **8.2 Physical Resources**  **Review / discuss:**   * Program costing information * Scope of current program resources such as laboratory equipment, software, library holdings, or tools essential to or which enhance program delivery or student learning * The adequacy of above resources in the context of program outcomes, program currency, and student numbers * Program specific external revenue such as sponsorships, grants, donations or gifts-in-kind * Other externally generated revenues, if applicable | The Heavy Equipment Centre requires more space for the growing number of students in the HET program as well as the HEO program. With larger numbers in HEO, students do not get as much time on the machines and the sequencing of lectures and practice needs to be re-arranged as students may be operating equipment that they have not received full instruction on.  In 2012-13, this program contributed 44.8% to the college. |

File Program Review report in: **S:\shared data\CLT\School Name\Program Name**

Attach copies of existing and revised bench marks

Attach an updated Program Curriculum Map

**Based on an analysis of your key findings, identify areas that require attention.**

**Develop recommendations and an action plan that reflects the program’s priorities and its capacity to achieve them.**

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| **Program Review Action Plan** | **Responsibility** | **Timeframe** |
| **Recommendations:** | | |
| **Review the current model and revise to improve instructor contact and align the curriculum. Completed Jan 2014.** | **Co-ordinator, Faculty, Staff, CLT** | **March 2013** |
| **Review the current assessments to reduce the weighting of attendance** | **Co-ordinator, Faculty, Staff, CLT** | **March 2013** |
| **Review program outcomes and revise where necessary to reflect current practices and trends.** | **Co-ordinator, Faculty, Staff, CLT** | **Completed November 2013** |
| **Remap program to include new program outcome.** | **CLT/ Program Coordinator/ Faculty** | **April 2014** |
| **Review and revise the maintenance course so students appreciate its importance to the industry and their future employment. A guest speaker as a project might be a good idea.** | **Faculty/ CLT** | **March 2013/ major development after new hire** |
| **Increase the use of D2L for quizzes across courses and simulator pre-assessment. This will increase the program’s alliance with the college’s e-strategy.** | **Faculty/ CLT/ Learning Technologist** | **March 2013** |
| **Revise current assessments on various equipment to include a formalized and culminating task weekly for grading.** | **Faculty/ CLT** | **March 2013** |
| **Incorporate required tickets for operations in various industries, in particular mining and pipeline construction, such as Confined Space and Sour Gas. This will be researched in CBD.** | **Coordinator** | **CBD** |
| **Provide some teacher training for instructors such as lesson planning and assessment strategies.** | **Coordinator/ CLT/ Faculty Development** | **Ongoing** |
| **Student focus group is to be completed. Completed April 2014; notes are in program file.** | **Chair/ CLT** | **March/ April 2014** |
| The ideal intake for this program is 40 students for each of the three 12-week semesters. Once the numbers go over 40, equipment must be rented which is very costly. Ideally, once the 40 cap is reached, the remainder of the applicants should automatically be offered intake into the next semester. This would provide continuity in the program including staffing, equipment, and maintenance costs. This will be further explored with Admissions. | **Dean/ Chair/ Admissions** |  |
| Examine the current 50% pass in the operating and safety courses and increase to 70% as a passing grade. Other programs have a 70% for core courses such as safety and equipment operations. Currently, once some students have 50%, their attendance drops and they are missing important course content. Also, industry tests and certifications require 70% as a passing grade. Thus the program would mirror current industry standards. | **Coordinator/ Faculty/ Dean** |  |
| Incorporate a strong statement in all outlines, that students must complete all assessments to pass the course. This would also assist in keeping attendance high and all students would be required to complete all tests, assignments, and operating modules. | **Coordinator/ Faculty/ Dean** | **June 2014** |