**Program Review Self Study Template**

| **Program Coordinator:** | **Valentin Bolsterli** | | **School:** | **School of Trades & Technology** |
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| **Program Code:** | **44900** | | **Date Completed:** | **April 2013** |
| **Program Name:** | **Welding Techniques** | | | |
| **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 | | There are a number of upcoming events that will require higher skilled welders throughout Canada:   * the shipbuilding industry in eastern Canada for the defense department which will require Fitter/Welders * the power industry in Ontario which will require Fitter Welders and Pressure Welders. * the oil industry out west which also requires Fitter/Welders and Pipe Welders. * Metals are changing and welders need to know how to adapt processes to these “new metals”. * PAC members have indicated that fitter/fabricators are high in demand as well as inspection skills * At least 30,000 welding professionals need to be produced each year just to keep up with the demand in the US (WELD ED) similar claims are made in Canada. * Aging population accounts for the anticipated shortages. * There will continue to be a shortage of skilled welders with advanced skills while individuals with basic welding skills will be more susceptible to periods of unemployment as their skills are employer specific. * Union halls and Red Seal Certification require grade 12 math * There is a need to attract young people to consider the trades. * According to Application Summary Report there is an increase in enrolment for 2012 of 22% for Welding Techniques programs across the province. See Application Summary Report. * Standards are set high, qualified welders get the positions if they have the right skills-there needs to be more emphasis on trouble shooting and layout design in the program. * Need to focus on employability skills and ensure that students treat their training as a job. * Support students in identifying what type of welding career they would like to specialize in and teach them how to apply for work. * There is an increase in the use of automated systems in the welding industry. * There needs to be better integration of welding into the manufacturing process. * The training of welders needs to be more scientific, they need to have a better understanding of the processes and when they are best applied. * The present-day image of welders does not reflect the progress made in the welding industry in machine processes and automation. * With the advancement in machine processes and automation the quality and reliability of welds will improve. (American Welding Soc.) * Moving forward In the techniques program we propose to offer not only the CWB Ticket 1GF (flat position) but also the 2GF (horizontal position) and the technician program would offer 3GF and 4GF (vertical and overhead positions). * Would like TSSA cert for pressure vessels and pipe CWB and piping. This will be considered further for possible be addition to the second year of the Technician level program.. * The program is designed for an entry level position. Employers want graduates with more skills and support moving forward with a new Welding and Fabrication Technician program. | | |
| **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 needs to include more applied projects at both the techniques and technician level. * Fleming was supported in moving forward by the PAC to apply for TDA status, While Flemings program includes some CWB certification increasing the certifications to include more CWB tickets and TSSA certification would expand employment opportunities for students. * Field placements are difficult to secure in unionized environments. Paid co-op requires employers who will consistently participate, influenced by geographic location. This option will be revisited this the Welding and Fabrication program is created and is up and running. Need to determine if the community would support a co-op as optional semester. Will track Algonquin’s progress as they have launched an optional semester with a co-op. Plan to attend a site visit with Welding Coordinator at Algonquin College. * Community recommends that we actively participate in skilled trade competitions. Fleming plans to offer gr. 9 skilled trades camps and will continue gr. 7 & 8 camps. * Need to partner with local employers for field trips and encourage greater, Industry involvement with key note speakers. * Use outreach programs CERC, PERC, Job find * Suggestions: examine possible student placements within the local welding industry, initiate community building projects (e.g. partnerships with local schools, outdoor education centers, Habitat for Humanity building projects, etc.) Possibly consider a service learning component to the program as this would be an amazing addition to the program. | | |
| **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. | | * Faculty’s experience and contact are critical in being able to build partnerships with local employers. * Students have noted that they receive more personalized learning with smaller class in the most recent focus group. Students would like to further train in the field of welding and encourage faculty to look at creating additional pathways for learning. See focus group summary. * **Curriculum Development** * Refer to Curriculum model to see proposed changes in the WTQ program. Changes include repositioning the WTQ program to pathway into the Welding & Fabrication Technician program, changes in course content, course / program outcomes to align with new proposed MTCU program outcomes, and changes in delivery mode to include e-learning technologies. Changes are also in line with the required outcomes of the apprenticeship program. * Refer to Course Outline review for detailed recommendations of curriculum changes. E-learning and sustainability is highlighted to ensure that program aligns with the College’s Strategic Plan. * Content specific changes include adding two Trades and Calculations, Prints and Drafting, Health & Safety Course and a Portfolio Development course that will assist students in developing employment readiness skills. (job find search/ hidden job market) * Delivery specific changes include:   + scaffolding learning by starting with large group demonstration, followed by small group (3-4 students) and then individually (this allows students to see the procedure multiple times, in addition to getting individualized help as required)   + Strategic peer partnering (stronger students pair with weaker and explain/demonstrate the technique)   + Hand over hand (instructor physically guides student one-on-one, clearly demonstrating technique)   + Repetition and rephrasing of instructions   + Showing techniques in multiple ways when possible   + Being open and receptive to requests for extra help   + Following up with at risk students by contacting them individually   + The shop is an excellent forum for one on one learning. In a welding booth a student and a teacher can interact without the distraction of others and work on specific problem areas that are particular to a student | | |
| **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 | | Curriculum report identified the following priorities:   * Comply with MTCU standards and ensure that learning outcomes at the course level are objective and measureable. Course content needs to align with outcomes for apprenticeship level I in the techniques level and apprenticeship level II and III at the technician level. * Allows for pathways into higher training * Need to increase KPI scores for the program * Hire part-time faculty who are passionate about the field and adovate for a new full-time hire * Better alignment of industry requirements in terms of CWB certifications and with apprenticeships * Dedicated faculty committed to the industry and building partnerships * Growth plans for Welding & Fabrication Technician Program is supported by faculty and PAC * Change layout of the welding shop to ensure that it meets the needs of industry and is compliant with health and safety protocols. Health and Safety manuals for labs must be developed, not only to ensure that students and faculty are safe, but also to expose students to industry practices relating to Health and Safety and prepare students for the workplace. * Increase the welding processes taught to ensure that we are in keeping with industry standards * Implement a fabrication project into the welding program so that students become more engaged and also receive a hands on experience in blueprint reading, layout, fitting. * Create up to date course binders to ensure quality, consistency and compliance with Universal Design principles. Goals are to have electronic binders for all courses. * Replacement of existing welding equipment for the new KTTC plans. New space will have a welding lab of 30 students vs. the current size of 20. * Create a standard introductory welding course that can be used in all of our programs ie. Construction, Plumbing, HRAC and for dual credit. * Actions to be researched, or deferred for future action:   + Laser Welding is coming to the fore front not current priority   + IIW Standards for educating welders pursue once the Technician level program is established. * Introduce a Welding Technician level program with two exit points-(1) Welding Techniques (2) Welding & Fabrication Technician –this proposal was worked on in conjunction with the program review. | | |
| **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 | | * Add and additional math course to ensure that students will have the opportunity to learn grade 12 math curriculum. Dean will issue a letter at the completion of Trade Calculations I and II.. * Courses have become more interrelated, i.e., Prints need to be used in labs for applied projects   New competitor programs and/or re-positioning of existing programs. See competitor summary   * Growth for the Welding Techniques program has been significant. There has been 33% growth overall across the entire system. Fleming has had a 5% growth in the past year. There are three new Welding Techniques programs: Algonquin, Durham and Sault have all started a WTQ program in the past year. * Students often transfer skills and knowledge between courses * Suggestions for Improvement:   + Alignment of projects between courses (e.g. blueprint reading and welding techniques)   + Possibility of stronger connections between courses (e.g. a blueprint created in one class, is then used to carry out the project in a different class)   + Possibility of shared assessment (e.g. instructors mark a project together to ensure consistency of assessment)   + More project-based learning (e.g. students creating real-life, usable projects)   + Admission Criteria will remain as open; need to ensure that enrolment remains steady.   + Bring awareness to students as to what is expected from them on the work force. | | | |
| **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. | | Program outcomes had to be modified. New program map was created to reflect said changes in Course Outline Summary Sheet and curriculum model.  Moving forward the new program Welding & Fabrication Technician has been designed to include four semesters with two exits points: (1) Students can exit at the successful completion of semester two with an Ontario College Certificate in Welding Techniques and opportunity to challenge the 1GF (Flat fillet and groove welds) and 2GF (horizontal position) certification from CWB (Canadian Welding Bureau) upon successful completion of the certificate level program. (2) Students can exit at the successful completion of semester four with an Ontario College Diploma in Welding and Fabricating Technician and the opportunity to challenge the additional tickets 3GF and 4GF (vertical and overhead positions ) certification from CWB upon successful completion of the diploma level program. | | |
| **2.4 b) Curriculum Map**  **Submit an updated curriculum map as an attachment to the Program Review Report** | | Curriculum Map has been attached. Includes both Welding Techniques as well as new program proposal Welding & Fabrication Technician to ensure alignment and clear pathways. | | |
| **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. | | * Hybrid course in Health and Safety and Blended Introduction to Welding course has been added. During CBD, e-learning coach will work with faculty on developing these two new offerings. New technologies will be explored to be used in the classroom including simulations and learning resources are aligned to Fleming’s commitment to sustainability. Other technologies include robot in new lab, the CNC table * Curriculum model includes a blueprint for the program where each courses in the program has been aligned to apprenticeship learning outcomes. Outlines have embedded outcomes of level 1 apprenticeship with semester one and two and level 2 & 3 with semesters three and four of the program. * Students thrive in hands-on environment (e.g. lab). Lectures need to be as innovative as possible (e.g. use of technology, video), however many students still struggle with this format of learning. Computer and Communications courses have been adopted in semester one to assist students in developing foundational skills and to support increased pathways to other programs * Ideally, lectures should take place in an environment where hands-on demonstrations can be presented. * The inclusion of field trips to related industries would be beneficial (e.g. to steel suppliers, fabrication shops, construction sites). * TRIED TESTED and TRUE: By delivering information in different modes, it allows students to access information in a way that is conducive to their learning style; integration of a few projects would stimulate learning and solidify techniques learned from practice coupons | | |
| **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 learnercentered principles part of the assessment approaches? | | * Need to standardize assessments to ensure that students are evaluated objectively. Increase the use of rubrics with set criteria and ensure consistency in marking with all faculty. * Demonstrations are great for students (follow by lead) than the student can make it their own with practice. Demo/hands on/practice/understand * Assessment of learning using a variety of techniques; evaluation of projects, student’s overall improvement, tests/quizzes (scribing or oral responses for some students, as needed), participation in class discussions, shop practices * AODA requires that learning is accessible to all therefore need electronic files of course material. This will be a goal this CBD * Learning through the use of welding coupons students has every chance to get an excellent mark: test coupons are an excellent tool for evaluation. Maybe we could design a project that allows for evaluation of skill and allows the student to take it home and show off to family and friends their newly acquired skills | | |
| **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 | | * Demonstration/understand/hands on/practice and one on one when needed * Inclusion of all students, tailor instruction to meet individual needs, creation of positive learning environment where all students are respected * Segregate the lab time to individual processes allow for faculty who are specialized in the process. | | |
| **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 | | * No articulation yet explored although looking at potential partnerships with Conestoga College could be considered. New program Welding and Fabrication Technician program allows current WTQ students to continue their training in Welding. * Standardizing the Introductory Welding Course and offering this as a Dual Credit would allow for greater pathway options for high school students. * Considering partnering with Haliburton School of the Arts (e.g. offering a short term welding class to those students, and/or encouraging those students to take the welding program) | | |
| **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) | | Focus group summary as well as Faculty course evaluations would suggest that there will be an overall improvement to KPI scores. KPI report has not yet been released for this year. Last year’s scores included:  **Student and Graduate Satisfaction**  Key performance indicators # 4, 8, 9, and 11 (see **Appendix C** for a description of these).  Section B:  3. Provides you with skills and abilities specific to your chosen career. -15.7  4. Includes topics relevant to your future success. -2.8  5. Has teachers who help you to understand your chosen career.-12.7  6. Develops your writing skills. -4.4  7. Develops your speaking skills. 1.3  8. Develops your ability to solve problems using math techniques. 2.2  9. Develops your ability to work with others. -17.8  10. Develops your ability to solve problems. -19.9  11. Develops your computer skills. 9.4  12. Provides you with opportunities to further your education after graduation. -36.9  13. Provides you with experience that will be useful to your future life outside of work. -17.1  14. OVERALL, your program is giving you knowledge and skills that will be useful in your future career. -17.4  Section C:  15. Teachers' knowledge of their subjects. –5.4  16. Teachers are up-to-date/current in their fields. -14.5  17. Teachers' presentation of the subject material. -23.3  18. Helpfulness of teachers outside of class. -16.8  19. Feedback about your progress. -10.9  20. Quality of classroom learning. -12.1  21. Quality of lab/shop learning. -4.5  22. Quality of other learning experiences.-2.8  23. Field placement, clinical experiences or co-op work terms-16.1  24. Course materials. -7.1  25. Lab/shop facilities and equipment. -22.  26. The OVERALL quality of the learning experiences in this program.-22.5  Section E:  46. The concern of people at this college for your success. -25.2  47. Your overall college experience -10.7   * Coordinators goal is to improve the KPI’s by 3% each year in each of the categories with negative scores. Realistically hoping for significant changes in the all KPI scores with the hiring of a full time champion for the program.   Program Award/Recognition  There are no current awards or other forms of recognition. | | |
| **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 | | * Student Focus Group Summary attached. * Student advisor has indicated that students want more tickets, want a second year, more math throughout as well as blue print, more lab time and applied projects. Students also want to be tested for math at the beginning and would appreciate support being provided at the beginning of the program.   Informally the present students have been polled and the feeling is that half of the present 36 students graduating will be back when and if we introduce the technician program in Fall 2014 | | |
| **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 | | Canadian Occupational Projection System (COPS) rates employment opportunities to 2020 as Fair with 80% of job seekers being school leavers  Construction Sector Council (CSC) predicts growth on a relatively small base at 16% within Central Ontario (112 positions)  Visits with numerous local businesses have also highlighted a strong anticipated need for Welders in the next 3 years   1. Laser welding/cutting is said to be the emerging process for manual and robotic welding. 2. Standards for manufactured steal are changing which require higher skill levels for welders.  * Employers have advised faculty that students are prepared for entry level positions; only previous experience prior to Fleming will increase their marketability. | | |
| **4.2 Other Graduate Destinations**  **Review / discuss:**   * Alternative graduate destinations such as further education, international opportunities, volunteer service, or other experiences | | * Curriculum issues / strengths that have been identified by employers pertaining to graduate job readiness. * In the past employers stated that graduate welders are weak in blueprint reading, fabrication/fitting * Coordinator may consider having an electronic survey placed on Facebook page to find out where graduates are heading. * Suggestions from informal discussions with graduates: More project-based learning. More integration between courses (e.g. blueprint reading, math, and hands-on learning in shop). The community views the program as credible. Having many graduates come through the shop for a weld test. Some of our graduates do not have strong enough skills. Need to maintain high expectation for our students in order to remain credible. | | |
| **5.0 Strategic Positioning** | | **Summary of Key Findings** | | |
| **5.1College 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 | | Careful consideration has been made to ensure that the program moving forward aligns to Fleming’s core promise and strategic plan. Specific alignments include creating additional pathways, increasing enrolment and ensuring that curriculum embeds our commitment to sustainable practices and the use of e-technologies. | | |
| **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 | | Review detailed Competitor Analysis Summary attached. | | |
| **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 | | Fleming currently offers a 30 week program in Welding Techniques. The enrolment data summary reveals a steady enrolment of 42 students over the past five years; however, what is not noted in this data is the new winter intake. Due to the increase in students demand for this program, Fleming has recently launched a January 2013 intake for this program with 22 students currently in semester one. Student focus group summaries included detail the student demand for Fleming College to increase their enrolment at the Certificate level and also support the creation of a Welding and Fabrication Technician program  Recent demographic data gathered by Fleming Data Research between 2008 and 2012 is important information to consider in establishing the learner profile. Of the 44 students who entered the Welding Techniques program in the fall of 2012, 98% of the students were male with 48% being under the age of 20 years old and 55% of the students were from our local catchment area (FDR, 2012). Of the 43 students who entered the Welding Techniques program in the fall of 2008, 81% were male with 44% being between 20-25 years of age with 72 % being from our local catchment area (FDR, 2012). Consistently, the demand for welding training seems to come from our local catchment area, while the majority of students tend to be male, there has been a shift in gender over the past five years. The age of our current students tends to shift from under 20 year old to between 20-25 years old. | | |
| **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 | | * New model has pre and co req. with more specialization students will be able to progress based on learning. * Faculty advisor meets with students at risk earlier on in the program. | | |
| **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 | | Engage alumni through new innovative activities ie. rodeos, skill competition, raising profile of college program  Facebook contact to communicate with students in the program and who have graduated from the program.  Further outreach to employers is critical to sustaining partnerships. | | |
| **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 | | * More community involvement is essential. * Open house all faculty should be involved * Service learning initiatives could be explored. Or volunteer projects for students * Participation in welding events eg. Trade shows, * Use more guest speakers eg. CWB inspector before test * More field trips * Pursue possible awards to be donated by local industry (e.g. welding supplier donating a plaque and cash prize to be awarded to most improved student, etc.) * Social media needs to be embraced by the faculty and the students * Skills trade camps and competitions. | | |
| **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. | | Refer to PAC Minutes | | |
| **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 | | * Need full time hire for new Welding & Fabrication program * Support PD opportunities: Conference: Canadian Welding Society & Educators * Dean will provide summary of current credentials of Faculty teaching in the program. * President and the Dean are currently campaigning for funds to assist with KTTC build and to raise the profile of trades and tech programs.. | | |
| **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 | | KTTC will include a lab capacity of 30 students.  Refer to costing assumption for new program proposal in Welding and Fabrication Technician. Robotics, simulation machines, & CNC  Suggestions:   * The number of welders in fine when everything is running well. However, a few extra welders as back up for use when machines are down, are needed * Three inverter welding units were removed and decommissioned. These were replaced with new machines (which we’re experiencing some difficulty with), however, the older machines could have been kept in service and used as needed. * Lecture room that is equipped to give demonstrations of techniques and processes * We need to come up with a better control system of metal inventory and consumable inventory my recommendation would be a KANBAN system. | | |

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:** | | |
| **Research the possibilities of having a co-op element once we launch the new Welding & Fabrication Technician program** | **Program Coordinator** | **Fall 2014** |
| **Create a Health and Safety Manual for the Welding Shop including safe operating procedures of all equipment.** | **Chair & Dean will create a project plan** | **CBD** |
| **Re-organize the equipment in the lab to ensure compliance with health and safety standards, code requirements as per inventory, manufacturing and safety standards.** | **Health and Safety Group** | **Winter 2014** |
| **Need to have a full-time hire for the launch of new Welding and Fabrication Technician program.**  **Hire more part-time faculty so we have “specialists” in a variety sectors in the welding industry. i.e. Robotics, Aerospace, Inspectors, Quality Control. As well as specialists in specific processes.** | **Dean/HR** | **Fall 2014** |
| **Introduce more processes including robotics, plasma, laser** | **Program coordinator** | **Fall 2014**  **(Technician Program)** |
| **Create a standard Introduction to Welding course that includes an online lecture and in-class lab. This course will be used in all of our trades programs and used for dual credit.**  **(A step towards our “E-Learning strategy)**  **Introduce a standardized Health and Safety course that will be shared with all trades programs in the school** | **Program**  **Coordinator**  **Carpentry Coordinator** | **CBD**  **CBD** |
| **Align the learning outcomes for apprenticeship with the learning outcomes for techniques/technician program. A “blueprint” of the 9 new courses within the program is done, we now need to create outlines, assessment plans and course content for 9 courses at the techniques level over the CBD**  **New curriculum development for nine new courses should include input by all faculty in the program.** | **Program Coordinator/part-time faculty during CBD** | **CBD**  **Implement Fall 2013** |
| **Apply for TDA status to be able to offer additional pathway for apprenticeship** | **Dean** | **Fall 2014** |
| **Introduce Trade Calculation I and II. Need to ensure that we meet the needs of the industry’s requirement of having a grade 12 math equivalence. Dean has agreed to issue a letter outlining that grade 12 curriculum has been covered in the program** | **GAS /Dean** | **CBD**  **Fall2013** |
| **Participate in the KTTC working group to insure that classroom and lab space as well as capital equipment are in line with what the projected program needs are at both the techniques and technician level.** | **Program Coordinator** | **Fall 2014** |
| **Increase all categories of KPI’s by 3 %. If the above recommendations are implemented, KPI goals can be reached** | **Program Coordinator**  **Faculty**  **Chair**  **Dean** | **Fall 2014** |

**Application Summary & Competitor Analysis**

Welding Techniques with MTCU code 44900 (Ontario College Certificate) Welding Engineering Technician with MTCU code 54900 & 54910 Metal Fabrication Technician (Ontario College Diploma) Welding Engineering Technology with MTCU code 64900



Algonquin

Welding & Fabrication Techniques

Algonquin offers a one-year welding and Fabrication Techniques certificate program using a combination of theory and shop work to enable students to develop the skills necessary to work in the welding and fabrication field. The Welding and Fabrication certificate at Algonquin provides hands-on training and supports students in developing skills in Oxy-acetylene Welding, Shielded Metal Arc Welding, Gas Metal Arc Welding, Flux-Core Arc Welding, Gas Tungsten Arc Welding, and Carbon Arc Gouging (CAG) for general fabrication and the relatively new Plasma Arc Gouging.   
  
The Welding and Fabrication Techniques program at Algonquin spreads training over 45 weeks with three consecutive levels of training. Students progressively learn various welding and welding fabrication techniques while also building a strong foundation of essential skills that employers are looking for from their employees in the areas of mathematics, communications and ethics. Qualified students (minimum GPA 3.6 or departmental permission) have the opportunity to participate in a paid cooperative employment placement where invaluable experience into the welding and fabrication industry is gained during the final semester. Algonquin launched their Welding Techniques program in 2011 with 45 students and there was a slight decrease of 2% in enrolment in 2012

Cambrian

Cambrian offers a two year Welding and Fabrication Technician program, students develop the knowledge and skills required to become multi-skilled employees in the fabrication, detailing, and welding of metals. Students follow metal fabrication projects from the engineering drawing stage through cutting and forming processes to the welding and inspection phase. In addition to classroom work, students gain hands-on experience in the College's welding lab. There has been a 6% increase in enrolment between 2008 and 2012; however, important to note is that there has been an increase in enrolment of 70% in the past year.

College Boreal

Welder Fitter and Welding & Fabrication Technician

Boreal offers a 40 week Welder Fitter Technician program as well as a two year diploma in Welding & Fabrication Technician. The college Boreal website advertises that the first two semesters for both of these programs is the same; however, the Welder Fitter program offers the possibility of an apprenticeship program diploma (coop) in the field while the Welding and Fabrication Technician program offers two addition semesters of curriculum and no co-op. Both of these programs prepare students to work in the steel manufacturing and welding industry, as well as in construction, mining, and forestry. The program advertises that upon completion of the program, student can obtain certificates from the Canadian Welding Bureau. There was a 10% increase in enrolment for the Technician level diplomas at Boreal between 2008 and 2012.

Conestoga College

Welding Techniques

Conestoga offers a 30-week Welding Techniques certificate that combines hands-on and theoretical education in the welding field. The program follows the curriculum of the provincial trades Welder (456A) and Metal Fabricator - Fitter (437A) and successful students will be provided the opportunity to challenge provincial exemption exams for Level 1 of the in-school training providing them a head-start into an apprenticeship. This practical education is complemented with courses in Computer Applications, Computer Aided Design (CAD), and Technical Communications. The program provides students with the opportunity to develop welding skills using modern equipment with the common arc welding processes such as Shielded Metal Arc Welding (SMAW or stick), Gas Metal Arc Welding (GMAW or MIG'), Flux Cored Arc Welding (FCAW), and Gas Tungsten Arc Welding (GTAW or TIG')

Upon completion of the program, students graduating with a minimum grade of 70% in all courses are eligible to write the Level 1 apprenticeship exemption exam. Successful completion of these exams will exempt the student from Level 1 of the in school training for the Welder (456A) or the Metal Fabricator-Fitter (437A) apprenticeship trades. Continuing in the post graduate certificate program Pipe and Pressure Systems Welding is also an option. There was a 9% increase in enrolment for Welding Techniques at Conestoga between 2008 and 2012.

Welding & Fabrication Technician

Conestoga also offers a Welding and Fabrication Technician diploma program; students in this program develop the broad base of knowledge and skills required for the layout, preparation, forming, fitting, joining, and the inspection of welded fabrications. Students learn to follow metal fabrication projects from the computer aided engineering drawing (CAD) stage, through the cutting and forming processes of piece parts, to the fitting, welding and inspection of fabrications. Students are provided with the opportunity to use conventional and computer numerical controlled (CNC) fabrication equipment programmed through the use of computer aided manufacturing (CAM) software. Graduates may choose to enter the workforce and seek further apprenticeship training, or they may be eligible to resume their studies with advanced standing by entering Year 2 of one of the following technology programs Manufacturing Engineering Technology - Welding & Robotics or Welding Engineering Technology Inspection (a minimum grade of 70% is required in MATH1455 and MATH1485 is required for this advanced standing). Continuing in the post graduate certificate program Pipe and Pressure Systems Welding is also an option. There was a 1% increase in enrolment for the diploma in Welding and Fabrication Technician at Conestoga between 2009 and 2012.

Welding Engineering Technology – Inspector

Conestoga has recently launched an advanced diploma in Welding Engineering Technology. This is a unique program that emphasizes welding inspection and quality assurance through metallurgical analysis, destructive testing of welds and non-destructive evaluation methods for quality control and assurance. Students will learn to combine theoretical knowledge and practical skills in a variety of operational areas such as selection and application of welding processes, troubleshooting of welding equipment, the operation of welding robotics and automation. Students will also have the opportunity to apply their learning through a co-op paid placement. Students interested in applying for co-op will be required to achieve an overall 80% unweighted average (with no dropped or failed courses) in all Level 1 and 2 program courses. If an applicant has a lower overall average, their application will be decided upon on a case-by-case basis, based on one or more of: course performance, a possible interview, and number of acceptances already granted. There was a 20% decline in enrolment of 5 students to 4 students for the Advanced Diploma in Welding Engineering Technology at Conestoga between 2011 and 2012.

Confederation

Confederation offers a 34-week Welding Techniques program that provides students with a solid foundation in the basics of various welding processes and prepares them for future trends, enabling you to readily transfer this technology to the shop floor. The program combines hands-on training and personalized instruction. There has been a 12% increase in enrolment from 2008-2012.

Durham

Durham offers a two-semester Welding Techniques program which prepares them to enter the workforce in entry-level employment as a welder, fitter or service technician. Durham currently offers an opportunity to pathway training in an apprentice. Durham’s program includes theoretical knowledge and extensive practical hands-on training in all major welding processes. Emphasis is placed on the selection and application of welding processes and the troubleshooting of welding equipment. Students have the opportunity to be Canadian Welding Bureau certified during the program in GMAW(gas metal arc welding), FCAW(flux core arc welding) and SMAW(shielded metal arc welding). Durham launched the Welding Techniques program in 2011 with 34 students and has successfully increased their enrolment by 18% in 2012.

Fanshawe

Fanshawe offers a one-year Welding Techniques program in with two semesters and includes a mandatory work placement. Students are exposed to topics including health and safety, blueprint reading and sketching, applied math, communication, shielded metal arc welding, gas metal arc welding, introduction to computers, and all position pipe welding. The program provides students with the theoretical and practical training to perform most basic welding techniques. At the completion of the program, students will be eligible to test for welding tickets based on their level of expertise. It is expected that most of the graduates will be prepared to enter the workforce as a Welder following the completion of this program. There was a slight increase in enrolment of 4% in between 2008 and 2012 at Fanshawe

Fleming

Fleming currently offers a 30 week program in Welding Techniques. The enrolment data summary reveals a steady enrolment of 42 students over the past five years; however, what is not noted in this data is the new intake this past winter semester. Due to the increase in students demand for this program, Fleming has recently launched a January intake for this program with 22 students currently in semester one. Student focus group summaries included in this proposal detail the student demand for Fleming College to increase their enrolment at the Certificate level and also to be exploring a new proposal at the Technician level. The Welding Techniques program is currently under program review and there will be a number of changes at the Ontario College certificate level to ensure that a clear pathway is in place for students who wish to move into the Welding Engineering Technician program.

Georgian

Georgian offers a 30 week Welding Techniques program that combines theoretical and practical training to perform most basic welding techniques. At the completion of the program, students are eligible to test for welding tickets based on their level of expertise. Students will be exposed to topics including health and safety, blueprint reading and sketching, applied math, communication, shielded metal arc welding, gas metal arc welding, introduction to computers, and all position pipe welding. Georgian College launched their Welding program in 2009 and has experienced a 21% increase in growth in 2012.

Lambton

Lambton has a one-year Welding Techniques program that provides students with the opportunity to learn and practice plate and pipe welding techniques. Students perform welding and metal cutting operations using gas, shielded metal arc welding, metal arc welding, metal inert gas, tungsten inert gas and plasma welding skills. Lambton has a formal transfer agreement for students to pathway from their program to Conestoga’s Welding Engineering Technician program. There has been a 15% increase in enrolment between 2008 and 2012.

Loyalist

Loyalist currently offers a Welding Techniques program and is scheduled to launch a Welding and Fabrication Technician program this coming fall. Students develop the knowledge and skills required to enter into the structure steel fabrication, detailing and welding fields.   Projects are followed from the engineering drawings stage through cutting and forming processes to the completion of the job – along with the inspection quality phase. In the Welding Techniques certificate program students develop the basic skills to enter the welding, fabrication and millwright industry.  It provides the opportunity to fast-track into an apprenticeship with knowledge of welding techniques – such as gas metal arc welding and shielded metal arc welding – welding equipment operation, and skills in blueprint reading and sketching. The new Welding and Fabrication Technician diploma program offers students the opportunity to expand their theoretical and practical skill set. The focus on new and evolving technologies such as CNC machinery and the ability to design in 3D, means graduates will be able to advance their career further and faster. Loyalist launched their certificate in Welding in 2009 and has seen a steady growth of 4% between 2009 and 2012; however, there has been an increase of 36% in enrolment over the past year and with the launch of their diploma current students will have a pathway to move onto.

Mohawk

Mohawk advertises to offers both the apprenticeship pathway and the a Mechanical Techniques in Welding and Fabrication certificate. Program outcomes at the certificate level support the first level of the in-school curriculum for this trade. Enrolment data indicates that Mohawk has not offered the certificate since 2009.

Niagara

Niagara offers both a Welding Techniques and Welding Technician program. The Welding Techniques program prepares students to enter the job market with basic welding skills. Students who choose to pathway into the Technician program are provided with an opportunity to learn more advanced welding skills and are able to work in a number of areas, such as: welding shops, manufacturers of metal products, piping/structural contractors, automotive/aircraft manufacturers, repair and maintenance services, building and construction, railroad and railcar industries, and manufacturers of wind turbine equipment. Enrolment in the Welding Techniques certificate has a significant decline of 19% between 2008 and 2012; however the Welding Technician program was launched in 2010 which likely accounts for the decline in enrolment at the certificate level. Important to note is that Niagara launched their Technician level program with 37 in 2010 and has had a steady intake of 32 over the past two years.

Northern

Northen advertises to offer three distinct pathways for Welding; the Welding Engineering Technician, the Welding Engineering Technologist and an International Certificate in Welding Design. The Welding Engineering Technician program provides graduates with the background in science and technology related to welding that will prepare them to interact with engineers and scientists while maintaining the practical skills necessary to supervise trade personnel. Welding professionals are concerned with all activities related to the design, production, performance and maintenance of welded products. To adequately design a weldment, the welding professional must not only understand the material being joined, but also the effect of welding variables of many welding processes on the final product. To achieve this, lab time is intertwined with a curriculum of metallurgical science and engineering theory. In developing the skills required in becoming a welding inspector, students complement their knowledge of non-destructive examination with a working knowledge of codes, standards and stress analysis. Students graduating from the Welding Engineering Technician program have two options, the first being immediate entry into the work force, the second is to continue their studies for one more year. The third year option allows those graduates, wishing to specialize in welding technology, to receive a greater depth of training and knowledge in welding processes, welding metallurgy, welding physics, failure analysis and welding circuits. While it would appear that Northern has the Technologist level diploma there is currently no enrolment in this advanced diploma.

In addition, the International Welding Design Certificate (IWDC) program prepares graduates for an international career by qualifying them to write the exam for either the International Welding Technologist diploma or the International Welding Engineer diploma, depending on the educational background of the applicant.

Sault

Sault offers a Welding Techniques program that provide students with basic welding skills and the ability to interpret blueprints. As a student, you will learn a variety of techniques and accompanying theory associated with welding ferrous and non - ferrous metals. You will learn to perform various welding and metal cutting techniques, and understand and use a variety of destructive and non destructive methods to test welds. Graduates of this program will be qualified for entry level positions in a variety of sectors in the metal fabrication industry, in both large and small organizations. Students who complete the Welding Techniques program have the option to pathway into the Metal Fabrication Technician.

This Metal Fabrication Technican program provides students with the skills to perform, design and analysis in the production of components in a welding environment. As a student, you will learn to work with ferrous and non-ferrous metals,including plate, tube and structural steel selections, to produce or repair component parts for many types of assemblies and structures made from metal.As well, you will learn to interpret blueprints, create and use patterns and templates using common layout and measuring tools, and understand and use a variety of destructive and non-destructive methods to test welds. Both the certificate and diploma level programs were launched in 2010. Enrolment growth for the Welding Techniques increase by 72% between 2010 and 2012 and for the Metal Fabrication Technician program increased by 46% between 2010 and 2012.

Sheridan

Sheridan offers a Welding Techniques program emphasizing its excellent instructors, superior facilities and strong reputation among employers. The program offers a practical education in the most current welding techniques and theories, preparing students for a welding career.through applied learning opportunities in shielded metal arc welding (SMAW), gas metal arc welding (GMAW) and gas tungsten arc welding (GTAW).Sheridan launched their program in 2009 and has experienced an increase of 75% in enrolment between 2009 and 2012,

St Clair

St Clair offers a Welding Techniques program that provides students with comprehensive theoretical knowledge and extensive practical hands-on skills to find employment for positions such as welder, service technician, inspector or an apprentice in several trades such as welder, boiler maker, pipefitter, steamfitter and sheet metal worker. The enrolment for Welding Techniques program has incrementally increased steadily with 18% growth between 2008 and 2012.

St Lawrence

St Lawrence offers a 36 week Welding and Fabrication Techniques program which provides students with a comprehensive theoretical base and extensive hands-on training in all major welding processes. Program content also prepares the graduate for further technician-level study in this field and meets Welder Level 1 and 2 apprenticeship learning outcomes. Emphasis is placed on the selection and application of welding processes to specific situations, the development of appropriate welding techniques and attention to detail, and the troubleshooting of welding equipment. The opportunity for Canadian Welding Bureau certification is also made available to students who meet program expectations. There does not appear to be any enrolment data for this program at the current time.

St Lawrence offers a two year Welding and Fabrication Technician Co-op Apprenticeship program delivers welding technology at the technician level and prepares students for the demands of the welding industry. This market requires graduates with a higher level of theory combined with the practical skills needed to succeed in an industry with an evolving level of complexity. Graduates of this 2-year program are eligible to receive a Welding & Fabrication Technician Ontario College Diploma. Students are registered with the Ministry of Training, Colleges and Universities as apprentices. They also receive the equivalent of all the in-school training necessary to meet the requirements of the provincially administered welder apprenticeship program. Upon completion of this program and with the additional work experience (on-the-job-training) detailed in the training standards for the welding trade, apprentices are then eligible to challenge the exam for the Certificate of Qualification for the Trade.  There has been a sever decline of 39% in enrolment for this pathway between 2008 and 2010.Students also have the opportunity to challenge the CWB (Canadian Welding Bureau) certification in several different welding processes. This allows graduates to provide employers with proof of CWB certification.

**Welding Program Advisory Committee**

**January 24, 2013**

**McRae Boardroom**

**MINUTES**

**Present:** Hillar Prits, Cimco Manufacturing; Tim Payne, Payne Machine Company Ltd; Paul Paszt, ESCO; Ray Slaney, Retired Faculty; Michael Johnson, General Electric; Michael Worsfold, CWB

**Fleming Staff:** Val Bolsterli, Welding Coordinator; Ronda Monahan, Centre for Learning & Teaching; Ann Drennan, Dean of Technology & Trades

**Recorder:**  Angie Premate, School Operations Officer

|  |  |  |
| --- | --- | --- |
|  | **Key Points / Actions** | **Follow-up / Status** |
| **1.** | **Call to Order/Welcome/Chair’s Remarks**  The Dean welcomed committee members and guests to the meeting and called the meeting to order 9:00 am. |  |
| **2.** | **Agenda was Accepted as Circulated**. |  |
| **3.** | **Conflict of Interest**  None declared |  |
| **4.** | **DECISION ITEMS**  Training Delivery Status for welding was discussed and a request for support was put forward to **committee** members. It was emphasized that the curriculum for the apprenticeship be aligned to the curriculum offered in the Welding Techniques program so that students would be exempted from some of the  in-school requirements for the Welding Apprenticeship.  Michael Johnson Moved, Seconded by Michael Worsfold and unanimous support by  all committee members - Carried  There was a motion to move our current one year Welding Techniques program to a two year program with the second year having a fabrication and fitting component.  Ray Slaney Moved, Seconded by Michael Worsfold with unanimous support by all committee members - Carried  There was a request for letters of support by the Welding Coordinator to accompany  the TDA application. |  |
| **5.** | **PROGRAM-RELATED ACTIVITY**  The committee was provided with an update on current/ongoing activity within the program as follows:   * **Enrolment –**Fall 2012 – 44, January 2013 – 22 A total of 66 students * **Program Effectiveness –** Current program model was discussed with comparison sheets showing the alignment with the apprenticeship program and ministry standards, exceeding in almost all levels. There was review of the current curriculum model, the proposed two year model and the quality assurance related process used to ensure currency of the welding program at the college. * **Labour Market Information –**There is a demand for welders across the country with 6000 jobs currently advertised. All trades continue to grow due to retiring baby boomers requiring 3000 welders. There is a globalization of the welding industry. Labour market trends were discussed. * **Partnership Opportunities –**There was a request put forth for employers to take grad students, understanding the benefits for both the employer and the student. “Experience is important to the employer whether it is paid on non-paid”. Some of the PAC members indicated that they would be willing to partner with Fleming for a Skills Competition. Also members of the PAC indicated that they would be willing to come in to classes as guest speakers. |  |
| **6.** | **INPUT FROM INDUSTRY**  Industry representatives shared their insight regarding the changes that are currently occurring within the Welding sector and the impact/further opportunities being presented for graduates of the program. (E.g. Member indicated that they are looking for competent welders with 5 years structural fitting experience.“We need to work towards international standards”.)The program will respond by ensuring that faculty stay current and curriculum meets program needs and apprenticeship standards. Discussions around ensuring graduates have employment readiness skills and also a discussion about including a capstone project or professional development portfolio. |  |
| **7.** | **COLLEGE UPDATE**  The Kawartha Trades & Technology Centre has broken ground and we are actively looking at our programs, their contents and incorporating e-learning and technology. Our Applied Learning Centre will give students the opportunity to work on projects with a real learning experience. We will be looking for capital donations from industry. |  |
| **8.** | **Next Meeting Date**  The next meeting date was tentatively scheduled as follows: Fall, 2013 (morning) | School Operations Officer will follow-up with members to confirm availability |
| **9.** | **Appointment of PAC Chair**  Paul Paszt nominated by Tim Payne, Seconded Michael Worsfold - Accepted and Carried |  |
| **10.** | **Adjournment** at 12:10 pm |  |

**Welding Focus Group**

**March 15, 2013**

**12-1 pm**

**Focus Group Leader:** Ann Drennan, Dean, School of Trades and Technology

**INTRODUCTORY COMMENTS**

*Thanks for attending. We do this for all programs to see how things are going. I have a number of questions regarding your program and your learning experience. (There were 14 students in attendance)*

***How is it going? Why did you want to do welding?***

It’s fun. There are lots of job opportunities. I like the chance to move around the provinces. I just wanted to do welding. It’s a trade in demand.

**Why Fleming?**

I like Fleming. I took a program here last year and I like it here. I live in Peterborough. The timing was good. It is a small campus and a small school so I thought I could interact with faculty a lot better.

**Before you came, what did you expect of Fleming and your program?**

I was open minded, with no perception. It is similar to high school in some ways. More freedom.

**Have your expectations been met or not?**

It’s similar to what I thought. I came with no expectations. The social aspect is different, it’s not like Brealey. No Tim Hortons, no place to hang out with your friends.

**In your program, tell me what’s working and what’s not?**

The classes are all over the place with 3 hour gaps, and gas is expensive so I can’t drive back and forth. We could have part-time jobs if classes were more compact.

***Ann indicated to the group that there will still be gaps after the move due to classroom availability****.* I don’t want to be sitting in my car. We have Thursdays completely off and we could have had math or blueprints there, so we could keep the information in our heads. We are going 15 weeks without touching some of this information and it is not as fresh in our minds. We should be able to apply this knowledge in our labs also. The order the subjects are taught is key. We need to learn how to use a computer in first semester and then know how to use it to build a resume.

***Val indicated to the group that these changes will happen next year.*** If things are so changed what will this mean for us? ***Val indicated that the changes won’t affect them if they want to migrate into second year.***Will there be a second year next year? ***Val indicated that it won’t happen this September****.* We are kinda painted into a corner then. I am almost 40 years old and I have to get on with things. I don’t want to take a year off and forget everything.

**What do you enjoy the most?**

The shop, but I’m learning a lot in Math. I would like the math more trades related. I like blueprint and the labs.

**What do you think about the course materials?**

They help me learn.

**Can you give me feedback on your learning? Are you getting completed assignments or labs back at the right time?**

We take it up right after class and discuss what we got wrong. All our instructors do this. Everything is good.

**What other skills are you learning other than welding?**

Good communication skills, math, work ethic, leadership skills. ***Ann asked whether they were learning problem solving skills.*** Yes, in math. There are a lot of people here to help you out. We have financial problems. ***Val asked if a machine broke down, would you be able to fix?***Wes has helped us put it back together. He just happened to be there. A troubleshooting class would be good. It would be nice to have a trouble light. ***Val indicated that there is a need to have the lights cleaned.***

**Are you looking forward to graduating?**

I don’t want to leave Fleming. We need to get our foot in the door. We need 2nd year.

**Is there anything else you would like to tell me?**

Belleville has a 2nd year but requires math and communications testing. Will you be doing this? ***Ann responded by saying, that this is not an entry requirement but we do test to see where people are at to identify students who may need support.***

The bookstore will not guarantee to buy our books back. We would like more lab time. It’s fun. It’s what we do. We need to have more practical applications.

**Is there anything else you want to share?**

I’m pretty happy.

**Out of 10, how would you rate the program?**

I would rate it 8 or 9. I don’t like waiting for 2nd year though.

***Closing Comments***

*Thank you all for attending, we appreciate you taking the time to talk. Please take home the leftover pizza and Coke*

**Welding Techniques/Welding & Fabrication Technician (MTCU Code 44900/54900)**

This program has been developed with input from potential employers for graduates. Courses identified in the curriculum model highlighted in red are common course to all of the techniques level programs in semester one and two. Courses highlighted in red in semester three and four are common to the Heating Refrigeration and Air Conditioning, the Carpentry Technician (a program concept that is currently being developed), Electrical Engineering Technician and Instrumentation and Control Technician. Courses identified in the model with an asterisk \* are delivered either entirely online or with a blended format.

The General Education policy is followed with three general education courses in the four semester format including two mandatory courses: Environmental Issues for the Industry and Career Essentials and one that the student may choose from the General Education Elective offerings.

### Course Outline Review Summary Sheet for Block Development Planning For WTQ Fall 2013

**Program Name: Welding Techniques – MTCU Code 44900 Date: March 18th, 2013**

1. There is congruency between the course learning outcomes, and the program standards.
2. There is a match between course learning outcomes, course learning activities and learning methods/assessments.
3. Evaluation methods allow students to demonstrate the course learning outcomes. PLAR opportunities exist and are based on course learning outcomes.
4. Course Material is accessible and in compliance with AODA
5. Apply e-technologies (grey) and/or sustainability (green) in the program.

| **Course Name and Number** | **Criteria (see Course Outline review chart)** | | | | | **Block Development** | **Comments – particular strengths to be recognized or recommendations for changes needing to be made** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **1** | **2** | **3** | **4** | **5** | Yes or No |
| Semester One | | | | | | | |
| NEW Preparing for Welding Processes & Practices (15) | N | N | N | N | N | Val | The course content needs to be refreshed and divided into an online Welding Theory course that will be picked up by all the trades program and then have a Face to Face Welding Fundamentals I course that would be for WTQ students only. Would like to explore technologies for this course. There is a simulator that could possibly be used for this course |
| NEW Welding Processes and Practices (45)  I | N | N | N | N | N | Val | This course was a 150 hour course and is now being divided into four separate and distinct offerings. In an attempt to standardize the Welding process and practices course for all the trades program this new offering need to be created. The content of this course needs to be tightly aligned to the material covered in the online course in Preparing for Welding Processes & Practices. This course will be used in PLM, CNS & HRAC |
| NEW Welding Fundamentals I (30) | N | N | N | N | N | Val | This course content is new and must align with level one of apprenticeship/new program standards |
| NEW- Trade Calculations I | N | N | N | N | N | GAS | This course will be a new course. Move toward having a Trade Calculations I and II so that all techniques level students have the grade 12 equivalency at the end of their program. . PLAR option needs to be identified. This course needs to be the equivalent of Grade 12 math. Consideration needs to be made on whether or not this could be a hybrid. |
| NEW- Prints & Drafting | N | N | N | N | N | Scott | This course needs to be fully developed. Will be created for CNS, PLM, WTQ, & ETQ. Needs to be a basic blueprint reading and will scaffold to other Trade Specific print reading courses. |
| NEW Health & Safety | N | N | N | N | N | Scott | This course needs to be re-developed to cover off the need for all Techniques and Technician level requirements in relation to health and safety. Move from 21 hours to 15 hours and consider making this an online offering aligned with the Applications course which will be Face to Face  Currently the course is supposed to offer four certifications: 15hrs Hoisting & Rigging, 7hrs of Working in Heights, 4hrs of WHMIS, 4hrs of Confined Spaces. Course currently does not have Confined Spaces certification because we do not have a faculty on staff with this certification. Move from 28hr hour offering over seven weeks to a 30hour course offering over 15weeks. Certify faculty in the required certifications. |
| COMM 166– Communications for Skilled Trades | Y | Y | Y | Y | Y | GAS | This course already exists and will be added to WTQ |
| Environmental Issue in Industry GNED 14 | Y | Y | Y | Y | Y | GAS | REPLACE GNED 101 –for GNED 14 Environmental Issues for Industry. Aligns with Sustainability Goals. Can this be offered online or in a blended format? |
| COMP 370 Computer Applications | Y | Y | Y | Y | Y | GAS | Recommendations are to have a clear PLAR option for students with extensive computer experience. Can this be an online offering |
| Semester Two | | | | | | | |
| NEW Applied Blueprint Reading for Welders (45) | N | N | N | N | N | Unknown | This is a completely new offering that permits our students to be able to ladder their learning for Fitter Fabrication. There is no material for this course and there are no assessments currently |
| NEW Welding Fundamentals II 45) | N | N | N | N | N | Val | There is some material that can be used from Metalurgy and Faults; however, this is a new course with new outcomes that needs to be aligned with Welding Fundamentals I |
| NEW Skilled Trades Portfolio Development | N | N | N | N | N | Unknown | Capstone project includes a portfolio that will get introduced in Welding Fundamentals and all courses in the program need to contribute to this portfolio. This course will be shared by other trades and students will learn basic employment readiness and portfolio development. Students will learn to pull together an electronic portfolio |
| NEW- Trade Calculations II | N | N | N | N | N | GAS | This course will be a new course. Move toward having a Trade Calculations I and II so that all techniques level students have the grade 12 equivalency at the end of their program. . PLAR option needs to be identified. This course needs to be the equivalent of Grade 12 math. Consideration needs to be made on whether or not this could be a hybrid. |
| NEW SMAW I (Cutting and Gouging Process) (90) | N | N | N | N | N | Unknown | All three of these offerings need to be developed in collaboration with each other. The material needs to ladder from Welding Processes and Practices. Learning activities need to be aligned with Welding Fundamentals and Applied Blueprint Reading for Welders. These are new courses with new learning outcomes and new assessments. There is currently no material on file. |
| NEW GMAW I (FCAW)(75) | N | N | N | N | N | Val |
| NEW GTAW I (45) | N | N | N | N | N | Val |