**Curriculum Renewal:**

**Analysis and Action Plan Template 2013/14**

| **Program Coordinator:**  | **Val Bolsterli** | **School:** | **STT** |
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| **Program Code:** | **MTCU 44900** | **Date Completed:** | **Winter 2014** |
| **Program Name:**  | **Welding Techniques (WTQ)** |

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| **A. Analysis of Indicators**Note: data is **not** recorded in this section of the template.**Reflect on, and discuss, the following indicators in the context of the curriculum and program:**   |
| 1. **Industry / Sector Trends**
	1. Are there new or emergent *industry or sector* related issues and trends identified over the past year and their potential impact on the program?

There is an ongoing need for pressure welder/fitters and fabricators. Nuclear power plants, ship building in the West, Alberta/BC mining and pipelines are examples of industries requiring welding/fabrication.An emergent trend is the use of laser welding in manufacturing processes for its advantages over other types of welds. They currently use laser welding for international space station additions/repairs. * 1. What are the Advisory Committee recommendations from the past year that will affect the positioning, nature, or scope of the program?

Recent PAC recognized the lack of Math skills and problem solving skills needed for fitters/fabrication.* 1. What information / observations have been generated via faculty and staff professional development, engagement in sectoral and profession associations, and involvement in community and employer networks connected to the field?

CWB conference in 2013: networking critical; made connections with Conestoga; this conference drove many decisions made during program review (2013).CWA: Fleming can space on this website to summarize the WTQ (and future WDT) program.There is a recognized need to include a statement on the physical demands of WTQ students. * 1. Are there new or changing employment trends in the industry or sector?

Ongoing need for fabricators (see section 1.1). Also, as baby boomers retire there will be a decline in the skill set provided by these older workers. * 1. What are the curriculum issues / strengths that have been identified by employers pertaining to graduate job readiness?

Students lack Math and fabrication skills; limited knowledge pertaining to manufacturing processes.Students have no experience using AUTOCAD but it is needed for fabrication and would be useful for applied projects.  |
| **2. Curriculum Development*** 1. Have there been any curriculum changes in the last year such as changes in course content and course materials, course / program outcomes, innovative delivery approaches, assessment practices, applied learning experiences, e-learning / blended learning? If yes, please provide details.

Fall 2013 was the launch of the new WTQ curriculum that is also the first of two years for new WFT technician diploma program. The new WTQ curriculum aligns with MTCU program standards and apprenticeship outcomes for Welder, Level I.MECH 253 - Preparing for Welding Processes and Practices is a 15-hour on-line course that is included in the new curriculum. CNST159 – Health and Safety Theory Applications is a hybrid/blended course that WTQ students also take.WTQ students experience applied learning in labs and through a new applied project in second semester (see section 3.3).* 1. Does the current curriculum align with the college’s e-learning strategy which strives to have all Fleming graduates experience e-learning in each semester of their program?

Students take MECH 253 and CNST in first semester so are exposed to a blended and completely on-line learning experience. All courses make good use of D2L for communications, assessments, etc. * 1. Are there any recent or anticipated initiatives that promote student pathways including dual credits, partnerships with high schools, program laddering, and university transfer / articulations, continuing education?

WTQ courses also run as dual credits (e.g., MECH 253, 254) and give students an opportunity to receive transfer credit if they come to Fleming. Students can also pathway into the technician level program (WFT) once they complete the WTQ certificate.* 1. Are there any new competitor programs and/or re-positioning of existing programs?

Under the MCTU title “Welding Techniques” and MTCU code 44900, there are two new programs that launched in Sept. 2013. One is a French program at Boreal and the other is a new “Welding and Fabrication Techniques” program at St. Lawrence.* 1. Are there any new or changing provincial standards, standards for accreditation, credentials, and / or industry or sector certifications over the past year?

Reiterated from last CR document: “Globalization of Industries is forcing Canada to potentially have a national accreditation for welders which involves the possibility of having a mandatory Apprenticeship, so as to gain recognition with the IIW.”* 1. What is the progress made from the last curriculum renewal initiative?

The new WTQ curriculum was largely developed at the same time it was delivered to students. Significant CBD time should be spent on collecting course binders and making revisions to curriculum as needed changes are flagged by the teaching team. No curriculum for WFT (second year) technician has been developed yet. |

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| **3. Applied Learning*** 1. Does the current program contain a discrete Applied Learning opportunity for students? If yes, which category of Applied Learning is fulfilled?

\_\_\_ Field Work (Indirect Supervision)\_\_\_ Field Work (Direct Supervision)\_\_\_ Co-op\_X\_ Applied Project / Applied Research ProjectGMAW I (MECH260) and Applied Blueprint reading for welders (CNST162) has an applied project shared between the two courses. * 1. In the 2013/14 academic year, Fleming College will ask all programs with Applied Learning opportunities to align to an agreed upon framework. To confirm program alignment, please complete the appropriate Applied Learning Framework Checklist and attach it to this document. After completing the checklist, please answer the following: Is the program in alignment with the Applied Learning Framework? If no, what are the strategies in place to bring the program into alignment?

WTQ is in alignment and there is also ample opportunity for applied learning experiences through hands-on labs. * 1. If the answer to 3.1 is no, are there plans to create a discrete Applied Learning opportunity for students within this program? Why or why not?

A Co-op stream would be a possible option for the WFT diploma program in the future.  |
| **3. Student and Graduate Satisfaction**3.1 Key performance indicators # 4, 8, 9, and 11 (see **Appendix of Curriculum Guide** for a description of these).WTQ KPI analysis for 2013 Reporting Year

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|  KPI Indicator | Benchmark Gap |
| KPI#4: Graduate Satisfaction, Learning Outcomes  | -8.40 |
| KPI#8: Student Satisfaction, Learning Experience  | -9.92 |
| KPI#9: Student Satisfaction, Teachers | -8.18 |
| KPI#11: Graduate Satisfaction, Program  | -7.34 |

*BENCHMARK GAP is Program Difference minus the College Difference. If the Benchmark Gap is positive, Fleming's program difference is above the college difference and the program does not have to increase its performance on this KPI. If the Benchmark Gap is negative, Fleming's program difference is below the college difference and the program needs to increase its performance on this KPI by the value of the Benchmark gap.*3.2 Review and discuss student retention on a semester by semester basis over the past year.38 students in Sem 1 to 27 students in Sem 2; 8 students on academic progression that can repeat courses in Sem 1 of winter 2014.  |
| **B. Curriculum Strengths and Challenges** Summarize the curriculum strengths and challenges identified by the team.  |
| ***(update as appropriate based on discussions with teaching team)*****Strengths:*** Curriculum aligns with bothMTCU program standardsand Level I apprenticeship outcomes
* Full-time program coordinator to oversee program and communicate with contract faculty teaching team
* Year one WTQ program ladders into year two WFT diploma program

**Challenges:*** Curriculum is being developed “on the fly” , sometimes by developers with weak computer skills, little e-learning expertise or teaching experience
* Curriculum needs to be developed for entire second year WFT diploma program
* Teaching team changes from term to term with late contract hires for both delivery and development of curriculum
* Move over to the KTTC will presents its own set of unique challenges
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| **C. Action Plan**Identify priority actions for the next year and the rationale for their inclusion. For each, indicate the project lead, and the proposed timelines for completion. **What resources are required to complete the action plan, i.e., software, equipment, and training?**  |
|  ***(update as appropriate based on discussions with teaching team)**** **course binders (hard copy or electronic) for all WTQ curriculum; to review and revise and to have teaching material to pass on to contract faculty**
* **review of first year WTQ curriculum; revisions to current assessments, creation of multiple choice questions for D2L quizzes, addition of e-learning resources; increased use of D2L; assess AODA compliance for all course materials**
* **investigate and lead discussions re: MATH131 offered as a program elective (i.e., not mandatory) for students who wish to enter the WFT in year 2.**
* **development of second year WFT courses**
* **Generate a “roadmap” to align second year curriculum and learning outcomes to MTCU standards and Level II and III apprenticeship outcomes**
* **revision of fleming program description of WTQ to include a statement re: physical demands of program (similar to paramedic program wording)**
* **Investigate the possibility that KTTC could be used as a training facility for laser welding skills (see section 1.1)**
* **Add Fleming College to the list of welding institutions in Canada (other college are listed):**

[**http://www.cwa-acs.org/welding-institutions#ON**](http://www.cwa-acs.org/welding-institutions#ON)* **Confirm with operations re: the pathway from WTQ to WFT; Do WTQ students need to apply to OCAS or do they do an internal program switch to WFT?**
* **Work with IT/Admin. to make sure that AUTOCAD is installed in computer labs and workshops (if applicable) in KTTC; AUTCAD on faculty computers to generate assessments and make teaching materials look more professional.**
* **Equipment training for CNC (computerized numerical control) robotics in KTTC; Train the trainer approach but oversee that as many faculty/techs as possible get trained on new equipment**
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| **D. Deferred Actions**Record any issues that will need to bemonitored, researched, or deferred for future action. |
| ***(update as appropriate based on discussions with teaching team)****
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| **E. Attach an updated Program Curriculum Map to your report**  |
| Please file an updated Program Curriculum Map in folder named Program Curriculum Map.: **S:\shared data\CLT\School Name\Program Name\Program Curriculum Map** |