**Curriculum Renewal:**

**Analysis and Action Plan Template 2014/15**

| **Program Coordinator:**  | **Ken MacDonnell** | **School:** | **SENRS** |
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| **Program Code:** | **AWS** | **Date Completed:** | **June 12, 2015** |
| **Program Name:**  | **Advanced Water Systems Operations and Management Co-op** |

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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. Identify any new or emergent *industry or sector* related issues and trends over the past year that will impact your program?
* ***The demand for Water/Wastewater operators is expected to remain strong over the next 3- 5 years as the industry is expected to see a significant reduction in the number of certified operators due to retirement***
* ***AWSOM remains unique in that it is a post graduate certificate program as well as provides the students with a managerial perspective. The graduates of this course should have opportunities to progress into management roles***
	1. What are the Advisory Committee recommendations from the past year that will affect the positioning, nature, or scope of your program?
* ***Incorporate a real project from a water or wastewater treatment plant for the students to work on such as polymer trials or energy optimization***
* ***Increase the hands on component of the course***
* ***Develop a “job shadowing” component in the second semester where students can follow an operator for a day, using various plants within the region. This will give students specific experience on plant operation and using plant SCADA systems***
	1. What information / observations have been generated via faculty and staff professional development, engagement in sectoral and profession associations, or involvement in community and employer networks connected to the field?
* ***Have met with several industrial personnel regarding SCADA systems including Dave Stogios from Rockwell and Karen Cellucci from WSP. We are trying to bring forward and economical and relevant SCADA experience to the students. We will schedule a follow up meeting in late June.***
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| **2. Curriculum Development*** 1. Identify any curriculum changes in the last year such as changes in course content and course materials, course / program outcomes, innovative delivery approaches, and/or assessment practices.

 * ***We had 2- one week modules last year (Module 1- Human Populations and the Water Cycle and Module 5- Watersheds- Impacts and Mitigations). The short one week time frame made it difficult for fair grade assessment for the students. Furthermore, the topic are similar in nature so we are combining the modules into a single- two week module called- Human Populations, Water, and the Environment. The AWSOM program will consist of 10 modules (24 weeks) during the academic portion.***
* ***The co-op portion was initially set for 12 weeks starting essentially the first of April with a completion date before the end of June. This presented a couple of problems in that many employers were not ready for hires this early and the student was finished before summer, when needed the most). Therefore we are starting the co-op work experience in late April or early May and will run through the summer with a co-op field summit to take place in late August. For a January intake of students, the co-op work term will run from late August to mid-December, with the co-op field summit before the end of the college’s normal fall semester.***
	1. Does the current curriculum align with the college’s e-learning strategy which strives to have all Fleming graduates experience technology enhanced learning in each semester of their program? Identify courses where possible.
* ***Course learning materials are placed on D2L. Presently, there is no blended delivery occurring in the program.***
	1. Does the current curriculum align with the College’s Strategic Plan to *“infuse sustainability across the curriculum and across the student experience so that graduates understand and address sustainability issues.” (Goal 3.3)* Please identify which courses/experiences in the students’ program that sustainability issues are addressed.
* ***Module 1 (Human Populations, Water, and the Environment), Module 9 (Advanced Operations), and Module 10 (Innovations in Water/Wastewater Management) include topics that promotes or addresses sustainability issues.***
	1. Identify any recent or anticipated initiatives that promote student pathways including partnerships with high schools, program laddering, university transfer / articulations, or continuing education?
* ***A pathway has been created to allow Water Operations Fundamentals (WOF) graduates to enter the AWS program. The graduates of this certificate, along with their engineering degree will have obtained the minimum admission requirements for entry into the Fleming College Advanced Water Systems Operation Management (AWS) Ontario College Graduate Certificate program with the proviso that these graduates also meet the overall accepted minimum English language competency test scores of IELTS: 6.0, with no bands less than 5.5 or its equivalent. Graduates of the program will be granted equivalencies for four AWS courses: ENVR89 (which now includes ENVR93), ENVR90 and ENVR91.***
	1. Identify any new competitor programs and/or re-positioning of existing programs?
* ***None at the Graduate Certificate level.***
	1. Identify if there are any new or changing provincial standards, standards for accreditation, credentials, and / or industry or sector certifications over the past year?

 * ***None.***
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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)\_**X**\_ Co-op\_\_\_ Applied Project / Applied Research Project * 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?
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| **4. Student and Graduate Satisfaction**4.1 Comment upon this year’s Key performance indicators (KPI # 4, 8, 9, and 11) regarding student and graduate satisfaction (\*reference Fleming Data Research website)* ***This is a new program and does not have published KPI’s as of yet.***

4.2 Review and discuss student retention on a semester by semester basis over the past year.* ***This is a new program and does not have published retention rates as of yet.***
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| **B. Curriculum Strengths and Challenges** Summarize the curriculum strengths and challenges identified by the team.  |
| **Strengths*** ***Uniquely positioned as a Post-Grad Certificate program***
* ***Co-operative work experience***
* ***Development of management skills such as project management***
* ***Small class sizes***
* ***Field Trips to allow students to witness how theory delivered in the classroom is practiced in the field***

**Challenges*** ***Improving our “hands on” learning experiences (labs) especially for the Infrastructure Management module***
* ***Implementing or developing a SCADA system for the students to become familiar with the program***
* ***Locating a suitable field trip for the Industrial Wastewater Module***
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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?**  |
| * ***SCADA system – Ken M. will work with Karen Cellucci from WSP Consulting to bring forward an inexpensive SCADA system for the students. Goal is to have the system by mid-January, 2016***
* ***Ken M. will work with Skills Trade team in Peterborough (Brealey) campus to incorporate additional labs in the fall semester (currently have two Instrumentation labs)***
* ***Ken M. will contact AreclorMittal (formerly Dofasco) in Hamilton to arrange for a field trip for next March.***
* ***Ken M. will determine which modules would be suitable for blended delivery.***
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| **D. Deferred Actions**Record any issues that will need to bemonitored, researched, or deferred for future action. |
| * ***none***
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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** |