

## MEMORANDUM

**TO:** Ms Karen Roche  
Secretary of Senate

**FROM:** Dr. Rhonda Koster  
Chair, Senate Undergraduate Studies Committee

**SUBJECT:** Report of Senate Undergraduate Studies Committee-Part 1

**DATE:** 13 April 2010

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### **PART 1 – ARTICULATION AGREEMENT – INTEGRATED CONFEDERATION COLLEGE ENVIRONMENTAL TECHNICIAN DIPLOMA WITH LAKEHEAD UNIVERSITY HBSC (WATER RESOURCE SCIENCE) WITH SPECIALIZATION IN APPLIED ENVIRONMENTAL MANAGEMENT DEGREE**

The Senate Undergraduate Studies Committee met on March 19 and 26 to review a proposed new articulation agreement between Confederation College and Lakehead University regarding the integrated Environmental Technician Diploma and the HBSc (Water Resource Science Major) with Specialization in Applied Environmental Management degree program as well as a four-year non-direct entry BSc (Water Resource Science Major) with Specialization in Applied Environmental Management degree (attached). The Committee recommends the articulation agreement be approved.

RK/ma

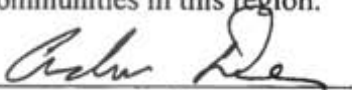


Dr. Rhonda Koster, Chair

# OBJECTIVES

## Lakehead University Water Resource Science Program, Applied Environmental Water Management

Lakehead University acknowledges the necessity of trying to instill environmental awareness in its students. This is an important objective in helping to inform citizens and a key component in the current Academic Plan. However, along with the general goal of promoting environmental awareness specific programs must exist for students who want to specialize in aspects of the environment. Water Resource Science was implemented as such a program. The proposed Applied Environmental Water Management stream of Water Resource Science is designed to acquaint students with the scientific principles governing how natural systems operate and the remediation and management of such systems. This is a critical outcome of the Water Resource Science program. In addition the proposed Applied Environmental Water Management stream supplies students with practical knowledge of environmental regulations and procedures related to water purification and treatment and water discharge into the natural environment. These, plus other practical aspects of natural and manmade water system management are covered during the second year of the program, which the students spend at Confederation College. The student's first year of the four year Honours program is spent at Lakehead University where they learn basic scientific concepts. During the second year at Confederation College they apply these concepts using state-of -the-art equipment, including a computer controlled functioning scaled-down version of Thunder Bay's water treatment facility; they learn field sampling and data collection techniques, with the equipment they may be expected to operate after graduation; and they are made aware of environmental law and regulations. The students return to Lakehead University in years three and four to take the same upper level science courses as the other Water Resource Science students. This includes a comprehensive scientific study undertaken in fourth year as the student's Honours thesis. Upon successfully completing this program the student will receive an Honours Bachelor's degree in Water Resource Science from Lakehead University, an Environmental Technician Diploma from Confederation College and their Water and Wastewater Operator in Training Certification plus their Entry-Level Drinking Water Operator Ontario Provincial Certification. But, more importantly, the combination of training that students will receive in the diploma and degree programs will provide them, upon graduation, with an excellent background in both the practical and theoretical aspects of environmental management and remediation. This type of background is especially needed in the water issues surrounding the more northerly communities in this region.



Dr. Andrew P. Dean



Dr. Philip Fralick

*A proposal for an Integrated "Applied" degree between Lakehead University and Confederation College:*

**HBSc (Water Resource Science Major) Specialization in Applied Environmental Water Management**

**NAME & FOCUS**

1. This would be an "applied stream" of the Water Resource Science (honours) degree.
2. This new stream within the current HBSc (Water Resource Science Major) would be called the "Applied Environmental Water Management" stream. There would be a four year non-hours (non-entry) degree as a fall back for students unable to complete the required honours conditions.

**OVERVIEW**

Students would apply and be accepted into the Integrated Degree in Applied Water Resource Science program at Lakehead University; upon acceptance, they would register at Lakehead University in the first year of the program. Students would take the first year at Lakehead University, second year at Confederation College, and third & fourth years at Lakehead University.

Upon successful completion of the fourth year of study, students would be awarded an HBSc (Water Resource Science Major) Specialization Applied Environmental Water Management from Lakehead University and the Environmental Technician Diploma (Integrated) from Confederation College.

Students would be able to obtain the following certifications from the College as they complete either the second year or the program, depending upon the certification. An additional fee for certification may be required:

- Water and Wastewater Operator in Training (OIT) Certification
- Entry-Level Drinking Water Operator Ontario Provincial Certification (also available through the Walkerton Clean Water Centre as a separate course, fees are applicable.)
- Standard (two-day) First Aid with CPR Certificate

## **CURRICULUM**

### **First Year (Lakehead University)**

- GEOG 1120 Environmental Issues: A Geographical Approach
- CHEM 1110 Modern Chemistry I and Chemistry 1130 Modern Chemistry II
- BIOL 1110 Plant Biology and Biology 1130 Animal Biology
- GEOL1111 Planet Earth with Lab and Geology 1131 Crust of the Earth with Lab
- FORE1010 Dendrology I: Tree Identification
- GEOG2211 Map and Air Photo Interpretation
- WATE1094 (Field School) Non Credit course, fees applicable

### **Second Year (Confederation College)**

#### **Semester 3 – Fall**

E1320 Fall Field School  
(Fee associated, included in tuition)  
E1321 Hydrogeology  
E1322 Hydraulics  
E1323 Water Quality  
E1326 Waste Management  
E1423 Environmental Audits  
E1425 Advanced Environmental  
Chemistry  
FW413 Supervisory Skills & Conflict  
Resolution

#### **Semester 4 – Winter**

E1324 Water & Wastewater Treatment  
E1421 Environmental Regulations  
E1422 Environmental Ethics & Society  
E1424 Industrial Environmental  
Technology  
NR427 Introductory Statistics for  
Environmental Applications  
GE059 People & the Forest  
NR213 Geographical Information  
Systems I &/or CD110 Computer Aided  
Drafting

### **Recommended Second Year Summer Placement through Confederation College:**

E1351 Co-op Work Placement (additional fees)

### **Third Year (Lakehead University)**

- BIOL 2210 Introductory Ecology
- 1.0 full course equivalent (FCE) from Biology lists from years 2,3, and 4 of the Water Resource Science degree
- BIOL 2110 Forest Soils 1
- GEOL 2214 Sediments and Sedimentary Rocks
- GEOL3410 Depositional Environments
- GEOG 2251 Geographical Inquiry and Interpretation
- GEOG3411 Resource Management
- 1FCE from the Geography course lists from year 2, 3, and 4 of the Water Resource Science degree

#### **Fourth Year (Lakehead University)**

- 1FCE from the third or fourth year list of Biology courses in the Water Resource Science Degree
- GEOG 4411 Water Resource Management
- WATE 4630 Water Resource Science Seminar
- 0.5 FCE from the third and fourth year list of Geography courses in the Water Resource Science Degree
- GEOL 4011 Environmental Geochemistry
- GEOL 4137 Groundwater
- GEOL 3311 Environmental Geology
- WATE 4101 Honours thesis or 1 FCE elective if honours degree not pursued.

#### **Admission Requirements**

Same as for the HSc (Water Resource Science Major) Degree

#### **Progression Requirements**

Minimum of 60% from Lakehead University to Confederation College

Minimum of 70% from Confederation College to Lakehead University

#### **Transfer to another program**

If at anytime after returning from the College a student wishes to transfer to a different program than Water Resource Science, transfer credit from the completed credits at the college will be evaluated on a case by case basis. The diploma from the college will only be awarded if the Applied Water Resource Science degree is completed.

#### **REGISTRATION PROTOCOL**

1. Students would apply and be accepted into the Integrated Degree in Applied Water Resource Science program at Lakehead University; upon acceptance, they would register at Lakehead University in the first year of the program in a 5 FCE credit course; this becomes a "placeholder" course, similar to when a student exchange is made between institutions.
2. Upon successful completion of their first year (minimum 60% overall average), the students would apply internally to Confederation College for the second year of the Environmental Technician Program.
3. Upon successful completion of the second year (minimum 70 % overall average), they would be re-admitted back into the third year of the program at Lakehead University. Upon successful completion of the fourth year of study, students would be awarded an HSc (Water Resource Science Major, Applied

Environmental Water Management Stream) from Lakehead University and the Environmental Technician Diploma from Confederation College.

4. At the end of the Winter Semester in first year a list of students qualifying for the second year of the program will be sent to the College from the University; similarly, a list of students qualifying for the third year of the program will be sent to the University from the College.
5. A recommended co-op option is administered by Confederation College. This would normally be done in the summer after the second year of the program, but could be done at other times if necessary. Not all co-op placements provide a wage or salary to the student. There are compulsory co-op fees at the College for those who participate.

### **Student Registration Status and Revenue & Reporting**

1. While attending second year at the College, the student:
  - would not be eligible for University Scholarships, but would be eligible for College scholarships and bursaries. For scholarship renewal or in-progress scholarships, the students' performance in year 1 would determine their eligibility for the scholarship in year 3;
  - would become a student of the College and pay College Tuition;
  - would pay ancillary fees to the College;
  - would apply for OSAP through the College.
2. No grades would be transferred between the College and the University, simply confirmation of minimum grade attainment. The student would receive a 5 full course equivalent (FCE) transfer block upon successful completion of courses at the College.

### **ACCESS and RETENTION PROTOCOL**

1. Admission requirements would be the same as for the HBSc (Water Resources Science Major) Degree.
2. Students would be able to complete the joint degree/diploma part-time, but they must complete the first two years of the program before continuing on to the third.
3. Students wait-listed for the program at the University would be encouraged to choose electives that would allow them to continue on to the second year of the program, should a spot open up.

4. This program will have limited enrolment due to restricted space in the teaching labs at Confederation College; maximum enrolment will initially be 10 students per year.
5. If necessary, Lakehead University would provide stipends for a maximum of two additional sections of courses with a laboratory component at Confederation College should space be an issue. Alternatively, a ranking of students admitted into the second year of the program could be used.
6. Students in the Program would meet with College faculty at the beginning of the winter semester of the first year. A package with information about college scholarships & bursaries, the internal application form, field school expectation, college residence and student finances will be available for them at that meeting.
7. Alternative program pathways for students who do not meet the required overall grade averages will be discussed on a case-by-case basis.
8. A link between the College and University relevant websites will be made for the program.

Faculty and staff involved in the program from both institutions should meet, together with their respective Deans, at least once a year to review the progress of the program.

This agreement is in effect for five years from the date of signing and will be reviewed in its final year.

*For Lakehead University*

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Dr. Frederick Gilbert, President and Vice-Chancellor

DATE

*For Confederation College*

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Patricia Lang, President

DATE