Co-operative Education
Information for Employers

FANSHAWE

Environmental Technology

A Three-Year Ontario College
Co-operative Education Endorsed Diploma

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The Program

This three-year program provides students with a general knowledge of the concepts of air, water and waste management. In particular, the program emphasizes in-depth training in the principles and procedures of measurement and analysis techniques and legislation for air, water and waste.

The Content

Students study theory and perform experiments in a variety of science focused disciplines. The emphasis across the broad program is on acquiring "hands-on" or applied skills in air and water quality management as well as air, waste and wastewater analysis.

The Outcomes

This is a co-op education program providing integration of related paid work experience with classroom theory during the three years of the program so the students graduate with relevant work experience.
Employment opportunities exist with provincial and federal government regulatory agencies, environmental consultants, industry, pollution measurement control, equipment manufacturers, technical sales, and public/private research enterprises.

Sample Co-op Progression Chart:

September Intake Only			
	Sep-Dec	**Jan-Apr**	**May-Aug**
Year 1	Acad. 1	Acad. 2	Acad. 3
Year 2	Work 1	Acad. 4	Work 2
Year 3	Acad. 5	Work 3	Work 4
Year 4	Acad. 6		

Learning Outcomes

- Work as a technologist in consulting, industrial support, quality control, research and development, air, water biology or chemistry laboratory
- Work as a technologist having completed the equivalent to the generic WHMIS training and understand the nature and intent of the Occupational Health & Safety Act
- Understand the nature and intent of Government legislation including air and water pollution as well as waste disposal regulations
- Set up and calibration of equipment for sampling/collection of representative samples of air, soils, solids and water
- Process the samples with attention to sample identification, preservation, storage, handling and shipping. Follow the applicable test methods and procedures
- Perform experiments using instrumentation techniques and apply statistical analyses to the results
    - Students have practical experience in the operation of infrared, ultraviolet/visible and atomic absorption spectrophotometer, gas and liquid chromatographs.
    - Their statistical analyses include probability distributions, sample distributions and hypothesis testing
- Modify and/or prepare laboratory equipment for specialized tasks
- Prepare formal reports using appropriate software
- Develop and apply problem solving skills at all stages of an investigation
- Recognize, evaluate and control workplace hazards through direct action. Make recommendations for engineering and administrative controls as well as personal protective devices

Course Outline

For the official Degree Audit, please see Registrar's Office

Level 1 – Take all of the following Mandatory Courses

BIOL-1016	Cytology
CHEM-1003	General Chemistry I
WRIT-1039	Reason & Writing I - Technology
MATH-1172	Mathematics I
ENVR-1014	Environmental & Science Issues
SKLS-1020	Fundamentals of Science

Level 2 – Take all of the following Mandatory Courses

Gen Ed – Take a 3 credit Gen. Ed. elective course

BIOL-3001	Microbiology I - Bacteriology
CHEM-1012	General Chemistry II
MATH-3062	Mathematics II
PHYS-1001	Physics
COOP-1020	Co-op Ed Employment Prep

Level 3 – Take all of the following Mandatory Courses

CHEM-3003	Analytical Chemistry
ENVR-3001	Water Quality Management I
ENVR-3010	Water Distribution & Treatment
MATH-3030	Statistics
GEOL-3001	Hydrogeology

Level 4 – Take all of the following Mandatory Courses

Gen Ed – Take a 3 credit Gen. Ed. elective course

ENVR-3009	Water Quality Management II
CHEM-3002	Organic Chemistry I
CHEM-3004	Instrumental Methods of Analysis I
PHYS-3003	Thermodynamics & Optics
MATH-1173	Calculus I

Level 5 – Take all of the following Mandatory Courses

Gen Ed – Take a 3 credit Gen. Ed. elective course

CHEM-5001	Organic Chemistry II
ENVR-3014	Air Pollution Meteorology
ENVR-3015	Air Quality Sampling & Evaluation
ENVR-5003	Water Sampling & Evaluation Laboratory
MATH-5017	Calculus II

Level 6 – Take all of the following Mandatory Courses

CHEM-5005	Instrumental Methods of Analysis II
ENVR-5005	Industrial Hygiene
ENVR-5006	Air Sampling & Evaluation Lab II
ENVR-5007	Air Pollution Meteor. Lab
ENVR-5008	Topics in Waste Management
COMM-3005	Language & Communication Skills III

Program Requirements:

- Take three 3-credit General Education Elective Courses
- Program Residency

Students must complete a minimum of 32 credits in this program at Fanshawe College to meet the Program Residency requirement and graduate from this program.

Why Should You Hire a Co-operative Education Student?

Many employers feel today's graduates have no concept of the "real" world of work; we are providing this experience in Co-operative Education. Any job that gives the student related background in your business would be suitable.

Eligible employers can claim a tax credit for each qualifying work placement for up to $3000.

Co-operative Education students are ultimately looking ahead to careers in businesses such as yours. For this reason they are not expecting to simply put in time on the job, but are eager to get involved and make a worthwhile contribution. Participation in co-operative education also gives the employer the opportunity to try out a student's capabilities without obligation or commitment to permanent employment.

This work oriented educational system integrates classroom study and paid, on-the-job work experience, by alternating periods in College with periods of employment by co-operating organizations. The work terms are spaced out through the academic program and students will be at various academic levels in successive work terms. The working experience will ideally increase in difficulty and responsibility as the student progresses academically. However, the College realizes it is often difficult in practice to do this.

It is essential that the work experience be a normal one; that the student be treated like a regular company employee so that a realistic picture of the working environment in that field may be obtained. Perhaps most important is what students gain from the working experience: an attitude for success and the ability to get along with co-workers at all levels.