

## **Guidelines for Continuing Education Unit Evaluation and Credit**

Manitoba's [Water and Wastewater Facility Operators Regulation](#) (Regulation) requires operators to have completed post-secondary education to be eligible for Class 3 and Class 4 certification.

The proposed amendment to the Regulation, however, would allow substitution of post-secondary education with Continuing Education Units (CEU) for water treatment, water distribution, wastewater treatment and wastewater collection. The Regulation also allows substitution of the high school education requirements with CEU.

Continuing Education Unit (CEU) will be required for renewal of unrestricted operator certificate every 5 years. Effective January 1, 2015, operators will need at least 6.0 CEU for certificate renewals every 5 years. Operators who hold a certificate in multiple categories must meet CEU requirements for both or all categories (i.e. combination of training courses in both or all categories) for a total of at least 6.0 CEU. Operators who hold Small System certification need at least 3.0 CEU for certificate renewals every 5 years.

### **Continuing Education Unit**

For the purposes of the operator certification criteria, one CEU represents 10 contact-hours of participation in an organized continuing education experience under the capable direction of qualified instructors or otherwise presented in a manner approved by the Director. CEU courses are offered by a variety of providers. To be used towards certification, the subject must be "water or wastewater works operations, engineering, science, or a related field."

Forty-five (45) CEU is equivalent to 1 grade of high school level achievement or 1 year of post-secondary education.

The Regulation defines contact-hour as one hour of two-way communication and interaction between a learner and an instructor in order for the learner to gain knowledge and to receive feedback.

### **Post Secondary Education**

The Regulation requires 2 years of post-secondary education for Class 3 certification and 4 years of post-secondary education for Class 4 certification. Substitutions of post-secondary education with Direct Responsible Charge (DRC) experience or CEU are permitted for all categories: water treatment, water distribution, wastewater treatment and wastewater collection. Fifty percent (50%) of the required post-secondary education could be substituted.

The Regulation defines operating experience as the time spent working at a facility in satisfactory performance of operating duties as approved by the Director.

"Direct responsible charge" or DRC operating experience is experience during which an operator has worked a position that the facility owner has designated as a DRC position. An operator working a DRC position would be working in some sort of supervisory capacity. There may be several DRC positions designated by the owner of the facility. A shift worked by a single operator would be designated as a DRC position, as the operator would be acting in a responsible capacity.

DRC operating experience can only be gained by an operator with a Class 2, 3, or 4 operator certificate through responsibility for the performance or supervision of daily on-site operational duties for a Class 2, Class 3 or Class 4 facility, or an operating shift in such a

facility.

Operators must complete and pass the credit hour courses in order for them to be considered towards certification. The Certification Program reviews applicant operators' post-high school education to determine whether it qualifies as "water or wastewater works operations, engineering, science, or a related field." This means that it must be science- or math-based rather than arts- or humanities-based. Due to the differences between programs offered at college and university programs, the number of credit hours needed to equal one year of post- high school towards certification depends on the program and the institution. University curriculum requires 30 credit hours to receive credit for one full year; whereas college requires 40 credit hours to receive credit for one full year.

Unfinished degrees or certificates are evaluated on a CEU basis upon review of the courses completed and their relevance to water and wastewater operations. An individual who did not finish their degree will be given credits only for those courses that they finished successfully. As well, an individual who only completed two years of the four-year degree will not automatically get two years of credit. Instead, the courses will be evaluated based on their relevance to water and wastewater operations and will be assigned CEU.

### **Evaluation of Courses for CEU Assignment**

The Certification Specialist reviews applicant operators' total CEU to determine whether they qualify for certification. Upon request from a course provider, the Certification Specialist reviews course material and scheduling in consultation with the Manager and Director and may pre-approve whether the course will be considered relevant for certification and, if so, confirm the number of CEU that it will be achieved through completion of the course. Different courses covering equivalent subject matter may not be used together towards certification.

Courses that may be assigned CEU credit includes classroom courses, seminars, workshops, conferences, in-house training by a utility, correspondence courses, and on-line courses. CEU for correspondence/on-line courses will be determined by assessing the amount of time it would take to deliver the course in a classroom setting and not the actual time it takes to complete the course. Courses less than three hours in length will not be eligible for CEU credit. Courses or workshops on safety or first aid will only be given credit once for certification purposes. These courses can be used for certificate renewal every second renewal period only.

The following are a partial list of trainings/courses that are recognized by the Certification Program. If you have taken training that is not listed here and you think that it is relevant, you may submit a course outline/description to the Certification Specialist for review. The list will be updated regularly as new courses are submitted for assessment.

## Trainings and Conferences

Contents:

➤ 1 Life Workplace Safety & Health Ltd.	➤ Red River College
➤ Alberta Water & Wastewater Operators Association	➤ St. John Ambulance
➤ ALS Environmental	➤ Safety Services Manitoba
➤ American Water Works Association (AWWA)	➤ Thompson Rivers University
➤ Assiniboine Community College	➤ University College of the North
➤ ATAP Infrastructure Management Ltd.	➤ University of Manitoba
➤ California State University	➤ University of Saskatchewan
➤ City of Winnipeg Training	➤ University of Winnipeg
➤ Clow Canada/Deblo Industries	➤ Western Canada Water (WCW) [formerly Western Canada Water and Wastewater Association (WCWWA)]
➤ Digital-2000	➤ Western Canada Water Environment Association (WCWEA)
➤ Echologics Engineering Inc.	➤ YOW Canada
➤ Elite Safety Services	➤ Others
➤ Engineering Institute of Canada	
➤ ITT Water & Wastewater	
➤ Malaspina Community College	
➤ Manitoba Aboriginal & Northern Affairs	
➤ Manitoba Construction	
➤ Manitoba Emergency Measures Organization	
➤ Manitoba Water and Wastewater Association (MWWA)	
➤ New Heights Industries	
➤ Northern Alberta Institute of Technology	
➤ Nova Training and Development Inc.	
➤ Optimize Consulting	
➤ Power Engineering	

**1 Life Workplace Safety & Health Ltd.**<http://1lifeworkplacesafety.com/>

<b>Course Name</b>	<b>CEU</b>
Confined Space Awareness	0.3
Fall Protection Awareness	0.3
Hazard Awareness**	0.6
Hazard Recognition & Control**	0.3
Incident Causation and Investigation	0.3
Lockout (CSA Standard)	0.3
Personal Protection Equipment	0.3
Safety Committee Essentials*	0.6
Supervisor Essentials*	0.6
Transportation of Dangerous Goods	0.3
Trenching and Shoring Excavations	0.3
WHMIS	0.3

\*will only earn 50% CEU credit when taken in combination with the other.

\*\*will only earn 50% CEU credit when taken in combination with the other.

**Alberta Water & Wastewater Operators Association (AWWOA)**<http://www.awwoa.ab.ca/>

<b>Course Name</b>	<b>CEU</b>
Pumps: Theory, Operation and Maintenance (Home study)	3.0
Small Wastewater System Operations (Home study)	0.6

**ALS Environmental**<http://www.alsglobal.com/Home/Our-Services/Life-Sciences/Environmental/>

<b>Course Name</b>	<b>CEU</b>
Everything You Wanted to Know About Lagoon/Wastewater Samples	0.3

**American Water Works Association (AWWA)**<http://www.awwa.org>

<b>Course Name</b>	<b>CEU</b>
Disinfection of Pipelines & Storage Facilities	0.4
Fire Hydrant Operations & Maintenance	0.3
Teleconference - Water Resource Alternatives	0.3
UV Disinfection	0.8
Water Efficiency Workshop	1.6
Watershed Protection Seminar	1.6

**Assiniboine Community College**

<http://public.assiniboine.net/>

<b>Course Name</b>	<b>CEU</b>
Environmental Chemistry	6.0
Inorganic Chemistry	6.0
Water Quality	3.0

**ATAP Infrastructure Management Ltd.**

<http://www.atap.ca/>

<b>Course Name</b>	<b>CEU</b>
Confined Space Entry	0.6
Filter Surveillance and Optimization	0.6
Gas Chlorination (2 days)	1.2
Hypochlorination & Feeder Maintenance	0.6
Iron & Manganese Removal	0.6
Lagoon Operation & Maintenance	0.6
Membrane Filtration	0.6
Membrane Filtration (Class and hands on training)**	1.2
Portable Reservoir Design, Operation & Maintenance	0.6
Wastewater Collection Maintenance	0.6
Water Distribution System Maintenance (1/2 day)	0.3
Water Main Swabbing	0.6
Water Main Swabbing (2 days with on site session and hands on practice)*	1.0
Water Distribution III (6 days)	3.2
Water Distribution IV (8 days)	3.6
Water Treatment III (6 days)	3.2
Water Treatment IV (8 days)	3.6
WHMIS & Safety	0.6
WHMIS (1/2 day)	0.3

\*Individual attending this course could only get 0.4 CEU if the individual has already completed the 1-day water main swabbing worth 0.6 CEU.

\*\*Individual attending this course could only get 0.6 CEU if the individual has already completed the 1-day filtration course worth 0.6 CEU.

<b>Course Name</b>	<b>CEU</b>
Advanced WWT	9.0
Facilities - WAT703B	0.9
Industrial WWT Vol. II	3.0
Industrial WWT Vol. I	3.0
Manage for Success	4.5
Operation & Maintenance WWC Vol. II	9.0
Operation & Maintenance WWC Vol. I	9.0
Pretreatment Facility Inspection	6.0
Small Wastewater Systems Vol. II	9.0
Small Wastewater Systems Vol. I	9.0
Small Water Systems Operations and Maintenance Course	9.0
Small Water Systems Vol. II	9.0
Small Water Systems Vol. I	9.0
Small Water Systems Video Information System	3.0
Treatment of Metal Wastestreams	2.5
Treatment of WW from Electroplating	2.5
Utility Management (post-2003)	2.0
Utility Management (pre-2003)	4.5
Water Distribution System Operation & Maintenance	9.0
Water System Operation and Maintenance Video Training Series	3.0
Water Treatment Home study III, pre-88	9.0
Water Treatment Home study II, pre-88	9.0
Water Treatment Home study I, pre-88	9.0
WTP Operation Vol. III, post-88	9.0
WTP Operation Vol. II, post-88	9.0
WTP Operation Vol. I, post-88	9.0
WWT Home study Part III	9.0
WWT Home study Part II	9.0
WWT Home study Part I	9.0

## **City of Winnipeg Training**

<b>Course Name</b>	<b>CEU</b>
Advanced Cable and Pipe Locating	0.8
Advanced Foremanship-Project Skills	0.8
Aerial Work Protection	0.7
Amalgamated Workplace Health & Safety Regulations	0.7
Asbestos Awareness	0.35
Backhoe Training	0.6
Basic Computer Applications	0.6
Chainsaw Safety & Cutting	0.35
Chemical and Biological Hazard Control	0.6
Chemical Safety	0.6
Chemical Safety - Intro	0.6
Citizen/Customer Service	0.7
Confined Entry	0.6
Customer Service	0.7
Electrical Awareness Training	0.2
Emergency First Aid CPR	0.6
Emergency Response Planning Seminar	1.5
ERP Water System Training Program	1.25
Excavation Safety	0.3
Fall Protection	0.6
Foremanship Level 1	1.4
Foremanship Level 2	1.8
Foremanship Level 3	2.0
Foundations of Supervisory Development	1.5
Front End Loader Training	0.8
Frontline Leadership	1.2
Fundamentals for Safety and Health Committee	0.7
Iview	0.0
Leakfinder Training	1.6
Lift Truck	0.6
Loader Training	0.6
Lock out/Tag out	0.35
NEWPCC BNR (Centrate Transfer, SBRs, Blower System, Methanol System)	0.4
NEWPCC BNR (SBR Overview, Basin set-up, Aeration, Equalization)	0.4
Outlook - Working with the Calendar	0.0
Phosphorus Removal System Control	0.3
Safety Responsibilities for Leadhand	0.7
Safety Responsibilities for Supervisors	0.7
Sewer Maintenance Training-Phase 1	1.6
Special Boiler Operator	4.0
Tapping and Connecting	0.6
Traffic Control Training	0.3
Transportation of Dangerous Goods Training Program	0.3
Understanding a Centrifugal Pump Curve	0.4
Vulnerability Assessment Workshop	0.7

**City of Winnipeg Training** (Cont'd.)

<b>Course Name</b>	<b>CEU</b>
Wastewater Emergency Response Training	1.2
Water Leak Detection Course	1.5
WEWPCC BNR (DAF Process, Process Change, Potential Emergency Response and Safety)	0.4
WEWPCC BNR (Fermenter Process Review, DAF Process, Flow Measurement)	0.4
WEWPCC BNR (Ferric Chloride Feed System, Polymer Feed System, Jar Test)	0.4
WEWPCC BNR (Primary Sludge Fermentation, Solids Handling)	0.4
WEWPCC BNR (Secondary Clarifier, Aeration System and Blowers)	0.4
WEWPCC BNR (Upgrade Activated Sludge, Nutrient Removal)	0.4
WHIMS	0.6
WHIMS	0.3
Windows - Intro	0.4
Winnipeg Emergency Management	1.3
ZeeWeed Drinking Water User's Group Seminar	1.09

**Clow Canada**

<http://www.clowcanada.com/>

<b>Course Name</b>	<b>CEU</b>
Fire Hydrant and Valve Maintenance - 2010 onwards	0.6
Fire Hydrant and Valve Maintenance - pre 2010	0.3

**Digital-2000**

<http://www.digital2000.com/>

<b>Course Name</b>	<b>CEU</b>
Chemical Safety Module (online)	0.1
Electrical Safety (online)	0.1
Elevated Work* (online)	0.1
Field Equipment Module II* (online)	0.1
Field Equipment Module I (online)	0.15
Field Operations Safety Module III (online)	0.1
Field Operations Safety Module II (online)	0.1
Field Operations Safety Module I (online)	0.1
First Aid Module (online)	0.15
Personnel Protective Equipment Module (online)	0.15
Tool Safety (online)	0.1
Treatment Plant Safety Module (online)	0.2
Water/Wastewater Operations Safety Module (online)	0.15

\*Cannot be combined due to overlapping topics.



**Echologics Engineering Inc.**

<http://echologics.com/>

<b>Course Name</b>	<b>CEU</b>
Water Leak Detection Listening Course	0.6

**Elite Safety Services**

<http://www.elitesafetyservices.ca/>

<b>Course Name</b>	<b>CEU</b>
Anhydrous Ammonia	0.3
Chlorine Kit "B": & Decon	0.3
Confined Space Entry (16 hours)*	1.2
Confined Space Rescue (16 hours)* If they have not completed Confined Space Entry	1.2
Confined Space Rescue (16 hours) If they have completed Confined Space Entry	0.5
Fall Protection	0.6
First Aid/CPR (2 days)	1.0
H2S Alive	0.5
H2S Awareness	0.3
HVAC Training: Basic Filtration 101	0.2
Incident Command System	0.3
Level A 7 Level B - CPC	0.6
Self Contained Breathing Apparatus (SCBA)	0.6

\*Some topics overlap.

**Engineering Institute of Canada**

<http://www.eic-ici.ca/>

<b>Course Name</b>	<b>CEU</b>
Canadian Electrical Code Training (2 days)	1.4

**ITT Water & Wastewater**

<http://www.ittflygt.ca/> (Canada)

<b>Course Name</b>	<b>CEU</b>
ITT Municipal Operators and Maintenance Training Course	0.5

**Malaspina College**

<http://www.mala.ca/>

<b>Course Name</b>	<b>CEU</b>
Water Technician Course	82.0

### **Manitoba Aboriginal & Northern Affairs**

<b>Course Name</b>	<b>CEU</b>
Electrical Awareness Training	0.2
Public Works Employee Workshop 2010 - Thompson	0.6

### **Manitoba Construction Conference**

<http://www.constructionconference.ca/>

<b>Course Name</b>	<b>CEU</b>
Accident Investigation	0.4
Confined Space Awareness	0.7
Conflict Management	0.4
Electrical Safety/Arc Flash & Electrical Hazards	0.3
Emergency Preparedness	0.3
Environmental Management in Construction Industry	0.7
Excavation and Trenching	0.3
Fall Protection Systems	0.3
Flag Person Training	0.3
Ground Disturbance	0.7
H2S Alive	0.7
Hazard Assessment, Analysis and Control	0.3
Health Hazards	0.4
Incident Investigation	0.3
PPE	0.4
Project Safety Plans	0.3
Safe Work Procedures	0.3
Safety Skills for Supervisors	0.7
Workplace Safety Legislation	0.3

### **Manitoba Emergency Measures Organization**

<http://www.gov.mb.ca/emo/>

<b>Course Name</b>	<b>CEU</b>
Manitoba Emergency Management Course (2-day course)	1.0

**Manitoba Water and Wastewater Association (MWWA)**<http://www.mwwa.net/>

<b>Course Name</b>	<b>CEU</b>
Annual Seminar & Trade Show (2013) Full Conference	1.5
Annual Seminar & Trade Show (2013) 2 days	1.2
Annual Seminar & Trade Show (2012)	1.1
Annual Seminar and Trade Show (2011)	1.2
Annual Seminar & Trade Show (2010)	1.2
Annual Seminar & Trade Show (2009)	1.8
Annual Seminar & Trade Show (2008)	1.4
Annual Seminar & Trade Show (2007)	1.4
Annual Seminar & Trade Show (2006)	1.4
Backflow Prevention and Cross Connection Awareness	0.65
Care, Maintenance & Inspection Wells	0.6
Chemical/Biological Hazards Control (including WHMIS)	0.6
Creation of Emergency Response Plans	0.6
Disinfection Alternatives Workshop	0.7
Drinking Water - Theory and Optimizing Your Testing	0.6
Emergency Response Plans Workshop	0.6
Excel Form Development	0.6
Filament Identification and Process Control in Activated Sludge	2.2
Filter Surveillance	0.6
Filter Workshop	0.6
General Guidelines for Creation of SOPs 2010	0.6
GPS/GIS Workshop	0.6
Hydrant & Valve Maintenance Workshop	0.6
Industrial Confined Space Awareness Workshop	0.6
Iron and Manganese Removal Workshop	0.6
Issues & Trends in Industrial Wastewater Treatment	1.0
Jar Testing Workshop	0.7
Lab Practices - WW Treatment	0.5
Lagoon Workshop	0.6
Leak Detection, Water Distribution Maintenance, Leak Repair/Swabbing and Uni-directional Flushing, Pipe Condition Assessment	0.6
Management and Supervision for Water and Wastewater Operators	1.2
Membrane Bioreactors for Municipal Wastewater Treatment	0.5
Membrane Filtration Workshop 2010	0.6
Membrane Water Technology Workshop	0.6
Municipal Wastewater System Maintenance Seminar	0.4
Nutrient Removal Workshop 2010	0.6
Personal Protective Safety	0.63
Principles & Practices of Drinking Water Chlorination	0.6
Pump Maintenance & Variable Frequency Drive	0.6
Pump Workshop 2011	0.65

**Manitoba Water and Wastewater Association (MWWA)** (Cont'd.)<http://www.mwwa.net/>

<b>Course Name</b>	<b>CEU</b>
Safe Handling of Sodium Hypochlorite and Chlorine	0.5
Supervisors and Safe Work	0.6
Tapping Workshop	0.6
Transportation of Dangerous Goods and Workplace Hazardous Material Information System (WHMIS)	0.6
Turbidity Workshop	0.6
Wastewater Disinfect Selkirk	0.6
Wastewater Pumping Station and Forcemain Systems Design, Operation and Maintenance Workshop	1.2
Water Distribution - Aging Infrastructure	0.6
WHMIS Chemical Handling for W/WW Facilities	0.6
Wells - Operation, Maintenance and Troubleshooting	0.6

**New Heights Industries**<http://www.newheightsindustries.com/>

<b>Course Name</b>	<b>CEU</b>
Fall Protection and Rescue - Level 2	1.2
Workplace Safety and Health Workshop	3.0

**Northern Alberta Institute of Technology**<http://www.nait.ca/>

<b>Course Name</b>	<b>CEU</b>
Hydraulics & Blueprint Reading	7.0
NAIT Water & Wastewater Technician	90.0
Science and Electricity	4.0
Support Systems	9.0
Technical Mathematics Part 1	4.5
Wastewater Collection II - WWW213	6.0
Wastewater Collection I - WWW103	5.0
Wastewater Treatment II - WWW204	9.0
Wastewater Treatment I - WWW104	9.0
Water Distribution II - WWW201	6.0
Water Distribution I - WWW101	6.0
Water Treatment II - WWW202	9.0
Water Treatment I - WWW102	8.0

**Nova Training and Development Inc.**

<http://novatraining.org/>

<b>Course Name</b>	<b>CEU</b>
Basic Microbiological Concepts	0.6
Cross Connection Control	0.6
Monitoring and Sampling	0.5
Water Main and Storage Facility Disinfection	0.6
Water Quality Complaint Investigations	0.6

**Optimize Consulting**

<b>Course Name</b>	<b>CEU</b>
Class 2 & 3 Water Treatment & Distribution Exam Prep Course (4 days)	1.6
Class 2 Water Treatment Exam Prep Course (4 days)	2.2
Operation and Maintenance of Valves	0.6
Pumps and Hydraulics	0.7

**Power Engineering**

**To receive CEU credit the applicant must submit a copy of course completion certificate or transcripts.**

<b>Course Name</b>	<b>CEU</b>
Power Engineering 5 <sup>th</sup> Class	11.2
Power Engineering 4 <sup>th</sup> Class	20.0
Power Engineering 3 <sup>rd</sup> Class	20.0
Power Engineering 2 <sup>nd</sup> Class	20.0
Power Engineering 1 <sup>st</sup> Class	10.0
Power Engineering Technology	2 years post secondary

**Red River College**  
<http://www.rrc.mb.ca/>

<b>Course Name</b>	<b>CEU</b>
Business Communications 1 - E33H100	6.4
Environment Issues in the Workplace - E33H110	4.0
Environmental Protection Technology	3 years post secondary
Managing Occupational Health & Safety - E33H109	6.0
Math and Science Refresher	2.0
Municipal Technology Diploma	3 years
Occupational Health & Safety Data Management - E33H102	2.0
Occupational Health & Safety Risk Management - E33H101	4.0
Occupational Hygiene - E33H103	4.0
Occupational Safety - E33H105	4.0
Plumbing Cross Connection Control	3.5
Project Management: Fundamentals - E33H107	4.0
Small Systems Refresher course	2.5
Water and Wastewater - CIVL3008	8.0
Water and Wastewater Refresher course Class I and Class II (4-day)	3.0
Water and Wastewater School First Year (one week course)	3.0
Water and Wastewater School Second Year (one week course)	3.0
Water and Wastewater School Third Year (one week course)	3.0
Water Treatment III Refresher course	3.5

**St. John Ambulance**  
<http://www.sja.ca/>

<b>Course Name</b>	<b>CEU</b>
First Aid/CPR	0.6

**Safety Services Manitoba**  
<http://www.safetyservicesmanitoba.ca/>

<b>Course Name</b>	<b>CEU</b>
Confined Space Entry	1.0
Fall Protection	0.6
Safe Work Conference 2013	0.5
WHMIS, Confined Space Refresher/Awareness	0.6

**Thompson Rivers University**<http://www.tru.ca/>

<b>Course Name</b>	<b>CEU</b>
Adv Coagulation & Particle Removal - WWTP 272 *	4.5
Applied Math and Science - WWTP 172 *	4.5
Disinfection - WWTP 274 *	4.5
Electrical Fundamentals II - WWTP 270 *	4.5
Electrical Fundamentals I - WWTP 180 *	4.5
Environment & Health Issues - WWTP 174 *	4.5
Filtration - WWTP 273 *	4.5
Instrumentation II - WWTP 282 *	4.5
Instrumentation I - WWTP 182 *	4.5
Limnology - WWTP 281 *	4.5
Mechanical Systems II - WWTP 183 *	4.5
Mechanical Systems I - WWTP 173 *	4.5
Microbiology & Toxicology - WWTP 280 *	4.5
Practicum II - WWTP 289 *	4.5
Practicum I - WWTP 189 *	4.5
Supervisory & Leadership Skills - WWTP 283 *	4.5
Water Chemistry - WWTP 271 *	4.5
Water Sources - WWTP 170 *	4.5
Water Treatment II - WWTP 185 *	4.5
Water Treatment I - WWTP 171 *	4.5
Water Treatment Technology Diploma	90.0

\* Each course can be separated into smaller modules and each module is worth 1.5 CEU.

**University College of the North**<https://www.ucn.ca/ics>

<b>Course Name</b>	<b>CEU</b>
Natural Resources Management Technology	2 years post secondary

**University of Manitoba**<http://umanitoba.ca/>

<b>Course Name</b>	<b>CEU</b>
Bachelor of Science (Major)	4 years post secondary
Bachelor of Science	3 years post secondary
Basic Plant Science	3.0
Biology: Biological Diversity and Interaction (online study)	3.0
Biology: Foundations of Life (online study/flexible study)	3.0
Calculus 2	3.0
Calculus - Intro	3.0
Crop Science	5.0
Engineering Degree	4 years post secondary
Environmental Science 1: Concepts (online study)	3.0
Essentials of Microbiology (online study)	3.0
Farm Insects	3.0
Farm Machinery	4.0
Farm Power	4.0
Personnel Management - 41.249	3.0
Soil Management	3.0
Soils 2 - Intro	3.0
Soils 1 - Intro	3.0
Weed Control	3.0

**University of Saskatchewan**<http://www.usask.ca/><http://www.siastr.sk.ca/> (SIAST)

<b>Course Name</b>	<b>CEU</b>
Analysis and Design	3.0
Analytical Geometry	3.0
Calculus 2 - Intro	3.0
Calculus 1 - Intro	3.0
Differential Calculus	3.0
Diploma in Surveying Engineering Technology (SIAST)	2.5 years post secondary
Electricity and Magnetism 2	3.0
Electricity and Magnetism 1	3.0
General Chemistry	3.0
Graphics and Design	3.0
Materials Strength	3.0
Mechanics 3	3.0
Mechanics 2	3.0
Mechanics 1	3.0
Water and Wastewater Technician Diploma (SIAST)	90.0



<b>Course Name</b>	<b>CEU</b>
Agricultural Geography - GEOG.2401	3.0
Atmospheric Science - Intro - GEOG.1201	3.0
Atmospheric Science - Intro - GEOG	3.0
Bachelor of Science in Environmental Studies	4 years post secondary
Calculus - Intro - MATH.1101	6.0
Chemistry & Society - CHEM.2801	3.0
Chemistry & Society - CHEM	3.0
Chemistry - Intro - CHEM.1101	6.0
Earth Science - Intro - GEOG.1202	3.0
Environment & Health - ENV.2604	3.0
Environmental Biology - BIOL.1106	3.0
Environmental Economics - ECON.2317	3.0
Environmental Ethics - PHIL.2233	3.0
Environmental Impact Assessment - ENV.4611	6.0
Environmental Perceptions - GEOG.2408	3.0
Environmental Sustainability - ENV.2306	3.0
Issues Sustainable Cities - ENV.3025	3.0
Law and the Environment - ENV.3035	3.0
PHYS.1101	6.0
Statistical Techniques for Environmental Analysis - GEOG.2309	3.0
Water Resources - GEOG.3408	3.0

**Western Canada Water (WCW) [formerly Western Canada Water and Wastewater Association (WCWWA)]**  
<http://www.wcwwa.ca/>

<b>Course Name</b>	<b>CEU</b>
Assessing and Addressing Challenging Hydraulic	0.4
Asset Management Workshop: The Economics of a “Hot Spot” Upgrade Strategy for Water Mains	0.3
Biosolids and Residuals	0.5
Contract law for Engineers	0.3
Conventional Water Treatment	0.3
Cross Connection Control Through Awareness and Backflow Prevention	0.3
Disinfection By-product Seminar	0.6
Disinfection of Pipelines and Storage Facilities	0.3
Emergency Response Planning	1.5
Greenhouse Gases and Carbon Footprinting in the Water/Wastewater Industry	0.4
Leadership in Project Management	0.3
Mathematics (correspondence)	9.0
Membrane Technologies for Water and Wastewater Treatment	0.6
Membrane Technologies for Water Treatment	0.5
Municipal Water Reuse - Challenges and Opportunities	0.7
On-Site Hypochlorite Generation as a Chemical Disinfection Alternative	0.6
Problem Solving Water & Wastewater Infrastructure	0.5
Project Management	0.3
Project Planning, Delivery & Commissioning Seminar	1.2
Pump Operations & Maintenance	0.4
Regional Water Systems - Design and Operation Basics	0.3
Reservoir Water Quality Management	0.3
River Health	0.3
SCADA Fundamentals	0.3
Small System Nutrient Removal Seminar 2010	1.2
Small System Nutrient Removal Seminar 2009	1.0
Source Water Protection	0.3
Tertiary Filtration Workshop	0.3
The Future Art of Stormwater	0.5
Understanding Contaminants of Emerging Concern and the Challenges Faced by the Wastewater Treatment Industry	0.4
Utility Asset Management	0.3
Utility Management Workshop - A Holistic Approach to Your Utility	0.7
Vulnerability Assessment Workshop	0.7
Wastewater Pumping Station and Forcemain Systems Design, Operation and Maintenance Workshop	1.2
Water Conservation Guidelines - Water Audits, Loss Control and Non-revenue Water Loss	0.3

**Western Canada Water (WCW) [formerly Western Canada Water and Wastewater Association (WCWWA)]** (Cont'd.)  
<http://www.wcwwa.ca/>

<b>Course Name</b>	<b>CEU</b>
Water Main Relining	0.3
Water Management	0.3
Water Reuse in Western Canada - Drivers, Technologies and Examples	0.3
Watershed and Stormwater Management	0.3
Water Treatment Plant Operation correspondence course	15.0
Web Workshop on Pumps Operations and Maintenance	0.4
Western Canada Water 2010 Conference	0.9
Western Canada Water 2009 Conference	1.2
Western Canada Water and Wastewater Association Conference Workshops 2006 Conference	0.6
Western Canada Water Pre-conference half day workshop (each)	0.3
Where has all our Water Gone	0.4

**Western Canada Water Environment Association (WCWEA)**  
<http://www.wcwea.org/>

<b>Course Name</b>	<b>CEU</b>
Nutrient Removal Seminar 2005	1.3

**YOW Canada**  
<http://www.yowcanada.com/>

<b>Course Name</b>	<b>CEU</b>
TDG for All Workers (online course)	0.3

**Others**

<b>Course Name</b>	<b>CEU</b>
City of Brandon Respiratory Protection Training	0.3

**Peter Neufeld Consulting Inc.**

<b>Course Name</b>	<b>CEU</b>
Fall Protection (one-day)	0.6
Ladder Training	0.3
Transportation of Dangerous Goods (one-half day)	0.3
WHMIS	0.3

**Randy Hanson**

<b>Course Name</b>	<b>CEU</b>
Drinking Water - Basic Water Analysis	0.3