

Greening the Economy



Transitioning
to **New**
Careers

HEALTH CARE

**CAREER
PROFILES**

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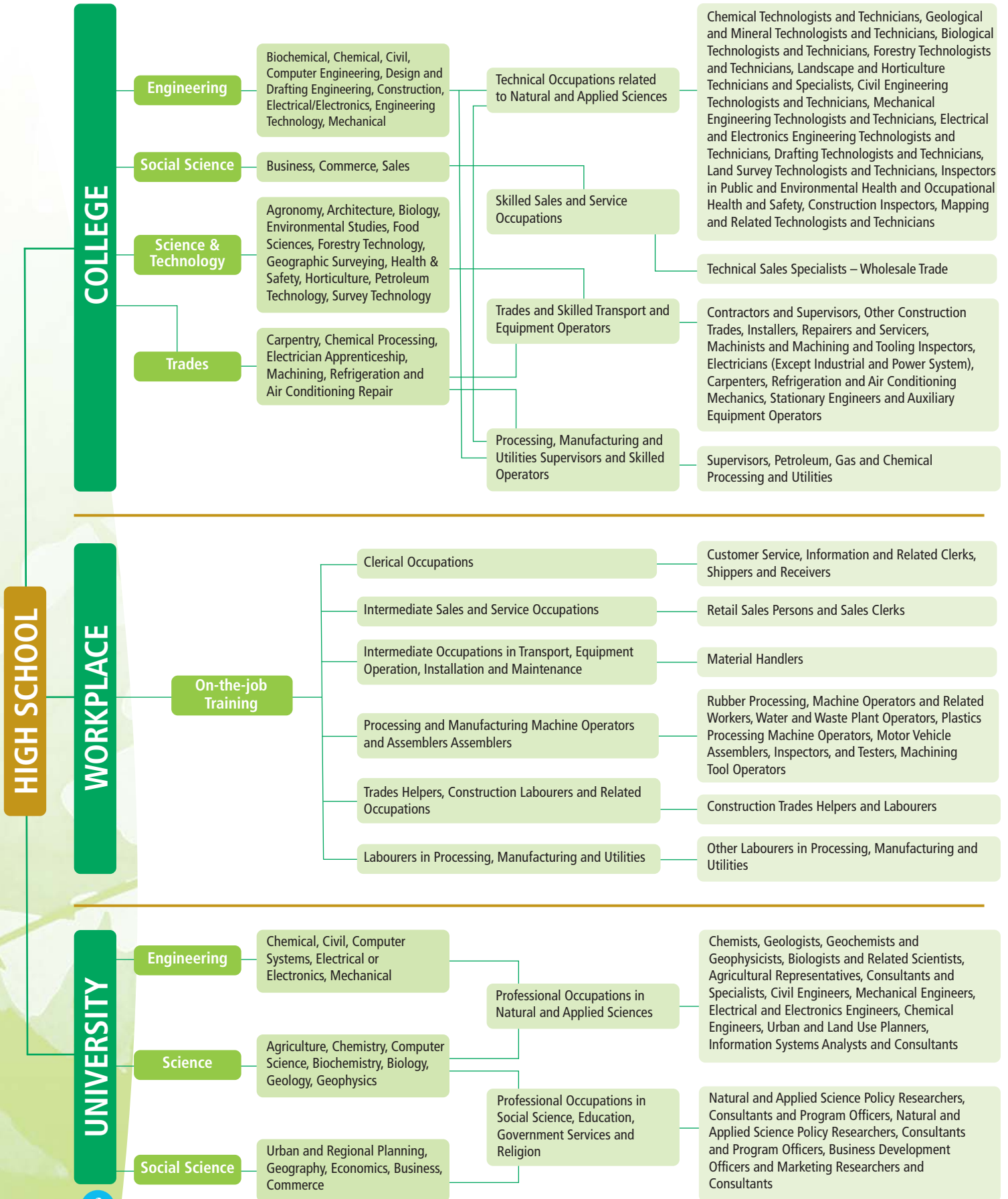
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Educational Flow Chart



Analytical Chemist

NOC 2225

As an analytical chemist, one specializes in analyzing substances. Complex equipment is used and procedures such as chromatography, electrophoresis, mass spectrometry, and optical spectroscopy are done to test samples and identify/quantify their components. These individuals work in part of the environmental industry as well as in pharmaceutical research, analyzing chemicals and medicines to find more sustainable alternatives in their manufacturing process and the molecule itself¹.

Places of Employment²:

- Federal, provincial and municipal government departments
- Colleges, universities and research institutes
- Biotechnology firms
- Waste management firms
- Environmental consulting firms
- Chemical companies
- Health care institutes

Employment Requirements²:

- The minimum education requirement to work as an analytical chemist is a university undergraduate degree. Areas: Chemistry, Environmental Science, Chemical Engineering
- The majority of positions in analytical chemistry are in research and require graduate studies related to the above fields
- A period of supervised work experience may be required
- Certification is not mandatory, but may be required by some employers

Local Educational Programs:

Program	Length	Certification	Institutions
Chemical Engineering	4 Years	Bachelor of Applied Science	University of Toronto
Chemical Engineering	4 Years	Bachelor of Engineering	Ryerson University
Analytical Chemistry	4 Years	Bachelor of Science	York University
Chemistry and Environmental Studies	4 Years	Bachelor of Science	York University
Chemistry	4 Years	Bachelor of Science	University of Toronto
Environmental Chemistry	4 Years	Bachelor of Science	University of Toronto

Most important skills for occupation²:

- General knowledge in calibrating laboratory equipment and maintaining maintenance schedules
- General knowledge in laboratory techniques (including the preparation of standards, reagents and solvents for experiments)
- Ability to prepare reports identifying samples, explaining testing methods, documenting findings and outlining conclusions of sustainability analyses
- Ability to propose modifications to chemical molecules to render them more environmentally friendly
- Ability to design and execute experimental procedures, including qualitative and quantitative testing of complex samples

The most important High School skills are²:

- Chemistry
- Biology
- Math
- Physics

Analytical Chemist

NOC 2225

Number of Employees by Age Range³:

Employment Distribution by Age	% of Total	All Occupations
15 – 24 years	3.6%	14.1%
25 – 44 years	70.2%	45.1%
45 - 64 years	25.1%	38.8%
65 years and over	1.2%	2.0%

Source: Statistics Canada, 2006 Census

Average Salary⁴

Average salary in this occupation:

\$ 64,884

Top Industries of Employment³:

Industry (NAICS)	% of Total Employed	Number of People Employed (Total 4950)	Number of Employers in York Region
5417 Scientific Research and Development Services	28.3%	1401	1695
325 Chemical Manufacturing	20.4%	1010	4340
3254 Pharmaceutical and Medicine Manufacturing	12.7%	629	2125
62 Health Care and Social Assistance	10.5%	520	37090

Source: Statistics Canada, 2006 Census; Statistics Canada. Canadian Business Patterns Data. December 2003, June 2009.

Matrix of Skills Transferability⁵:

Transferability between occupations has been analyzed using the National Occupational Coding system. Judgments have been made based on an analysis of available information regarding the overlap of knowledge and skills and labour market hiring practices for occupations. Occupations to which transferability exists are:

- Architecture and Science Managers (NOC 0212)
- Chemical Engineers (NOC 2134)
- Geochemists (NOC 2113)
- Metallurgists and Material Scientists (NOC 2115)
- Molecular Biologists (NOC 2121)

Local Employers⁶:

The following list of employers was randomly selected as examples of companies employing this occupation. An attempt was made to represent a company from each local board area.

Southlake Regional Health Centre

596 Davis Drive,
Newmarket, ON L3Y 2P9
Telephone: 905 476-1800
www.southlakeregional.org

Ontario Institute for Cancer Research

101 College Street,
Toronto, ON M5G 1L7
Telephone: 416 673-8100
www.marsdd.com

For a more complete listing of potential employers please visit www.labourmarketinformation.ca.

ENDNOTES

¹Human Resources Skills Development Canada. National Occupational Classification System 2006. www5.hrsdc.gc.ca/NOC.

²Human Resources Skills Development Canada. Essential Skills Profiles. www.hrsdc.gc.ca/eng/workplaceskills/essential_skills/general/home.shtml

³Statistics Canada. 2006 Census. www.statcan.gc.ca.

⁴Ontario Labour Market www.tcu.gov.on.ca/eng/labourmarket/ojif/findoccupation.asp

⁵Human Resources Skills Development Canada. Matrix of Skills Transferability – January 2003. www.hrsdc.gc.ca.

⁶Working In Canada www.workinginCanada.gc.ca

Biomedical Engineers

NOC 2148

Biomedical engineers study, design, develop and evaluate biological and medical systems and products such as artificial organs, prostheses, medical instruments and information systems. These individuals can work in a variety of specialties within the medical field, and continue to maintain a mindset of sustainability throughout¹.

Places of Employment²:

- Medical Offices
- Medical Laboratories
- Manufacturing Plants
- Clinics
- Hospitals

Employment Requirements²:

- A bachelor's degree in engineering with a major in biomedical engineering, chemical engineering, electrical engineering or mechanical engineering is required for entry level positions in industry (medical device, pharmaceutical companies or clinical engineering positions)
- Many biomedical engineers qualify for their positions by continuing their education after a bachelor's degree by taking medicine, dentistry or graduate (master's or doctoral) degree programs in other fields. A graduate degree is required for research and development positions in biomedical engineering.

Local Educational Programs:

Program	Length	Certification	Institutions
Engineering Science	4 years	Bachelor of Applied Science	University of Toronto
Biomedical Engineering	4 Year or 5 Year Industrial Internship Program (IIP)	Bachelor of Engineering	Ryerson University
Biomedical Engineering	4 year	Bachelor of Engineering	University of Guelph

Most important skills for occupation²:

- Strong interest in engineering and medicine
- Ability to think analytically and solve problems
- An aptitude for science and math
- Ability to visualize complex processes and equipment
- Good oral and written communication skills
- Creativity and persistence
- A willingness to improve their knowledge and skills on an ongoing basis
- Ability to work effectively with people from various disciplines and educational backgrounds

The most important High School skills are²:

- Math
- English
- Sciences (Physics and Biology specifically)

Number of Employees by Age Range³:

Employment Distribution by Age	% of Total	All Occupations
15 – 24 years	9.9%	14.1%
25 – 44 years	60.3%	45.1%
45 - 64 years	29.8%	38.8%
65 years and over	0.0%	2.0%

Source: Statistics Canada, 2006 Census

Average Salary⁴

Average salary in this occupation:

\$ 66,694

Biomedical Engineers

NOC 2148

Top Industries of Employment³:

Industry (NAICS)	% of Total Employed	Number of People Employed (Total 4150)	Number of Employers in York Region
62 Health Care and Social Assistance	13.6%	564	37090
5417 Scientific Research and Development Services	5.8%	241	1695
334 Computer and Electronic Product Manufacturing	5.2%	216	6175

Source: Statistics Canada, 2006 Census; Statistics Canada. Canadian Business Patterns Data. December 2003, June 2009.

Matrix of Skills Transferability⁵:

Transferability between occupations has been analyzed using the National Occupational Coding system. Judgments have been made based on an analysis of available information regarding the overlap of knowledge and skills and labour market hiring practices for occupations. Occupations to which transferability exists are:

- Biologist (NOC 2121)
- Biomedical Engineering Technologist (NOC 2241)
- Chemical Engineer (NOC 2134)
- Electrical Engineer (NOC 2133)
- Engineering Physicist (NOC 2145)
- Industrial Engineer (NOC 2141)
- Mechanical Engineer (NOC 2132)
- Nanoengineer (NOC 2147)
- Physician (NOC 3112)
- Physicist (NOC 2111)
- Physiologist (NOC 2121)

Local Employers⁶:

The following list of employers was randomly selected as examples of companies employing this occupation. An attempt was made to represent a company from each local board area.

Hospital for Sick Children

555 University Avenue,
Toronto, ON M5G 1X8
Telephone: 416 813-1500
www.sickkids.ca

CCE Medical Equipment

2735 Matheson Boulevard East,
Mississauga, ON L4W 4M8
Telephone: 905 696-9220
www.ccemedical.com

For a more complete listing of potential employers please visit www.labourmarketinformation.ca.

ENDNOTES

¹Human Resources Skills Development Canada. National Occupational Classification System 2006. www5.hrsdc.gc.ca/NOC.

²Human Resources Skills Development Canada. Essential Skills Profiles. www.hrsdc.gc.ca/eng/workplaceskills/essential_skills/general/home.shtml

³Statistics Canada. 2006 Census. www.statcan.gc.ca.

⁴Ontario Labour Market www.tcu.gov.on.ca/eng/labourmarket/ojf/findoccupation.asp

⁵Human Resources Skills Development Canada. Matrix of Skills Transferability – January 2003. www.hrsdc.gc.ca.

⁶Working In Canada www.workinginCanada.gc.ca

Biotechnologist

NOC 2121

As a biotechnologist, one applies the knowledge to select, manipulate, or modify organisms to produce strains uniquely suited to making a product or driving a process. These individuals, with the environment in mind, intend to make a product or drive a process towards a more sustainable outcome or destination. Biotechnologists play a large role in finding new and innovative solutions to environmental problems¹.

Places of Employment²:

- Medicine and health care industry
- Federal, provincial and municipal government departments
- Colleges, universities and research institutes
- Biotechnology firms
- Environmental consulting firms
- Medical labs

Employment Requirements²:

- A bachelor's degree in engineering with a major in biomedical engineering, chemical engineering, electrical engineering or mechanical engineering is required for entry level positions in industry (medical device, pharmaceutical companies or clinical engineering positions)
- Many biomedical engineers qualify for their positions by continuing their education after a bachelor's degree by taking medicine, dentistry or graduate (master's or doctoral) degree programs in other fields. A graduate degree is required for research and development positions in biomedical engineering.

Local Educational Programs:

- The minimum education requirement to work as a biotechnologist is university undergraduate degree. Area: Biotechnology, Biochemistry, Biology, Microbiology
- The majority of positions are in research and require graduate studies in the above fields
- Certification is not mandatory

Program	Length	Certification	Institutions
Biotechnology	4 Year	Bachelor of Science	York University
Biochemistry	4 Year	Bachelor of Science	York University
Genes, Genetics and Biotechnology	4 Year	Bachelor of Science	University of Toronto
Biochemistry	4 Year	Bachelor of Science	University of Toronto

Most important skills for occupation²:

- General knowledge of the genetic, chemical, physical, and structural composition of cells, tissues, and organisms
- Ability to genetically modify subjects to create a more sustainable product on small and large scales
- Ability to consider the social and ethical concerns raised by communities in which technology-enhanced products are used
- Innovative interest in synthesizing information to conduct ecological and environmental impact studies and to prepare reports, and to develop new practices in biological research
- Ability and interest in precision work with instruments and equipment used in experiments
- Interest in consulting to advise on issues related to biological processes and research and the development of new products
- Must be able to supervise biological technologists and technicians and other scientists

The most important High School skills are²:

- Biology
- Chemistry
- Math
- English

Biotechnologist

NOC 2121

Number of Employees by Age Range³:

Employment Distribution by Age	% of Total	All Occupations
15 – 24 years	5.6%	14.1%
25 – 44 years	64.8%	45.1%
45 - 64 years	28.1%	38.8%
65 years and over	1.4%	2.0%

Source: Statistics Canada, 2006 Census

Average Salary⁴

Average salary in this occupation:

\$ 65,125

Top Industries of Employment³:

Industry (NAICS)	% of Total Employed	Number of People Employed (Total 3700)	Number of Employers in York Region
5417 Scientific Research and Development Services	21.3%	788	1695
91 Public Administration	33%	1221	16735
Health Care and Social Assistance	15%	555	37090

Source: Statistics Canada, 2006 Census; Statistics Canada. Canadian Business Patterns Data. December 2003, June 2009.

Matrix of Skills Transferability⁵:

Transferability between occupations has been analyzed using the National Occupational Coding system. Judgments have been made based on an analysis of available information regarding the overlap of knowledge and skills and labour market hiring practices for occupations. Occupations to which transferability exists are:

- Analytical Chemist (NOC 2112)
- Biochemist (NOC 2112)
- Biological Technician (NOC 2221)
- Biometrician (NOC 2161)
- Chemical Technician (NOC 2111)
- Eco-toxicologist (NOC 2121)
- Environmental Chemist (NOC 2112)
- Environmental Engineer (NOC 2131)
- Environmental Scientist (NOC 2121)

Local Employers⁶:

The following list of employers was randomly selected as examples of companies employing this occupation. An attempt was made to represent a company from each local board area.

Sanofi Pasteur
1755 Steeles West,
North York, ON M2R 3T4
Telephone: 416 667-2701
www.sanofipasteur.ca

Helix BioPharma
305 Industrial Parkway South, Unit 3,
Aurora, ON L4G 6X7
Telephone: 905 841-2300
Fax: 905 841-2244
www.helixbiopharma.com

For a more complete listing of potential employers please visit www.labourmarketinformation.ca.

ENDNOTES

¹Human Resources Skills Development Canada. National Occupational Classification System 2006. www5.hrsdc.gc.ca/NOC.

²Human Resources Skills Development Canada. Essential Skills Profiles. www.hrsdc.gc.ca/eng/workplaceskills/essential_skills/general/home.shtml

³Statistics Canada. 2006 Census. www.statcan.gc.ca.

⁴Ontario Labour Market www.tcu.gov.on.ca/eng/labourmarket/ojf/findoccupation.asp

⁵Human Resources Skills Development Canada. Matrix of Skills Transferability – January 2003. www.hrsdc.gc.ca.

⁶Working In Canada www.workinginCanada.gc.ca

Compliance Promotion Specialist

NOC 4165

Compliance promotion specialists provide technical, scientific, regulatory, and management advice to health care institutions (like hospitals) in relation to compliance with federal acts and regulations. They are involved in a variety of activities aimed at awareness and education, including writing and publishing information, conducting and participating in public outreach activities, and researching and promoting the most sustainable practices. Compliance Promotion specialists are experts on the regulations that govern the protection of environmental and human health and address sustainability issues in health care¹.

Places of Employment²:

- Government Departments
- Consulting firms
- Hospitals

Employment Requirements²:

- The minimum education requirement to become a compliance promotion specialist is a university undergraduate degree. Areas: Environmental Studies, Environmental Engineering, Pure and Applied Science, Environmental Health Policy

Local Educational Programs:

Program	Length	Certification	Institutions
Education and Environmental Studies	5 Years	Bachelor of Education and Bachelor of Environmental Studies	York University
Environmental Studies	4 Years	Bachelor of Arts	University of Toronto
Environmental Engineering	4 Years	Bachelor of Applied Science	University of Toronto
Environmental Engineering Science	N/A	Certificate	Ryerson University
Health Policy	4 Years	Bachelor of Health Studies	York University

Most important skills for occupation²:

- General learning ability to assist in developing government health policy by reviewing literature, conducting interviews, and collecting and analyzing statistical data. Ability to monitor and evaluate health care programs operated by government departments and agencies, and private organizations
- Verbal ability to present the views of associations and organizations to politicians, government officials, the media and the public, and to respond to internal and external program and policy information requests
- Numerical ability and clerical perception to compile, analyze and report statistical information provided by private and public health care institutions and organizations
- Innovative interest in producing newsletters, magazines and other documents to provide information to members of associations and organizations, and to the public. Innovative interest in designing health projects and programs
- Methodical interest in co-ordinating information to maintain, update and manage health care information databases, to assess compliance to health standards and identify remedial action if necessary, and to conduct evaluations and assessments of health projects and programs
- Directive interest in consulting with clients, providing advice to officials on issues like health promotion, sustainability, regulations, standards and financing.

The most important High School skills are²:

- Chemistry
- English
- Biology
- Legal Studies
- Math

Compliance Promotion Specialist

NOC 4165

Number of Employees by Age Range³:

Employment Distribution by Age	% of Total	All Occupations
15 – 24 years	3.4%	14.1%
25 – 44 years	51.2%	45.1%
45 - 64 years	44.0%	38.8%
65 years and over	1.4%	2.0%

Source: Statistics Canada, 2006 Census

Average Salary⁴

Average salary in this occupation:

\$ 60,971

Top Industries of Employment³:

Industry (NAICS)	% of Total Employed	Number of People Employed (Total 5850)	Number of Employers in York Region
62 Health Care and Social Assistance	22%	1287	37090
622 Hospitals	25.6%	1498	9605
91 Public Administration	27.9%	1632	16735
54 Professional, Scientific and Technical Services	14%	819	50085

Source: Statistics Canada, 2006 Census; Statistics Canada. Canadian Business Patterns Data. December 2003, June 2009.

Matrix of Skills Transferability⁵:

Transferability between occupations has been analyzed using the National Occupational Coding system. Judgments have been made based on an analysis of available information regarding the overlap of knowledge and skills and labour market hiring practices for occupations. Occupations to which transferability exists are:

- Education Policy Researchers, Consultants and Program Officers (NOC 4166)
- Government Managers - Health and Social Policy Development (NOC 0411)
- Managers in Health Care (NOC 0311)
- Social and Community Service Workers (NOC 4212)
- Social Policy Researchers, Consultants and Program Officers (NOC 4164)

Local Employers⁶:

The following list of employers was randomly selected as examples of companies employing this occupation. An attempt was made to represent a company from each local board area.

Southlake Regional Health Centre

596 Davis Drive,
Newmarket, ON L3Y 2P9
Telephone: 905 476-1800
www.southlakeregional.org

Ministry of Health and Long Term Care

108 - 465 Davis Drive,
Newmarket, ON L3Y 7T9
Telephone: 888 376-5197
www.gov.on.ca

For a more complete listing of potential employers please visit www.labourmarketinformation.ca.

ENDNOTES

¹Human Resources Skills Development Canada. National Occupational Classification System 2006. www5.hrsdc.gc.ca/NOC.

²Human Resources Skills Development Canada. Essential Skills Profiles. www.hrsdc.gc.ca/eng/workplaceskills/essential_skills/general/home.shtml

³Statistics Canada. 2006 Census. www.statcan.gc.ca.

⁴Ontario Labour Market www.tcu.gov.on.ca/eng/labourmarket/ojif/findoccupation.asp

⁵Human Resources Skills Development Canada. Matrix of Skills Transferability – January 2003. www.hrsdc.gc.ca.

⁶Working In Canada www.workingincanada.gc.ca

Ecotoxicologist - Medical Lab

NOC 3212

Ecotoxicologists specialize in toxicology that studies the harmful effects of chemical, biological, and physical agents on living organisms, including humans. They draw on a variety of scientific disciplines to predict, measure, and explain the frequency and severity of adverse effects of environmental toxins on living organisms. The work of Ecotoxicologists improves environmental protection through a greater understanding of the hazards and risks to which organisms are exposed. Sustainability is improved through this occupation through the replacement of these high risk toxins with more environmentally friendly alternatives¹.

Places of Employment²:

- Federal, Provincial, Municipal government departments
- Colleges, universities, and research institutes
- Biotechnology firms
- Environmental consulting firms
- Firms in chemical production
- Medical Laboratories

Employment Requirements²:

- The minimum educational requirement to work as an Ecotoxicologist is a university undergraduate degree. Areas: Toxicology, Biology, Biochemistry, Ecology, Microbiology
- The majority of positions do however require graduate studies in the above fields

Local Educational Programs:

Program	Length	Certification	Institutions
Applied Microbiology	4 years	Bachelor of Science	University of Toronto
Biology	4 Years	Bachelor of Science	York University
Biology	4 Years	Bachelor of Science	Ryerson University
Biochemistry	4 Years	Bachelor of Science	York University
Biochemistry	4 Years	Bachelor of Science	University of Toronto
Ecology	4 Years	Bachelor of Science	University of Toronto
Environment and Toxicology	4 Years	Bachelor of Science	University of Toronto
Pharmacology and Toxicology	4 years	Bachelor of Science	University of Toronto
Toxicology	4 Years	Bachelor of Science	University of Toronto
Applied Microbiology	4 years	Bachelor of Science	University of Toronto

Most important skills for occupation²:

- Form perception to take environmental samples to precisely read measured exposure levels and assess changes due to particular sources of medical pollution (Example: Surgical anesthetic waste)
- General learning ability to perform and conduct chemical and toxicological laboratory assessments on individual substances or contaminant mixtures in resources to determine if their effects on the environment and patients.
- Clerical perception to log patient samples and prepare them for testing
- Motor co-ordination and manual dexterity to clean and maintain medical laboratory equipment
- Methodical interest in compiling information derived from blood, tissue and other samples collected from patients
- Objective interest in setting up medical laboratory equipment
- Innovative interest in suggesting sustainable alternatives

The most important High School skills are²:

- Biology
- Chemistry
- Math
- English

Ecotoxicologist - Medical Lab

NOC 3212

Number of Employees by Age Range³:

Employment Distribution by Age	% of Total	All Occupations
15 – 24 years	11.0%	14.1%
25 – 44 years	51.8%	45.1%
45 - 64 years	36.6%	38.8%
65 years and over	0.6%	2.0%

Source: Statistics Canada, 2006 Census

Average Salary⁴

Average salary in this occupation:

\$ 40,543

Top Industries of Employment³:

Industry (NAICS)	% of Total Employed	Number of People Employed (Total 3750)	Number of Employers in York Region
62 Health Care and Social Assistance	19.6%	735	37090
622 Hospitals	51%	1913	9605
5417 Scientific Research and Development Services	9.5%	356	1695
325 Chemical Manufacturing	2.9%	109	4340

Source: Statistics Canada, 2006 Census; Statistics Canada. Canadian Business Patterns Data. December 2003, June 2009.

Matrix of Skills Transferability⁵:

Transferability between occupations has been analyzed using the National Occupational Coding system. Judgments have been made based on an analysis of available information regarding the overlap of knowledge and skills and labour market hiring practices for occupations. Occupations to which transferability exists are:

- Medical Laboratory Technologists and Pathologists' Assistants (NOC 3211)
- Biological Technician (NOC 2221)

Local Employers⁶:

The following list of employers was randomly selected as examples of companies employing this occupation. An attempt was made to represent a company from each local board area.

Southlake Regional Health Centre

596 Davis Drive,
Newmarket, ON L3Y 2P9
Telephone: 905 476-1800
www.southlakeregional.org

Ferring Pharmaceuticals

200 Yorkland Blvd.,
North York, ON M2J 5C1
Telephone: 416 490-0121
www.ferring.com

For a more complete listing of potential employers please visit www.labourmarketinformation.ca.

ENDNOTES

¹Human Resources Skills Development Canada. National Occupational Classification System 2006. www5.hrsdc.gc.ca/NOC.

²Human Resources Skills Development Canada. Essential Skills Profiles. www.hrsdc.gc.ca/eng/workplaceskills/essential_skills/general/home.shtml

³Statistics Canada. 2006 Census. www.statcan.gc.ca.

⁴Ontario Labour Market www.tcu.gov.on.ca/eng/labourmarket/ojf/findoccupation.asp

⁵Human Resources Skills Development Canada. Matrix of Skills Transferability – January 2003. www.hrsdc.gc.ca.

⁶Working In Canada www.workingincanada.gc.ca

eHealth Integration Consultant

NOC 2171

eHealth Integration Consultants assist in the deployment and support of Imaging Clinical Information Systems. These paperless medical record systems are part of the sustainability policies of many health care facilities. With these systems hospitals can provide care for a patient that is both more efficient and more effective. These individuals find placements within medical imaging and information management companies, and will be responsible for implementing these systems in various health care settings. They will be required to provide clinical workflow expertise to validate proposed project solutions and make recommendations to ensure customer clinical workflow requirements are met¹.

Places of Employment²:

- Medical Imaging and Information Management Companies
- Computer systems design and related services

Employment Requirements²:

- At least 6 years of health care industry knowledge with direct experience deploying or supporting information or imaging systems is required
- 3 or more years of experience with systems integrations using health care IT protocols (HL7, DICOM, etc.)
- Substantial knowledge of RIS/CIS/PACS and imaging workflow cycle
- Experience with multi-site RIS/CIS/PACS/EMR environments/configurations
- Familiarity with IHE and the connectivity framework
- Knowledge of current information systems technology and industry trends
- Minimum educational requirement of a Bachelor's Degree in Engineering, MIS, Computer Science, Health care, or related field, OR equivalent experience

Local Educational Programs:

Program	Length	Certification	Institutions
Environmental Engineering	4 Years	Bachelor of Applied Science	University of Toronto
Electrical and Computer Engineering	4 Years	Bachelor of Applied Science	University of Toronto
Computer Science and Engineering	4 Years	Bachelor of Applied Science	York University
Information Technology and the Health Industry	4 Years	Bachelor of Arts	York University
Information Systems	4 Year	Bachelor of Science	University of Toronto

Most important skills for occupation²:

- Demonstrates continuous learning orientation, particularly around new technologies, applications and medical developments and healthcare industry standards
- Ability to prioritize effectively and handle shifting priorities
- Ability to work independently and as part of a team with little guidance and supervision
- Exemplary written and verbal communication skills
- Strong interpersonal skills with excellent negotiation, facilitation and conflict resolution skills
- Proven presentation preparation and delivery skills to a diverse audience
- Excellent analytical and problem solving ability

The most important High School skills are²:

- Math
- Computer Science
- Physics
- English

eHealth Integration Consultant

NOC 2171

Number of Employees by Age Range³:

Employment Distribution by Age	% of Total	All Occupations
15 – 24 years	3.7%	14.1%
25 – 44 years	62.2%	45.1%
45 - 64 years	33.5%	38.8%
65 years and over	0.7%	2.0%

Source: Statistics Canada, 2006 Census

Average Salary⁴

Average salary in this occupation:

\$ 71,532

Top Industries of Employment³:

Industry (NAICS)	% of Total Employed	Number of People Employed (Total 68050)	Number of Employers in York Region
5415 Computer System Design Services	35%	23818	14515
91 Public Administration	11%	7486	16735

Source: Statistics Canada, 2006 Census; Statistics Canada, Canadian Business Patterns Data, December 2003, June 2009.

Matrix of Skills Transferability⁵:

Transferability between occupations has been analyzed using the National Occupational Coding system. Judgments have been made based on an analysis of available information regarding the overlap of knowledge and skills and labour market hiring practices for occupations. Occupations to which transferability exists are:

- Computer and Information Systems Managers (NOC 0213)
- Computer Engineers (NOC 2147)
- Computer Programmers and Interactive Media Developers (NOC 2174)
- Database Analysts and Data Administrators (NOC 2172)
- Software Engineers and Designers (NOC 2173)
- Web Designers and Developers (NOC 2175)

Local Employers⁶:

The following list of employers was randomly selected as examples of companies employing this occupation. An attempt was made to represent a company from each local board area.

Agfa HealthCare Corporation

77 Belfield Road,
Etobicoke, ON M9W 1G6
Telephone: 416 241-1110
www.agfa.com

IBM Canada Healthcare Solutions

3600 Steeles Avenue East,
Markham, ON L3R 9Z7
Telephone: 905 316-5000
www.ibm.com/ca

For a more complete listing of potential employers please visit www.labourmarketinformation.ca.

ENDNOTES

¹Human Resources Skills Development Canada. National Occupational Classification System 2006. www5.hrsdc.gc.ca/NOC.

²Human Resources Skills Development Canada. Essential Skills Profiles. www.hrsdc.gc.ca/eng/workplaceskills/essential_skills/general/home.shtml

³Statistics Canada. 2006 Census. www.statcan.gc.ca.

⁴Ontario Labour Market www.tcu.gov.on.ca/eng/labourmarket/ojf/findoccupation.asp

⁵Human Resources Skills Development Canada. Matrix of Skills Transferability – January 2003. www.hrsdc.gc.ca.

⁶Working In Canada www.workingincanada.gc.ca

Environmental Coordinator - Medical Manager

NOC 4161

Environmental Coordinators develop and implement environmental programs for companies and organizations that are not necessarily environmentally-based themselves. Coordinators are responsible for overseeing these programs and for reporting to upper management on their progress. An environmental coordinator may work in a health care institution and test the building and procedures practiced for possible contaminants created. These individuals also ensure equipment is working safely and in a sustainable manner¹.

Places of Employment²:

- Private companies
- Government departments
- Educational institutions
- Research organizations
- Consulting firms in health care

Employment Requirements²:

- The minimum educational requirement to work as an environmental coordinator is a technical diploma in an environmental program
- University undergraduate degree will make you more competitive
- Areas of study: Biology, Environmental Science, Environmental Engineering
- Certification is not necessary
- 12 months of experience in the field may be required by some companies

Local Educational Programs:

Program	Length	Certification	Institutions
Biology	4 years	Bachelor of Science	York University
Biology	4 years	Bachelor of Science	University of Toronto
Biology	4 Years	Bachelor of Science	Ryerson University
Environmental Engineering	4 Years	Bachelor of Applied Science	University of Toronto
Environmental Engineering Science	N/A	Certificate	Ryerson University

Most important skills for occupation²:

- General learning ability to conduct research and develop programs related natural resources, the environment, energy use, recycling and other scientific fields
- Verbal ability to prepare research reports and to promote public awareness and education on such issues as utilization of natural resources, the environment and reprocessing and reducing waste created in the health care field
- Numerical ability to conduct statistical analyses
- Innovative interest in co-ordinating information to conduct research and to develop policies and programs in the health care field
- Methodical interest in administering programs

The most important High School skills are²:

- Biology
- Chemistry
- Physics
- English
- Calculus

Number of Employees by Age Range³:

Employment Distribution by Age	% of Total	All Occupations
15 – 24 years	5.8%	14.1%
25 – 44 years	53.0%	45.1%
45 - 64 years	39.5%	38.8%
65 years and over	1.8%	2.0%

Source: Statistics Canada, 2006 Census

Average Salary⁴

Average salary in this occupation:

\$ 73,413

Environmental Coordinator - Medical Manager

NOC 4161

Top Industries of Employment³:

Industry (NAICS)	% of Total Employed	Number of People Employed (Total 3500)	Number of Employers in York Region
91 Public Administration	35.4%	1239	16735
5417 Scientific Research and Development Services	6%	210	1695
62 Health Care and Social Assistance	6%	210	37090

Source: Statistics Canada, 2006 Census; Statistics Canada. Canadian Business Patterns Data. December 2003, June 2009.

Matrix of Skills Transferability⁵:

Transferability between occupations has been analyzed using the National Occupational Coding system. Judgments have been made based on an analysis of available information regarding the overlap of knowledge and skills and labour market hiring practices for occupations. Occupations to which transferability exists are:

- Architecture and Science Managers (NOC 0212)
- Health Policy Researchers, Consultants and Program Officers (NOC 4165)
- Life Science Professionals (NOC 212)
- Professional Occupations in Engineering (NOC 213)

Local Employers⁶:

The following list of employers was randomly selected as examples of companies employing this occupation. An attempt was made to represent a company from each local board area.

Southlake Regional Health Centre

596 Davis Drive,
Newmarket, ON L3Y 2P9
Telephone: 905 476-1800
www.southlakeregional.org

Diversicare

2121 Argenta Road, Suite 301,
Mississauga, ON L5N 2X4
Fax: 905 821-2477
email: sreive@diversicare.ca
www.diversicare.ca

For a more complete listing of potential employers please visit www.labourmarketinformation.ca.

ENDNOTES

¹Human Resources Skills Development Canada. National Occupational Classification System 2006. www5.hrsdc.gc.ca/NOC.

²Human Resources Skills Development Canada. Essential Skills Profiles. www.hrsdc.gc.ca/eng/workplaceskills/essential_skills/general/home.shtml

³Statistics Canada. 2006 Census. www.statcan.gc.ca.

⁴Ontario Labour Market www.tcu.gov.on.ca/eng/labourmarket/ojf/findoccupation.asp

⁵Human Resources Skills Development Canada. Matrix of Skills Transferability – January 2003. www.hrsdc.gc.ca.

⁶Working In Canada www.workinginCanada.gc.ca

Environmental/Medical Sales Representative

NOC 6221

Environmental Medical Sales Representatives specialize in arranging appointments with medical professionals to educate and spread awareness of the medicine the company he/she represents is supplying. Specific emphasis is placed on the environmentally friendly procedures followed by the represented company during the manufacturing process of this medicine or medical instrument. These individuals fill a key link between medical and pharmaceutical companies and healthcare professionals¹.

Places of Employment²:

- Medical Instrumentation Sales
- Pharmaceutical Sales

Employment Requirements²:

- Minimum requirement of a bachelor's degree in a science related field
- Vast knowledge of the sustainability initiatives of the company and the protocols set by governing bodies
- Vast knowledge of the health care industry
- Experience in sales or an occupation related to the product may be required
- Fluency in English and French is an asset

Local Educational Programs:

Program	Length	Certification	Institutions
Biology	4 Year	Bachelor of Science	York University
Marketing	4 Year	Bachelor of Administrative Studies	York University
Business Management - Marketing	4 Year	Bachelor of Commerce	Ryerson University

Most important skills for occupation²:

- Ability to work independent
- Motivated seller
- A good communicator with the ability to explain the environmental and medical characteristics of the product of sale
- Ability to work in a team environment
- Customer-oriented approach

The most important High School skills are²:

- Marketing (business)
- Languages (English and French)
- Sciences

Number of Employees by Age Range³:

Employment Distribution by Age	% of Total	All Occupations
15 – 24 years	5.1%	14.1%
25 – 44 years	57.0%	45.1%
45 - 64 years	35.9%	38.8%
65 years and over	2.0%	2.0%

Source: Statistics Canada, 2006 Census

Average Salary⁴

Average salary in this occupation:

\$ 80,674

Environmental/Medical Sales Representative

NOC 6221

Top Industries of Employment³:

Industry (NAICS)	% of Total Employed	Number of People Employed (Total 3500)	Number of Employers in York Region
4145 Pharmaceutical Wholesale Trade	59%	2065	2080

Source: Statistics Canada, 2006 Census; Statistics Canada. Canadian Business Patterns Data. December 2003, June 2009.

Matrix of Skills Transferability⁵:

Transferability between occupations has been analyzed using the National Occupational Coding system. Judgments have been made based on an analysis of available information regarding the overlap of knowledge and skills and labour market hiring practices for occupations. Occupations to which transferability exists are:

- Agriologist (NOC 2123)
- Civil Engineering Technologist (NOC 2231)
- Computer Engineer (NOC 2147)
- Instrumentation Engineering Technologist (NOC 2133)
- Mechanical Engineer (NOC 2132)
- Sales Representative (Wholesale, Nontechnical) (NOC 6411)
- Telecommunications Technologist (NOC 7246)

Local Employers⁶:

The following list of employers was randomly selected as examples of companies employing this occupation. An attempt was made to represent a company from each local board area.

Ferring Pharmaceuticals
200 Yorkland Blvd.,
North York, ON M2J 5C1
Telephone: (416) 490 0121
www.ferring.com

Amico Accessories
85 Fulton Way
Richmond Hill, ON L4B 2N4
Telephone: 1 877 462-6426
Fax: 1 866 440-4986
www.amico.com

For a more complete listing of potential employers please visit www.labourmarketinformation.ca.

ENDNOTES

¹Human Resources Skills Development Canada. National Occupational Classification System 2006. www5.hrsdc.gc.ca/NOC.

²Human Resources Skills Development Canada. Essential Skills Profiles. www.hrsdc.gc.ca/eng/workplaceskills/essential_skills/general/home.shtml

³Statistics Canada. 2006 Census. www.statcan.gc.ca.

⁴Ontario Labour Market www.tcu.gov.on.ca/eng/labourmarket/ojf/findoccupation.asp

⁵Human Resources Skills Development Canada. Matrix of Skills Transferability – January 2003. www.hrsdc.gc.ca.

⁶Working In Canada www.workinginCanada.gc.ca

Environmental Medicine Specialist

NOC 3111

The practise of environmental medicine involves the understanding and treatment of health problems that arise from or are affected adversely by the interaction between people and the environment. These specialist physicians in laboratory medicine study the nature, cause and development of diseases in humans caused by environmental sources, and propose environmentally and human friendly solutions¹.

Places of Employment²:

- Hospitals
- Laboratories

Employment Requirements²:

- A Bachelor of Science degree in a related field is required
- Graduation from an approved medical school and specific specialty training are required
- Completion of the certifying examinations of the Royal College of Physicians and Surgeons of Canada and licensing by the provincial or territorial licensing authority are required
- Four to five years of specialty residency training are required

Local Educational Programs:

Program	Length	Certification	Institutions
Biology	4 Years	Bachelor of Science	University of Toronto
Biology	4 Years	Bachelor of Science	York University
Physiology	4 Years	Bachelor of Science	University of Toronto
Biotechnology	4 Years	Bachelor of Science	York University
Biotechnology	4 Years	Bachelor of Science	University of Toronto
Genes, Genetics and Biotechnology	4 Years	Bachelor of Science	University of Toronto

Most important skills for occupation²:

- General learning ability to apply medical knowledge in the investigation of the nature, cause and development of diseases in humans
- Verbal ability to use medical terminology and communicate with the public and other health care professionals
- Numerical ability to accurately analyze data from laboratory tests
- Innovative interest in mentoring by conducting research to further medical knowledge about the structural and functional changes caused by diseases, and to propose environmentally sustainable solutions to prevent the onset of these diseases

The most important High School skills are²:

- Math
- English
- Sciences

Number of Employees by Age Range³:

Employment Distribution by Age	% of Total	All Occupations
15 – 24 years	0.8%	14.1%
25 – 44 years	49.7%	45.1%
45 - 64 years	40.2%	38.8%
65 years and over	9.3%	2.0%

Source: Statistics Canada, 2006 Census

Average Salary⁴

Average salary in this occupation:

\$ 245,414

Environmental Medicine Specialist

NOC 3111

Top Industries of Employment³:

Industry (NAICS)	% of Total Employed	Number of People Employed (Total 12820)	Number of Employers in York Region
62 Health Care and Social Assistance	99%	12691	37090
91 Public Administration	1%	128	16735

Source: Statistics Canada, 2006 Census; Statistics Canada. Canadian Business Patterns Data. December 2003, June 2009.

Matrix of Skills Transferability⁵:

Transferability between occupations has been analyzed using the National Occupational Coding system. Judgments have been made based on an analysis of available information regarding the overlap of knowledge and skills and labour market hiring practices for occupations. Occupations to which transferability exists are:

- Chiropractors (NOC 3122)
- General Practitioners and Family Physician (NOC 3112)
- Managers in Health Care (NOC 0311)
- Naturopathic Physicians and Osteopathic Physicians (NOC 3123)

Local Employers⁶:

The following list of employers was randomly selected as examples of companies employing this occupation. An attempt was made to represent a company from each local board area.

Southlake Regional Health Centre

596 Davis Drive,
Newmarket, ON L3Y 2P9
Telephone: 905 476-1800
www.southlakeregional.org

First Health Care

7030 Woodbine Avenue, Suite 102,
Markham, ON L3R 6G2
Telephone: 905 305-9551
Toll Free: 1 877 305-9551
Fax: 905 477-1956
www.firsthealthcare.ca

For a more complete listing of potential employers please visit www.labourmarketinformation.ca.

ENDNOTES

¹Human Resources Skills Development Canada. National Occupational Classification System 2006. www5.hrsdc.gc.ca/NOC.

²Human Resources Skills Development Canada. Essential Skills Profiles. www.hrsdc.gc.ca/eng/workplaceskills/essential_skills/general/home.shtml

³Statistics Canada. 2006 Census. www.statcan.gc.ca.

⁴Ontario Labour Market www.tcu.gov.on.ca/eng/labourmarket/ojf/findoccupation.asp

⁵Human Resources Skills Development Canada. Matrix of Skills Transferability – January 2003. www.hrsdc.gc.ca.

⁶Working In Canada www.workinginCanada.gc.ca

Environmental Policy Analyst

NOC 4161

Environmental policy analysts define how environmental concerns are approached from an organizational or government perspective. They review and analyze trends and impacts in order to develop environmental policies. They work both in the private sector, establishing environmentally responsible business practises, and in the public sector, advising decision-makers and developing regulations. Environmental policy analysts face the ongoing challenge of creating policies, rules, and statutes that balance environmental concerns with the needs of consumers, businesses and governments. These individuals have the responsibility of converting a company's operation and reputation from environmentally deteriorating to a leader in innovation and sustainable production¹.

Places of Employment²:

- Federal, Provincial and Municipal Governments
- Educational Institutions
- Research Organizations
- Consulting Firms
- Environmental and Conservation Organizations

Employment Requirements²:

- Minimum educational requirement to work as an environmental policy analyst is a university undergraduate degree. Most applicable areas of study: Environmental policy, environmental studies, law, natural resource management, international development, geography

Local Educational Programs:

Program	Length	Certification	Institutions
Environmental Studies	4 year	Bachelor in Environmental Studies	York University
Environmental Studies	4 Year	Bachelor of Arts	University of Toronto
Environmental Management	4 Year	Bachelor of Bio-Resource Management	University of Guelph
Geography and Environmental Management	4 Year	Bachelor of Environmental Studies	University of Waterloo

Most important skills for occupation²:

- Ability to consult with businesses, governments and special interest groups
- Good oral communication skills to hold public reviews and participate in public hearings on major projects
- Ability to research independently, specifically on environmental trends, policies and legislation
- Ability to prepare reports and make presentations to stakeholders
- Ability to identify problems posed by projects and practices, and propose options for mitigating environmental impacts
- Ability to develop regulations and guidelines for the implementation of environmental laws and policies

The most important High School skills are²:

- English
- Biology
- Geography
- Social Studies
- Legal Studies

Number of Employees by Age Range³:

Employment Distribution by Age	% of Total	All Occupations
15 – 24 years	5.8%	14.1%
25 – 44 years	53.0%	45.1%
45 - 64 years	39.5%	38.8%
65 years and over	1.8%	2.0%

Source: Statistics Canada, 2006 Census

Average Salary⁴

Entry Level	Several Years Experience
\$ 51,000	\$ 90,000

Environmental Policy Analyst

NOC 4161

Top Industries of Employment³:

Industry (NAICS)	% of Total Employed	Number of People Employed (Total 3500)	Number of Employers in York Region
91 Public Administration	35%	1125	16735
5416 Management, Scientific and Technical Consulting Services	11%	385	5885
62 Health Care and Social Assistance	6%	210	37090

Source: Statistics Canada, 2006 Census; Statistics Canada. Canadian Business Patterns Data. December 2003, June 2009.

Matrix of Skills Transferability⁵:

Transferability between occupations has been analyzed using the National Occupational Coding system. Judgments have been made based on an analysis of available information regarding the overlap of knowledge and skills and labour market hiring practices for occupations. Occupations to which transferability exists are:

- Clean Energy Researcher (NOC 2134)
- Climate Change Specialist (NOC 2134)
- Emerging Energy Researcher (NOC 2134)
- Environmental Assessment Analyst (NOC 4161)
- Environmental Communications Officer (NOC 2263)
- Environmental Enforcement Officer (NOC 2263)
- Environmental Health Officer (NOC 2263)
- Environmental Lawyer (NOC 4112)
- Environmental Manager (NOC 0212)
- Environmental Training Specialist (NOC 1121)
- GIS Analyst (NOC 2174)
- Public Relations Specialist (NOC 1123)
- Traditional Ecological Knowledge Advisor (NOC 4164)

Local Employers⁶:

The following list of employers was randomly selected as examples of companies employing this occupation. An attempt was made to represent a company from each local board area.

Ministry of Health and Long Term Care

108 - 465 Davis Drive,
Newmarket, ON L3Y 7T9
Telephone: 888 376-5197
www.gov.on.ca

Cirrus Consulting Group

20 Eglinton Avenue West, Suite 1800,
Toronto, ON M4R 1K8
Telephone: 800 459-3413
www.cirrusconsultinggroup.com

For a more complete listing of potential employers please visit www.labourmarketinformation.ca.

ENDNOTES

¹Human Resources Skills Development Canada. National Occupational Classification System 2006. www5.hrsdc.gc.ca/NOC.

²Human Resources Skills Development Canada. Essential Skills Profiles. www.hrsdc.gc.ca/eng/workplaceskills/essential_skills/general/home.shtml

³Statistics Canada. 2006 Census. www.statcan.gc.ca.

⁴Ontario Labour Market www.tcu.gov.on.ca/eng/labourmarket/ojf/findoccupation.asp

⁵Human Resources Skills Development Canada. Matrix of Skills Transferability – January 2003. www.hrsdc.gc.ca.

⁶Working In Canada www.workingincanada.gc.ca

Environmental Quality Assurance Technician

NOC 2233

Quality technicians/technologists are responsible for testing, monitoring and ensuring the safety of natural resource supplies in health care institutions. They perform a variety of technical duties, for example inspecting, sampling, monitoring, and testing, and work with a variety of natural resources (eg. Water). These individuals routinely monitor compliance of these health care institutions with federally and provincially mandated natural resource quality requirements¹.

Places of Employment²:

- Federal, provincial and municipal government departments
- Colleges, Universities, and research institutes
- Environmental consulting firms
- Laboratories
- Firms in pharmaceuticals, manufacturing, food production and health care

Employment Requirements²:

- Minimum educational requirement to work as a water quality technician/technologist is a college technical diploma. Areas: chemistry, water resources, environmental technician/technology, environmental science, pure and applied science
- Quality technicians must be certified by their provincial association

Local Educational Programs:

Program	Length	Certification	Institutions
Environmental Management and Assessment	2 Years	Ontario College Diploma	Niagara College
Environmental Science Technician	2 Years	Ontario College Diploma	Sheridan Institute of Technology and Advanced Learning
Environmental Management	2 Years	Ontario College Diploma	Ridgetown College

Most important skills for occupation²:

- General learning ability to understand and use field equipment to monitor specific quality parameters (total dissolved solids, pH, etc.)
- Verbal and numerical ability to assist in the development of estimates, schedules, specifications and reports
- Objective interest in precision working to conduct work measurement and other studies and to set machine and equipment controls
- Methodical Interest in compiling operational or experimental data and in collecting and analyzing data and samples in support of quality assurance and industrial health and safety programs
- Ability to conduct bacteriological and chemical testing on samples collected using previous knowledge of standard laboratory procedures
- Interest in environmental safety and quality of natural resources

The most important High School skills are²:

- Chemistry
- Mathematics
- Biology
- Computer Science

Number of Employees by Age Range³:

Employment Distribution by Age	% of Total	All Occupations
15 – 24 years	11.4%	14.1%
25 – 44 years	56.8%	45.1%
45 - 64 years	31.5%	38.8%
65 years and over	0.2%	2.0%

Source: Statistics Canada, 2006 Census

Average Salary⁴

Average salary in this occupation:

\$ 56,445

Environmental Quality Assurance Technician

NOC 2233

Top Industries of Employment³:

Industry (NAICS)	% of Total Employed	Number of People Employed (Total 8580)	Number of Employers in York Region
325 Chemical Manufacturing	12%	1030	4340
334 Computer, Electronic and Electrical Products	11%	944	6175

Source: Statistics Canada, 2006 Census; Statistics Canada. Canadian Business Patterns Data. December 2003, June 2009.

Matrix of Skills Transferability⁵:

Transferability between occupations has been analyzed using the National Occupational Coding system. Judgments have been made based on an analysis of available information regarding the overlap of knowledge and skills and labour market hiring practices for occupations. Occupations to which transferability exists are:

- Technical Sales Specialists (NOC 6221)
- Chemical Technologists and Technicians (NOC 2211)

Local Employers⁶:

The following list of employers was randomly selected as examples of companies employing this occupation. An attempt was made to represent a company from each local board area.

IBM Canada Healthcare Solutions

3600 Steeles Avenue East,
Markham, ON L3R 9Z7
Telephone: 905 316-5000
www.ibm.com/ca

Kelly Scientific Resources

113 - 7100 Woodbine Avenue,
Markham, ON L3R 5J2
Telephone: 905 415-9203
www.kellyservices.ca

For a more complete listing of potential employers please visit www.labourmarketinformation.ca.

ENDNOTES

¹Human Resources Skills Development Canada. National Occupational Classification System 2006. www5.hrsdc.gc.ca/NOC.

²Human Resources Skills Development Canada. Essential Skills Profiles. www.hrsdc.gc.ca/eng/workplaceskills/essential_skills/general/home.shtml

³Statistics Canada. 2006 Census. www.statcan.gc.ca.

⁴Ontario Labour Market www.tcu.gov.on.ca/eng/labourmarket/ojif/findoccupation.asp

⁵Human Resources Skills Development Canada. Matrix of Skills Transferability – January 2003. www.hrsdc.gc.ca.

⁶Working In Canada www.workinginCanada.gc.ca

Environmental Research Scientist

NOC 2121

Environmental scientists support the environmental projects in their workplace with scientific analysis. They conduct scientific studies, prepare reports, and develop management plans to help make sure the environment is preserved. An example of the daily duty of an environmental research scientist includes visiting health care institutions and testing the area's air quality. If the tests show that this institution has exceeded allowed limits, then the environmental scientist will work with the health care institution management to make the building and processes more environmental friendly. These individuals may also train members of the health care institution to perform daily environmental checks to ensure that the institution is running according to policy standards¹.

Places of Employment²:

- Environmental offices
- Consulting companies
- Federal and provincial governments and health care institutions

Employment Requirements²:

- The minimum educational requirements to work as an environmental scientist is a university undergraduate degree. Areas: Environmental Science, Environmental Planning, Environmental Engineering, Forestry, Hydrology.
- Advanced graduate degrees will make applicants more competitive in the job market and will improve salary prospects. Professional designations may be required (professional engineer, biologist, or chemist, depending on the specialization chosen)

Local Educational Programs:

Program	Length	Certification	Institutions
Environmental Engineering	4 Years	Bachelor of Applied Science	University of Toronto
Planning and Environmental Assessment	5 Years (16 month co-op included)	Bachelor of Environmental Studies	University of Waterloo

Most important skills for occupation²:

- General learning ability to plan and conduct studies of the environmental conditions created by institutions in question in the surrounding areas
- Verbal ability to prepare reports and plans for institution management to improve the institutions environmental friendliness.
- Numerical ability to understand and apply advanced mathematics for research purposes
- Innovative interest in synthesizing information to conduct ecological and environmental impact studies and to prepare reports, and to develop new practices in biological research
- Directive interest in consulting to advise on issues related to research and the development of new products. These individuals must have the ability to supervise biological technologists and technicians and other scientists

The most important High School skills are²:

- Biology
- Chemistry
- Geography
- Physics
- Math

Number of Employees by Age Range³:

Employment Distribution by Age	% of Total	All Occupations
15 – 24 years	5.6%	14.1%
25 – 44 years	64.8%	45.1%
45 - 64 years	28.1%	38.8%
65 years and over	1.4%	2.0%

Source: Statistics Canada, 2006 Census

Average Salary⁴

Average salary in this occupation:

\$ 65,125

Environmental Research Scientist

NOC 2121

Top Industries of Employment³:

Industry (NAICS)	% of Total Employed	Number of People Employed (Total 5230)	Number of Employers in York Region
91 Public Administration	33%	1726	16735
5419 Other Professional Services	20%	1046	3000
62 Health Care and Social Assistance	15%	785	37090
61 Educational Services	6%	314	33540

Source: Statistics Canada, 2006 Census; Statistics Canada. Canadian Business Patterns Data. December 2003, June 2009.

Matrix of Skills Transferability⁵:

Transferability between occupations has been analyzed using the National Occupational Coding system. Judgments have been made based on an analysis of available information regarding the overlap of knowledge and skills and labour market hiring practices for occupations. Occupations to which transferability exists are:

- Agricultural and Biomedical Engineers (NOC 2148)
- Biochemists (NOC 2112)
- Specialists in Laboratory Medicine (NOC 3111)

Local Employers⁶:

The following list of employers was randomly selected as examples of companies employing this occupation. An attempt was made to represent a company from each local board area.

Canadian Center for Clinical Trials

8054 Yonge Street, 2nd floor,
Thornhill, ON L4J 1W3
Telephone: 289 597-0106
www.clinicaltrialsCanada.com

Johnson and Johnson Medical Products

200 Whitehall Drive,
Markham, ON L3R 0T5
Telephone: 905 946-2461
www.jnjCanada.com

For a more complete listing of potential employers please visit www.labourmarketinformation.ca.

ENDNOTES

¹Human Resources Skills Development Canada. National Occupational Classification System 2006. www5.hrsdc.gc.ca/NOC.

²Human Resources Skills Development Canada. Essential Skills Profiles. www.hrsdc.gc.ca/eng/workplaceskills/essential_skills/general/home.shtml

³Statistics Canada. 2006 Census. www.statcan.gc.ca.

⁴Ontario Labour Market www.tcu.gov.on.ca/eng/labourmarket/ojif/findoccupation.asp

⁵Human Resources Skills Development Canada. Matrix of Skills Transferability – January 2003. www.hrsdc.gc.ca.

⁶Working In Canada www.workinginCanada.gc.ca

Environmental Support Person - Medical

NOC 3413

• The environment plays an important role in creating a solid and sustainable health care institution. The promotion and maintenance of the physical, mental and social well-being of an individual and the community in its totality and control of the factors in physical, chemical and biological environment are essential. These individuals will support individual well being in a medical setting, while keeping in mind the well being of the environment. Prevention and control of pollution and waste is also important in this profession¹.

Places of Employment²:

- Hospital patient care institutions
- Nursing homes

Employment Requirements²:

- Completion of secondary school
- On-the-job training is provided
- May require completion of a 1) nursing aide or health care aide college or private institutional program, 2) a college nursing orderly program and supervised practical training
- Some health care facilities require completion of specialized courses like CPR, first aid and food handling/sterile processing

Local Educational Programs:

Program	Length	Certification	Institutions
Personal Support Worker	N/A	Certificate	triOS College
Personal Support Worker	N/A	Certificate	Everest College
Health Care Aide	N/A	Certificate	CDI College
Personal Support Worker	N/A	Certificate	Algonquin Careers Academy
Personal Support Worker	N/A	Certificate	Medix School

Most important skills for occupation²:

- General learning ability to provide basic patient care in establishments such as hospitals, nursing homes and clinics
- Manual dexterity and physical ability to aide patients
- Social interest in assisting hospital staff
- Methodical interest in copying routine procedures to provide basic patient care
- Interest in operating medical equipment (ex. To take blood pressure, temperature and pulse) and performing sustainable medical procedures as directed by nursing and hospital staff.

The most important High School skills are²:

- Sciences
- Math
- English

Number of Employees by Age Range³:

Employment Distribution by Age	% of Total	All Occupations
15 – 24 years	12.3%	14.1%
25 – 44 years	40.3%	45.1%
45 - 64 years	46.5%	38.8%
65 years and over	1.0%	2.0%

Source: Statistics Canada, 2006 Census

Average Salary⁴

Average salary in this occupation:

\$ 33,162

Environmental Support Person - Medical

NOC 3413

Top Industries of Employment³:

Industry (NAICS)	% of Total Employed	Number of People Employed (Total 56045)	Number of Employers in York Region
62 Health Care and Social Assistance	96%	53803	37090

Source: Statistics Canada, 2006 Census; Statistics Canada, Canadian Business Patterns Data, December 2003, June 2009.

Matrix of Skills Transferability⁵:

Transferability between occupations has been analyzed using the National Occupational Coding system. Judgments have been made based on an analysis of available information regarding the overlap of knowledge and skills and labour market hiring practices for occupations. Occupations to which transferability exists are:

- Licensed Practical Nurses (NOC 3233)
- Other assisting occupations in support of health services (NOC 3414)
- Personal Care Attendants – home care (NOC 4412)

Local Employers⁶:

The following list of employers was randomly selected as examples of companies employing this occupation. An attempt was made to represent a company from each local board area.

Southlake Regional Health Centre

596 Davis Drive,
Newmarket, ON L3Y 2P9
Telephone: 905 476-1800
www.southlakeregional.org

Markham Stouffville Hospital

381 Church Street,
Markham, ON L3P 7P3
Telephone: 905 472-7000
www.msh.on.ca

For a more complete listing of potential employers please visit www.labourmarketinformation.ca.

ENDNOTES

¹Human Resources Skills Development Canada. National Occupational Classification System 2006. www5.hrsdc.gc.ca/NOC.

²Human Resources Skills Development Canada. Essential Skills Profiles. www.hrsdc.gc.ca/eng/workplaceskills/essential_skills/general/home.shtml

³Statistics Canada. 2006 Census. www.statcan.gc.ca.

⁴Ontario Labour Market www.tcu.gov.on.ca/eng/labourmarket/ojf/findoccupation.asp

⁵Human Resources Skills Development Canada. Matrix of Skills Transferability – January 2003. www.hrsdc.gc.ca.

⁶Working In Canada www.workinginCanada.gc.ca

Environmental Training Specialist

NOC 0112

Environmental training specialists design and deliver environmentally focuses training to a wide variety of clientele in the health care sector. They develop specific courses to enhance environmental safety skills and knowledge using a number of formats and delivery techniques. They often collaborate with other qualified individuals to deliver training that requires a specific skill set and expertise. Environmental training specialists combine technical knowledge and research ability with strong communication skills and a talent for working with many kinds of people in order to convey information to teach others¹.

Places of Employment²:

- Human Resource departments throughout private and public sectors

Employment Requirements²:

- The minimum education requirement to work as an environmental training specialist is a university undergraduate degree. Areas: environmental science, environmental studies, education, natural science
- Several years of experience as a personnel officer or HR specialist are required

Local Educational Programs:

Program	Length	Certification	Institutions
Education and Environmental Studies	5 Years (or 4 years with summer school)	Combined Bachelor of Education and Bachelor of Environmental Studies	York University
Environmental Studies	4 Year	Bachelor of Arts	University of Toronto
Natural Sciences	4 Year	Bachelor of Science	University of Toronto - Scarborough Campus

Most important skills for occupation²:

- General learning ability to develop and implement relation policies and procedures and to administer employee development training and health and safety programs
- Verbal ability to organize and conduct employee courses
- Ability to assess client needs to design an appropriate training program or modify an existing program
- Ability to establish training objectives that support environmental skill development, proactive learning, personal growth and team work
- Ability to adjust course content or instruction methods based on feedback from clients
- Proficiency in multimedia programs and other learning tools
- Interest in keeping up with currently changing technology, practices and legislation

The most important High School skills are²:

- Biology
- Chemistry
- English
- Geography
- Computer Science

Number of Employees by Age Range³:

Employment Distribution by Age	% of Total	All Occupations
15 – 24 years	1.9%	14.1%
25 – 44 years	48.1%	45.1%
45 - 64 years	49.2%	38.8%
65 years and over	0.8%	2.0%

Source: Statistics Canada, 2006 Census

Average Salary⁴

Average salary in this occupation:

\$ 83,162

Environmental Training Specialist

NOC 0112

Top Industries of Employment³:

Industry (NAICS)	% of Total Employed	Number of People Employed (Total 16360)	Number of Employers in York Region
91 Public Administration	13%	2127	16735
62 Health Care and Social Assistance	8%	1309	37090
5416 Management, Administrative and Other Support	6%	982	5885
61 Educational Services	5%	818	33540

Source: Statistics Canada, 2006 Census; Statistics Canada. Canadian Business Patterns Data. December 2003, June 2009.

Matrix of Skills Transferability⁵:

Transferability between occupations has been analyzed using the National Occupational Coding system. Judgments have been made based on an analysis of available information regarding the overlap of knowledge and skills and labour market hiring practices for occupations. Occupations to which transferability exists are:

- Compliance Promotion Specialist (NOC 1122)
- Environmental Auditor (NOC 2263)
- Environmental Communications Officer (NOC 2263)
- Environmental Coordinator (NOC 4161)
- Post-Secondary Instructor (NOC 4012)

Local Employers⁶:

The following list of employers was randomly selected as examples of companies employing this occupation. An attempt was made to represent a company from each local board area.

Markham Stouffville Hospital

381 Church Street,
Markham, ON L3P 7P3
Telephone: 905 472-7000
www.msh.on.ca

Ministry of Health and Long Term Care

108 - 465 Davis Drive,
Newmarket, ON L3Y 7T9
Telephone: 888 376-5197
www.gov.on.ca

For a more complete listing of potential employers please visit www.labourmarketinformation.ca.

ENDNOTES

¹Human Resources Skills Development Canada. National Occupational Classification System 2006. www5.hrsdc.gc.ca/NOC.

²Human Resources Skills Development Canada. Essential Skills Profiles. www.hrsdc.gc.ca/eng/workplaceskills/essential_skills/general/home.shtml

³Statistics Canada. 2006 Census. www.statcan.gc.ca.

⁴Ontario Labour Market www.tcu.gov.on.ca/eng/labourmarket/ojf/findoccupation.asp

⁵Human Resources Skills Development Canada. Matrix of Skills Transferability – January 2003. www.hrsdc.gc.ca.

⁶Working In Canada www.workinginCanada.gc.ca

Green Process Chemist

NOC 2112

Environmental Chemists work to improve environmental health and safety using their knowledge of chemical properties of substances. They study how chemicals enter the environment and what effects they have and apply chemical theory to calculate impact of human activity on the environment. Environmental chemists are involved in promoting environmental sustainability, conservation, and protection, as well as in formulating regulations to protect the environment. They often coordinate with disciplines such as geochemistry, oceanography, limnology, hydrogeology, and toxicology¹.

Places of Employment²:

- Federal, provincial, municipal government departments
- Colleges, universities, and research institutes
- Biotechnology firms
- Waste management firms
- Forensic labs
- Firms in pharmaceuticals and manufacturing

Employment Requirements²:

- Minimum educational requirement to work as an environmental chemist is a university undergraduate degree (chemistry, environmental science, chemical engineering)
- Most positions in research require graduate studies
- Certification is not required, but many practitioners choose to belong to professional associations such as their provincial association for professional chemists.

Local Educational Programs:

Program	Length	Certification	Institutions
Chemical Engineering	4 years	Bachelor of Applied Science	University of Toronto
Environmental Chemistry	4 Years	Bachelor of Science	University of Toronto
Chemical Engineering	4 Years	Bachelor of Engineering	Ryerson University
Chemistry and Environmental Studies	4 Years	Bachelor of Science	York University

Most important skills for occupation²:

- General learning ability to conduct fundamental and applied research into the synthesis and properties of chemical compounds and the mechanisms of chemical reactions
- Verbal ability to participate in interdisciplinary research and development projects working with chemical engineers, biologists, microbiologists, agronomists, geologists and other professionals, and to prepare laboratory and research reports
- Numerical ability to conduct programs of sample data collections and analysis in order to identify and quantify environmental toxicants
- Spatial perception to visualize chemical reactions and changes in properties
- Innovative interest in synthesizing information to conduct research to develop new chemical formulations and processes that are environmentally friendly
- Interest in precision working with instruments to analyze, synthesize, purify, modify and characterize chemical and biochemical compounds

The most important High School skills are²:

- Biology
- Chemistry
- Math
- Physics
- English

Green Process Chemist

NOC 2112

Number of Employees by Age Range³:

Employment Distribution by Age	% of Total	All Occupations
15 – 24 years	3.6%	14.1%
25 – 44 years	70.2%	45.1%
45 - 64 years	25.1%	38.8%
65 years and over	1.2%	2.0%

Source: Statistics Canada, 2006 Census

Average Salary⁴

Average salary in this occupation:

\$ 64,884

Top Industries of Employment³:

Industry (NAICS)	% of Total Employed	Number of People Employed (Total 5230)	Number of Employers in York Region
3254 Pharmaceutical and Medical Manufacturing	36%	1883	2125
5419 Other Professional Services	19%	994	3000
91 Public Administration	9%	471	16735

Source: Statistics Canada, 2006 Census; Statistics Canada. Canadian Business Patterns Data. December 2003, June 2009.

Matrix of Skills Transferability⁵:

Transferability between occupations has been analyzed using the National Occupational Coding system. Judgments have been made based on an analysis of available information regarding the overlap of knowledge and skills and labour market hiring practices for occupations. Occupations to which transferability exists are:

- Chemical Engineers (NOC 2134)
- Geochemists (NOC 2113)
- Metallurgists and Material Scientists (NOC 2115)
- Molecular Biologists (NOC 2121)

Local Employers⁶:

The following list of employers was randomly selected as examples of companies employing this occupation. An attempt was made to represent a company from each local board area.

Astellas Pharma Canada Inc.

675 Cochrane Drive, Suite 500, West Tower
Markham, ON L3R 0B8
Telephone: 905 470-7990 or 1 800 575-1382
Fax: 905 470-7799
www.astellas.ca

Green Cross Pharmaceuticals Inc.

10909 Yonge Street,
Richmond Hill, ON L4C 3E3
Telephone: 905 508-7747

For a more complete listing of potential employers please visit www.labourmarketinformation.ca.

ENDNOTES

¹Human Resources Skills Development Canada. National Occupational Classification System 2006. www5.hrsdc.gc.ca/NOC.

²Human Resources Skills Development Canada. Essential Skills Profiles. www.hrsdc.gc.ca/eng/workplaceskills/essential_skills/general/home.shtml

³Statistics Canada. 2006 Census. www.statcan.gc.ca.

⁴Ontario Labour Market www.tcu.gov.on.ca/eng/labourmarket/ojif/findoccupation.asp

⁵Human Resources Skills Development Canada. Matrix of Skills Transferability – January 2003. www.hrsdc.gc.ca.

⁶Working In Canada www.workinginCanada.gc.ca

Health Care Hazardous Waste Technician

NOC 2263

These technicians are responsible for handling, processing, packaging and tracking hazardous waste for shipment, treatment, and disposal from their medical origin. These individuals can also be involved in coordinating hazardous waste programs in the Health Care sector. Hazardous Waste Technicians are specially trained on how to safely handle and dispose of chemical, biohazard, and radioactive wastes created in Health Care Institutions¹.

Places of Employment²:

- Health Care Institutions
- Consulting firms

Employment Requirements²:

- A bachelor's degree in a discipline such as food science, environmental studies, chemistry or health and safety is usually required. Areas: Chemistry, Environmental Science, Environmental Engineering, Waste Management, Toxicology
- In some establishments, several years of work related experience and the completion of in-house training courses may substitute for formal education

Local Educational Programs:

Program	Length	Certification	Institutions
Environmental Engineering	4 Years	Bachelor of Applied Science	University of Toronto
Environmental Engineering Science	N/A	Certificate	Ryerson University
Environment and Toxicology	4 Years	Bachelor of Science	University of Toronto
Pharmacology and Toxicology	4 years	Bachelor of Science	University of Toronto
Toxicology	4 Years	Bachelor of Science	University of Toronto
Chemistry and Environmental Studies	4 Years	Bachelor of Science	York University
Environmental Chemistry	4 Years	Bachelor of Science	University of Toronto

Most important skills for occupation²:

- General learning ability to inspect sanitary conditions of hospitals and other medical facilities and institutions, and to ensure that equipment, materials and production processes do not present safety and health hazards to employees and the general public.
- Verbal ability to conduct surveys and monitoring programs of the natural environment to identify sources of pollution
- Spatial and form perception to inspect facilities and to conduct safety, environmental and sustainability audits
- Methodical interest in handling samples and other materials for analyses
- Innovative interest in analyzing data
- Directive interest in speaking with employers, employees and the general public to deliver training and advise on public health, environmental protection and workplace safety issues

The most important High School skills are²:

- Chemistry
- Mathematics
- Biology
- Computer Science

Number of Employees by Age Range³:

Employment Distribution by Age	% of Total	All Occupations
15 – 24 years	6.0%	14.1%
25 – 44 years	46.1%	45.1%
45 - 64 years	47.1%	38.8%
65 years and over	0.8%	2.0%

Source: Statistics Canada, 2006 Census

Average Salary⁴

Average salary in this occupation:

\$ 65,106

Health Care Hazardous Waste Technician

NOC 2263

Top Industries of Employment³:

Industry (NAICS)	% of Total Employed	Number of People Employed (Total 7290)	Number of Employers in York Region
91 Public Administration	35%	2252	16735
62 Health Care and Social Assistance	6%	437	37090
3254 Pharmaceutical and Medical Manufacturing	4%	292	2125

Source: Statistics Canada, 2006 Census; Statistics Canada. Canadian Business Patterns Data. December 2003, June 2009.

Matrix of Skills Transferability⁵:

Transferability between occupations has been analyzed using the National Occupational Coding system. Judgments have been made based on an analysis of available information regarding the overlap of knowledge and skills and labour market hiring practices for occupations. Occupations to which transferability exists are:

- Analytical Chemist (NOC 2112)
- Ecotoxicologist (NOC 2121)
- Environmental Assessment Analyst (NOC 2211)
- Environmental Chemist (NOC 2112)
- Environmental Health Officer (NOC 2263)
- Environmental Scientist (NOC 2121)
- Hazardous Materials Specialist (NOC 7611)
- Pollution Control Technologist (NOC 2231)
- Waste Management Specialist (NOC 4101)

Local Employers⁶:

The following list of employers was randomly selected as examples of companies employing this occupation. An attempt was made to represent a company from each local board area.

Ministry of Health

108 - 465 Davis Drive,
Newmarket, ON L3Y 7T9
Telephone: 888 376-5197
www.gov.on.ca

York Central Hospital

10 Trench Street,
Richmond Hill, ON L4C 4Z3
Telephone: 705 728-9143
www.mackenziehealth.ca

For a more complete listing of potential employers please visit www.labourmarketinformation.ca.

ENDNOTES

¹Human Resources Skills Development Canada. National Occupational Classification System 2006. www5.hrsdc.gc.ca/NOC.

²Human Resources Skills Development Canada. Essential Skills Profiles. www.hrsdc.gc.ca/eng/workplaceskills/essential_skills/general/home.shtml

³Statistics Canada. 2006 Census. www.statcan.gc.ca.

⁴Ontario Labour Market www.tcu.gov.on.ca/eng/labourmarket/ojf/findoccupation.asp

⁵Human Resources Skills Development Canada. Matrix of Skills Transferability – January 2003. www.hrsdc.gc.ca.

⁶Working In Canada www.workinginCanada.gc.ca

Managers in Healthcare - Environmental

NOC 0311

Environmental managers are responsible for managing projects to lessen environmental impacts and ensure that all applicable legislative requirements are fulfilled. They are also involved in activities such as environmental awareness projects, sustainable initiatives, fundraising and public consultation programs. These individuals manage the work of others, but also may be involved in training personnel on environmental issues. To be successful as an environmental manager one must have a broad understanding of environmental issues combined with expertise and experience in project development and management¹.

Places of Employment²:

- Hospitals
- Medical Clinics
- Nursing Homes
- Community health care and social services agencies
- Medical laboratories

Employment Requirements²:

- Administrators are usually required to have the education and training of medical professionals (professional certification is required)
- Several years of experience in a relevant profession, including supervisory experience, are usually required
- Education in Environmental Management, Environmental Policy, Natural Resource Management and Natural Science is an asset.
- Certification is required

Local Educational Programs:

Program	Length	Certification	Institutions
Biology	4 Years	Bachelor of Science	University of Toronto
Biology	4 Years	Bachelor of Science	York University
Physiology	4 Years	Bachelor of Science	University of Toronto
Biotechnology	4 Years	Bachelor of Science	York University
Biotechnology	4 Years	Bachelor of Science	University of Toronto
Genes, Genetics and Biotechnology	4 Years	Bachelor of Science	University of Toronto
Environmental Studies	4 year	Bachelor in Environmental Studies	York University
Environmental Studies	4 Year	Bachelor of Arts	University of Toronto
Environmental Management	4 Year	Bachelor of Bio-Resource Management	University of Guelph
Geography and Environmental Management	4 Year	Bachelor of Environmental Studies	University of Waterloo

Most important skills for occupation²:

- General learning ability to plan and organize the delivery of health care services, and to develop evaluation systems to monitor quality and sustainability of health care
- Verbal ability to represent departments and establishments at meeting with government environmental officials, the public, media and other organizations
- Numerical ability to plan and control budgets of the department
- Directive interest in co-ordinating information to direct, control and evaluate the delivery and sustainability of health care services and procedures within the department
- Methodical interest in negotiating with a board of directors and senior managers to maintain and establish sustainable standards of health care and monitoring the use to services to ensure the effective use of resources
- Innovative interest in developing and implementing plans for sustainability programs and projects

Managers in Healthcare - Environmental

NOC 0311

The most important High School skills are²:

- Math
- Chemistry
- Biology
- English
- Physics
- Computer Science

Number of Employees by Age Range³:

Employment Distribution by Age	% of Total	All Occupations
15 – 24 years	1.2%	14.1%
25 – 44 years	35.1%	45.1%
45 - 64 years	60.8%	38.8%
65 years and over	2.9%	2.0%

Source: Statistics Canada, 2006 Census

Average Salary⁴

Average salary in this occupation:

\$ 75, 936

Top Industries of Employment⁵:

Industry (NAICS)	% of Total Employed	Number of People Employed (Total 7925)	Number of Employers in York Region
62 Health Care and Social Assistance	85%	6736	37090
91 Public Administration	4%	317	16735

Source: Statistics Canada, 2006 Census; Statistics Canada. Canadian Business Patterns Data. December 2003, June 2009.

Matrix of Skills Transferability⁵:

Transferability between occupations has been analyzed using the National Occupational Coding system. Judgments have been made based on an analysis of available information regarding the overlap of knowledge and skills and labour market hiring practices for occupations. Occupations to which transferability exists are:

- Government Managers - health and social policy development and program administration (NOC 0411)
- Senior Managers – health, education, social and community services (NOC 0014)

Local Employers⁶:

The following list of employers was randomly selected as examples of companies employing this occupation. An attempt was made to represent a company from each local board area.

Southlake Regional Health Centre

596 Davis Drive,
Newmarket, ON L3Y 2P9
Telephone: 905 476-1800
www.southlakeregional.org

York Central Hospital

10 Trench Street,
Richmond Hill, ON L4C 4Z3
Telephone: 705 728-9143
www.mackenziehealth.ca

For a more complete listing of potential employers please visit www.labourmarketinformation.ca.

ENDNOTES

¹Human Resources Skills Development Canada. National Occupational Classification System 2006. www5.hrsdc.gc.ca/NOC.

²Human Resources Skills Development Canada. Essential Skills Profiles. www.hrsdc.gc.ca/eng/workplaceskills/essential_skills/general/home.shtml

³Statistics Canada. 2006 Census. www.statcan.gc.ca.

⁴Ontario Labour Market www.tcu.gov.on.ca/eng/labourmarket/ojffindoccupation.asp

⁵Human Resources Skills Development Canada. Matrix of Skills Transferability – January 2003. www.hrsdc.gc.ca.

⁶Working In Canada www.workinginCanada.gc.ca

Medical School Instructor

NOC 4121

These individuals teach students at medical universities. They also conduct scientific research and publish their findings in professional and academic journals. These individuals have implemented environmental friendliness from the starting point of the medical profession, by teaching more sustainable procedures and methods to new students of the profession¹.

Places of Employment²:

- Medical Universities
- Government, industry, or private firms as consultants

Employment Requirements²:

- The minimum educational requirement to work as a post-secondary instructor is a Ph.D., although some post-secondary instructors hold two or more post-graduate degrees
- The degree should be attained with distinction, recognizing the candidates depth of knowledge and expertise
- These graduate degrees can be completed in any biological science related field
- Licences or professional certification is required for professors teaching future practitioners in medicine

Local Educational Programs:

Program	Length	Certification	Institutions
Biology	4 Years	Bachelor of Science	York University
Biology	4 Years	Bachelor of Science	University of Toronto
Biochemistry	4 Years	Bachelor of Science	University of Toronto
Medicine	4 years	Doctoral	University of Toronto

Most important skills for occupation²:

- General leaning ability to understand and apply the basic principles and techniques of a particular area of study, with sustainability of the procedure or technique in mind
- Verbal ability to prepare and deliver lectures to students and conduct laboratory sessions and discussion groups
- Innovative interest in synthesizing information to advance existing knowledge and develop new theories in specialized fields of study by conduction research. This is true for both the topic of interest and the sustainability of the topic. The ability to professionally publish findings in scholarly journals and developing curricula to match the findings is important
- Directive interest in advising on research matters and directing research programs of graduate students.
- Social interest in instructing undergraduate and graduate students, and encouraging them to engage in the topic of interest with a sustainable mindset.

The most important High School skills are²:

- Biology
- Chemistry
- Calculus
- Physics
- English
- Social Studies

Number of Employees by Age Range³:

Employment Distribution by Age	% of Total	All Occupations
15 – 24 years	0.8%	14.1%
25 – 44 years	38.4%	45.1%
45 - 64 years	54.7%	38.8%
65 years and over	6.1%	2.0%

Source: Statistics Canada, 2006 Census

Average Salary⁴

Average salary in this occupation:

\$ 96,876

Medical School Instructor

NOC 4121

Top Industries of Employment³:

Industry (NAICS)	% of Total Employed	Number of People Employed (Total 500)	Number of Employers in York Region
6113 Educational Services	100%	500	15

Source: Statistics Canada, 2006 Census; Statistics Canada, Canadian Business Patterns Data, December 2003, June 2009.

Matrix of Skills Transferability⁵:

Transferability between occupations has been analyzed using the National Occupational Coding system. Judgments have been made based on an analysis of available information regarding the overlap of knowledge and skills and labour market hiring practices for occupations. Occupations to which transferability exists are:

- Administrators - Post-Secondary Education (NOC 0312)
- College and Other Instructors (NOC 4131)
- Post-Secondary Teaching and Research Assistants (NOC 4122)

Local Employers⁶:

The following list of employers was randomly selected as examples of companies employing this occupation. An attempt was made to represent a company from each local board area.

University of Toronto - Medicine

1 King's College Circle,
Medical Sciences Building, Room 2109
Toronto, ON M5S 1A8
Telephone: 416 978-6585
www.facmed.utoronto.ca

University of Toronto - Dentistry

124 Edward Street,
Toronto, ON M5G 1G6
Telephone: 416 979-4927
www.utoronto.ca/dentistry/

For a more complete listing of potential employers please visit www.labourmarketinformation.ca.

ENDNOTES

¹Human Resources Skills Development Canada. National Occupational Classification System 2006. www5.hrsdc.gc.ca/NOC.

²Human Resources Skills Development Canada. Essential Skills Profiles. www.hrsdc.gc.ca/eng/workplaceskills/essential_skills/general/home.shtml

³Statistics Canada. 2006 Census. www.statcan.gc.ca.

⁴Ontario Labour Market www.tcu.gov.on.ca/eng/labourmarket/ojf/findoccupation.asp

⁵Human Resources Skills Development Canada. Matrix of Skills Transferability – January 2003. www.hrsdc.gc.ca.

⁶Working In Canada www.workinginCanada.gc.ca

Microbiologist

NOC 2121

Microbiologists study organisms that are too small to be seen by the naked eye, including bacteria, fungi, viruses, and protozoa. Microbiologists that specialize in the health care field are typically involved in projects that address issues of medical waste and contamination. Projects can include identifying and quantifying pathogens, as well as using micro-organisms such as bacteria to remove toxic substances, and promote environmental friendliness¹.

Places of Employment²:

- Hospitals
- Federal and Provincial governments
- Medical Laboratories
- Universities
- Pharmaceutical Companies

Employment Requirements²:

- The minimum education requirement to work as a microbiologist is a university undergraduate degree. Areas: Microbiology, Biology, Chemistry
- A master's or doctoral degree in biology or a related discipline is required for employment as a research scientist in microbiology
- Post-doctoral research experience is usually required before employment in academic departments or research institutions

Local Educational Programs:

Program	Length	Certification	Institutions
Applied Microbiology	4 Years	Bachelor of Science	University of Toronto
Biology	4 Years	Bachelor of Science	York University
Biology	4 Years	Bachelor of Science	University of Toronto
Biology	4 Years	Bachelor of Science	Ryerson University
Biological Chemistry	4 years	Bachelor of Science	University of Toronto
Chemistry	4 Years	Bachelor of Science	York University
Chemistry	4 Years	Bachelor of Science	University of Toronto

Most important skills for occupation²:

- General learning ability to conduct research into the structures, functions, ecology, biotechnology and genetics of micro-organisms to create sustainable solutions
- Verbal ability to understand the meaning and use of biological terms and to communicate both orally and in writing
- Numerical ability to understand and apply advanced mathematics for research purposes
- Spatial and form perception to study the structure and function of human and animal tissues and cells, and to study the identification of human and animal pathogens and toxins.
- Innovative interest in synthesizing information to study the effects and control of human and animal pathogens and toxins through sustainability initiatives
- Objective interest in precision working with instruments to conduct clinical and laboratory studies to test and evaluate the sustainability of bi-products of the drug and pharmaceutical manufacturing processes
- Directive interest in consulting to advise on issues related to development of new, sustainable practices and products

The most important High School skills are²:

- Biology
- Chemistry
- Math

Microbiologist

NOC 2121

Number of Employees by Age Range³:

Employment Distribution by Age	% of Total	All Occupations
15 – 24 years	5.6%	14.1%
25 – 44 years	64.8%	45.1%
45 - 64 years	28.1%	38.8%
65 years and over	1.4%	2.0%

Source: Statistics Canada, 2006 Census

Average Salary⁴

Average salary in this occupation:

\$ 65,125

Top Industries of Employment³:

Industry (NAICS)	% of Total Employed	Number of People Employed (Total 3700)	Number of Employers in York Region
5417 Scientific Research and Development Services – NAICS	21.3%	788	1695
91 Public Administration – NAICS	33%	1221	16735
Health Care and Social Assistance	15%	555	37090

Source: Statistics Canada, 2006 Census; Statistics Canada, Canadian Business Patterns Data, December 2003, June 2009.

Matrix of Skills Transferability⁵:

Transferability between occupations has been analyzed using the National Occupational Coding system. Judgments have been made based on an analysis of available information regarding the overlap of knowledge and skills and labour market hiring practices for occupations. Occupations to which transferability exists are:

- Science Managers (NOC 0212)
- Biochemists (NOC 2112)
- Specialists in Laboratory Medicine (NOC 3111)

Local Employers⁶:

The following list of employers was randomly selected as examples of companies employing this occupation. An attempt was made to represent a company from each local board area.

LifeLabs Medical Laboratory Services

372 Hollandview Trail, Suite 101,
Aurora, ON L4G 0A5
Telephone: 416 675-3637
www.lifelabs.com

CMC Medical Centre

7720 Markham Road,
Markham, ON L3S 4S1
Telephone: 905 471-5330
www.cmcmedical.ca

For a more complete listing of potential employers please visit www.labourmarketinformation.ca.

ENDNOTES

¹Human Resources Skills Development Canada. National Occupational Classification System 2006. www5.hrsdc.gc.ca/NOC.

²Human Resources Skills Development Canada. Essential Skills Profiles. www.hrsdc.gc.ca/eng/workplaceskills/essential_skills/general/home.shtml

³Statistics Canada. 2006 Census. www.statcan.gc.ca.

⁴Ontario Labour Market www.tcu.gov.on.ca/eng/labourmarket/ojif/findoccupation.asp

⁵Human Resources Skills Development Canada. Matrix of Skills Transferability – January 2003. www.hrsdc.gc.ca.

⁶Working In Canada www.workinginCanada.gc.ca

Occupational Hygienist

NOC 4161.2

Occupational hygienists maintain workplace health and safety by identifying, evaluating, and controlling exposure to chemical, physical, ergonomic, and biological hazards. The responsibilities of an occupational hygienist vary depending on the industry, workplace, and types of hazards affecting employees. Occupational hygienists most often work in companies to reduce stresses on the worker and to implement control measures that will reduce the incidences of impaired health and sickness and to identify inefficiencies in the workplace¹.

Places of Employment²:

- Federal, Provincial, and municipal government departments
- Industries in manufacturing
- Public organizations like hospitals and universities
- Consulting firms

Employment Requirements²:

- Minimum educational requirement to work as an occupation hygienist is a university under graduate degree. Areas: Occupational Health and Safety, Environmental Health, Toxicology, Pure and Applied Science, Environmental Science
- Certification is not mandatory, but most practitioners choose to become certified through the Canadian Registration Board of Occupational Hygienists

Local Educational Programs:

Program	Length	Certification	Institutions
Occupational Health and Safety	4 Years	Bachelor of Applied Sciences	Ryerson University
Occupational and Environmental Health	N/A	Master of Public Health	University of Toronto
Environment and Toxicology	4 Years	Bachelor of Science	University of Toronto
Pharmacology and Toxicology	4 years	Bachelor of Science	University of Toronto
Toxicology	4 Years	Bachelor of Science	University of Toronto

Most important skills for occupation²:

- General learning ability to study physical, chemical and biological hazards and stresses in the workplace
- Verbal ability to report and document investigations and conclusions and to prepare research reports. These individuals must also be able to teach safe work procedures, testify at hearings and report findings at scientific conferences or in scientific journals
- Numerical Ability to carry out statistical analyses of data
- Innovative interest in co-ordinating information to evaluate physical, chemical and biological hazards and stresses in the health care workplace.
- Directive interest in consulting to suggest changes to work environments and processes, to improve sustainability and environmental friendliness. Ability to communicate to provide information to workers and managers on how to reduce the risks of injury or illness from specific occupational hazards (improving environmental friendliness)
- Methodical interest in handling equipment to conduct research. Control physical, chemical and biological hazards

The most important High School skills are²:

- Biology
- Chemistry
- Calculus
- Physics
- English
- Math

Occupational Hygienist

NOC 4161.2

Number of Employees by Age Range³:

Employment Distribution by Age	% of Total	All Occupations
15 – 24 years	5.8%	14.1%
25 – 44 years	53.0%	45.1%
45 - 64 years	39.5%	38.8%
65 years and over	1.8%	2.0%

Source: Statistics Canada, 2006 Census

Average Salary⁴

Average salary in this occupation:

\$ 90,600

Top Industries of Employment³:

Industry (NAICS)	% of Total Employed	Number of People Employed (Total 3500)	Number of Employers in York Region
91 Public Administration	35.4%	1239	16735
5417 Scientific Research and Development Services	6%	210	1695
62 Health Care and Social Assistance	6%	210	37090

Source: Statistics Canada, 2006 Census; Statistics Canada. Canadian Business Patterns Data. December 2003, June 2009.

Matrix of Skills Transferability⁵:

Transferability between occupations has been analyzed using the National Occupational Coding system. Judgments have been made based on an analysis of available information regarding the overlap of knowledge and skills and labour market hiring practices for occupations. Occupations to which transferability exists are:

- Science Managers (NOC 0212)
- Health Policy Researchers, Consultants and Program Officers (NOC 4165)
- Professional Occupations in Engineering (NOC 213)
- Professional Occupations in Life Sciences (NOC 212)
- Professional Occupations in Physical Sciences (NOC 211)

Local Employers⁶:

The following list of employers was randomly selected as examples of companies employing this occupation. An attempt was made to represent a company from each local board area.

Public Services Health and Safety Association

4950 Yonge Street, Suite 902,
Toronto, ON M2N 6K1
Telephone: 416 250-2131
Fax: 416 250-7484
www.healthandsafetyontario.ca

Sanofi Pasteur Canada

1755 Steeles West,
North York, ON M2R 3T4
Telephone: 416 667-2701
www.sanofipasteur.ca

For a more complete listing of potential employers please visit www.labourmarketinformation.ca.

ENDNOTES

¹Human Resources Skills Development Canada. National Occupational Classification System 2006. www5.hrsdc.gc.ca/NOC.

²Human Resources Skills Development Canada. Essential Skills Profiles. www.hrsdc.gc.ca/eng/workplaceskills/essential_skills/general/home.shtml

³Statistics Canada. 2006 Census. www.statcan.gc.ca.

⁴Ontario Labour Market www.tcu.gov.on.ca/eng/labourmarket/ojf/findoccupation.asp

⁵Human Resources Skills Development Canada. Matrix of Skills Transferability – January 2003. www.hrsdc.gc.ca.


⁶Working In Canada www.workinginCanada.gc.ca



durham
workforce
authority

Peel Halton  Workforce
Development
Group

TWIG | TORONTO WORKFORCE
INNOVATION GROUP

Workforce 
Planning BOARD
OF YORK REGION & BRADFORD WEST GUILMBURY