Greening the Economy

Transitioning to New Careers

UTILITIES

CAREER PROFILES

Contents

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working together Simcoe Muskoka Workforce Development Board | durham workforce authority

Disclaimer

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EMPLOYMENT ONTARIO

Educational Flow Chart

HIGH SCHOOL

COLLEGE

- **Engineering**
  - Biochemical, Chemical, Civil, Computer Engineering, Design and Drafting Engineering, Construction, Electrical/Electronics, Engineering Technology, Mechanical
    - Technical Occupations related to Natural and Applied Sciences
      - Chemical Technologists and Technicians, Geological and Mineral Technologists and Technicians, Biological Technologists and Technicians, Forestry Technologists and Technicians, Landscape and Horticulture Technicians and Specialists, Civil Engineering Technologists and Technicians, Mechanical Engineering Technologists and Technicians, Electrical and Electronics Engineering Technologists and Technicians, Drafting Technologists and Technicians, Land Survey Technologists and Technicians, Inspectors in Public and Environmental Health and Occupational Health and Safety, Construction Inspectors, Mapping and Related Technologists and Technicians
- **Social Science**
  - Business, Commerce, Sales
    - Skilled Sales and Service Occupations
      - Technical Sales Specialists – Wholesale Trade
- **Science & Technology**
  - Agronomy, Architecture, Biology, Environmental Studies, Food Sciences, Forestry Technology, Geographic Surveying, Health & Safety, Horticulture, Petroleum Technology, Survey Technology
- **Trades**
  - Carpentry, Chemical Processing, Electrician Apprenticeship, Machining, Refrigeration and Air Conditioning Repair
    - Trades and Skilled Transport and Equipment Operators
      - Contractors and Supervisors, Other Construction Trades, Installers, Repairers and Servicers, Machinists and Machining and Tooling Inspectors, Electricians (Except Industrial and Power System), Carpenters, Refrigeration and Air Conditioning Mechanics, Stationary Engineers and Auxiliary Equipment Operators
    - Processing, Manufacturing and Utilities Supervisors and Skilled Operators
      - Supervisors, Petroleum, Gas and Chemical Processing and Utilities

WORKPLACE

- **On-the-job Training**
  - Clerical Occupations
    - Customer Service, Information and Related Clerks, Shippers and Receivers
  - Intermediate Sales and Service Occupations
    - Retail Sales Persons and Sales Clerks
  - Intermediate Occupations in Transport, Equipment Operation, Installation and Maintenance
    - Material Handlers
  - Processing and Manufacturing Machine Operators and Assemblers Assemblers
    - Rubber Processing, Machine Operators and Related Workers, Water and Waste Plant Operators, Plastics Processing Machine Operators, Motor Vehicle Assemblers, Inspectors, and Testers, Machining Tool Operators
  - Trades Helpers, Construction Labourers and Related Occupations
    - Construction Trades Helpers and Labourers
  - Labourers in Processing, Manufacturing and Utilities
    - Other Labourers in Processing, Manufacturing and Utilities

UNIVERSITY

- **Engineering**
  - Chemical, Civil, Computer Systems, Electrical or Electronics, Mechanical
    - Professional Occupations in Natural and Applied Sciences
      - Chemists, Geologists, Geochemists and Geophysicists, Biologists and Related Scientists, Agricultural Representatives, Consultants and Specialists, Civil Engineers, Mechanical Engineers, Electrical and Electronics Engineers, Chemical Engineers, Urban and Land Use Planners, Information Systems Analysts and Consultants
- **Science**
  - Agriculture, Chemistry, Computer Science, Biochemistry, Biology, Geology, Geophysics
    - Professional Occupations in Social Science, Education, Government Services and Religion
      - Natural and Applied Science Policy Researchers, Consultants and Program Officers, Natural and Applied Science Policy Researchers, Consultants and Program Officers, Business Development Officers and Marketing Researchers and Consultants
- **Social Science**
  - Urban and Regional Planning, Geography, Economics, Business, Commerce

Electrical and Electronics Engineer

NOC 2133

Electrical and electronics engineers design, plan, research, evaluate and test electrical and electronic equipment and systems. Electrical and Electronics Engineers may also be involved in regulatory procedures that review facilities to ensure they are complying with environmental policies and guidelines[1].

Places of Employment[1]:

- Utilities companies
- Communications companies
- Manufacturers of electrical and electronic equipment
- Consulting firms
- Manufacturing, processing and transportation industries
- Government

Employment Requirements[1]:

- A bachelor's degree in electrical or electronics engineering or in an appropriate related engineering discipline is required
- A master's or doctoral degree in a related engineering discipline may be required
- Licensing by a provincial or territorial association of professional engineers is required to approve engineering drawings and reports and to practice as a Professional Engineer (P.Eng.)
- Engineers are eligible for registration following graduation from an accredited educational program, and after three or four years of supervised work experience in engineering and passing a professional practice examination
- Supervisory and senior positions in this unit group require experience

Local Educational Programs:

Program	Length	Certification	Institutions
Electrical Engineering	3 years	Advanced Diploma	Georgian College
Electrical Engineering	4 years	Bachelor of Engineering	University of Ontario Institute of Technology
Electrical Engineering and Management	4 years, 5 year Industrial Internship Program	Bachelor of Engineering	Ryerson University
Electrical Engineering and Management	4 years	Bachelor of Engineering and Management	University of Ontario Institute of Technology
Electronics Engineering Technician/Technology	2 years (technician) 3 years (technology)	Diploma Advanced Diploma	Durham College, Centennial, Georgian College, Humber College, Seneca College, Sheridan College
Electronics Engineering Technology	3 years	Advanced Diploma	Durham College
Electromechanical Engineering Technician/Technology	2 years regular 3 years Co-op	Diploma Advanced Diploma	Durham College, Centennial College, George Brown College, Sheridan College
Energy Systems Engineering Technician/Technology	2 years (technician) 3 years (technology)	Diploma Advanced Diploma	Centennial College
Environmental Engineering	4 years	Bachelor of Engineering	University of Toronto
Environmental Technician/Technology	2-3 years	Diploma/Advanced Diploma	Durham College Georgian College
Environmental Techniques	1 year	Certificate	Durham College

The most important Essential Skills for this occupation are[2]:

- Reading text
- Writing text
- Document use
- Numeracy

Electrical and Electronics Engineer

NOC 2133

The most important High School subjects are[3]:

- Math
- Sciences
- Electronics
- English

Number of Employees by Age Range[4]:

Age Range	Durham	Peel Halton	Simcoe Muskoka	Toronto	York Region BWG	Total
15 – 24 years	10	80	10	80	45	225
25 – 44 years	290	1,140	80	1,765	930	4,205
45 years and over	345	1,090	55	1,225	780	3,495
Total Employees	645	2,310	145	3,070	1,755	7,925
% 45 years +	53.49%	47.19%	37.93%	39.90%	44.44%	39.05%

Source: Statistics Canada, 2006 Census

Average Salary

Based on 2006 Census Data[4]:	
Durham	$ 87,705
Peel Halton	$ 76,895
Simcoe Muskoka	$ 75,316
Toronto	$ 72,666
York Region BWG	$ 84,697
Ontario	$ 81,868

Top Industries of Employment for 5 regions[4,5]:

Across all five regions, there are 7,925 Electrical and Electronics Engineers employed. The top industries of employment are:

Industry (NAICS)	Number of People Employed	% of Total
541 Professional, scientific and technical services	2,660	33.56%
334 Computer and electronic product manufacturing	1,245	15.71%
221 Utilities	925	11.67%

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

Matrix of Skills Transferability[6]:

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 engineers (except software engineers and designers) (NOC 2147)
- Electrical and electronics engineering technologists and technicians (NOC 2241)

Local Employers:

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.

Fifth Light Technology
1155 North Service Rd. West, Unit #7
Oakville, ON., L6M 3E3
www.fifthlight.com

Ridgewood Electric Ltd.
120 Rutherford Road South
Brampton, Ontario l6W 3J5
www.ridgewood-electric.com

Hubbell Canada
870 Brock Road South
Pickering, ON, L1W 1Z8
www.hubbell-canada.com

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

ENDNOTES

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

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

[3]Service Canada. Job Futures – National Edition. 2007. www.jobfutures.ca.

[4]Statistics Canada. 2006 Census. www.statcan.gc.ca.

[5]Statistics Canada. Canadian Business Patterns Data. December 2003, June 2009. www.statcan.gc.ca.

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

Electrical and Electronics Engineering Technologists and Technicians

NOC 2241

Electrical and electronics engineering technologists and technicians may work independently or provide technical support and services in the design, development, testing, production and operation of electrical and electronic equipment and systems.[1]

Places of Employment[1]:

- Electrical utilities companies
- Communications companies
- Manufacturers of electrical and electronic equipment
- Other manufacturing, process and transportation industries
- Consulting firms
- Government

Employment Requirements[1]:

- Completion of a two- or three-year college program in electrical or electronics engineering technology, computer engineering technology, telecommunications technology or an equivalent is usually required for electrical or electronics engineering technologists
- Completion of a one- or two-year college program in electrical or electronics engineering technology is usually required for electrical or electronics engineering technicians
- Certification in electrical or electronics engineering technology or in a related field is available through provincial associations of engineering/applied science technologists and technicians and may be required for some positions
- A period of supervised work experience, usually two years, is required before certification

Local Educational Programs:

Program	Length	Certification	Institutions
Electrical Engineering	4 years, 5 year Industrial Internship Program	Bachelor of Engineering	Ryerson University
Electronics Engineering Technician/Technology	2 years (technician) 3 years (technology)	Diploma Advanced Diploma	Centennial, Humber College, Seneca College, Sheridan College
Electromechanical Engineering Technician/Technology	2 years regular 3 years Co-op	Diploma Advanced Diploma	Centennial College, George Brown College, Sheridan College
Energy Systems Engineering Technician/Technology	2 years (technician) 3 years (technology)	Diploma Advanced Diploma	Centennial College

Local Union and Training Centre

International Brotherhood of Electrical Workers Local 353
1377 Lawrence Ave East, North York, On M3A 3P8
Tel: 416-510-3530 Fax: 416-510-3531 www.ibew353.org

The most important Essential Skills for this occupation are[2]:

- Oral communication
- Working with others
- Computer use
- Thinking skills

The most important High School subjects are[3]:

- Math
- Sciences
- Electronics
- English

Number of Employees by Age Range[4]:

Employees by Age Range	Peel Halton	Toronto	York Region Brad WG	Total
15 – 24 years	195	180	125	500
25 – 44 years	985	1,025	430	2,440
45 years and over	665	840	550	2,055
Total Employees	1,845	2,045	1,105	4,995
% 45 years +	36.04%	41.08%	49.77%	41.14%

Source: Statistics Canada, 2006 Census

Average Salary

Average Salary based on 2006 Census Data[4]	
Peel Halton	$ 56,768
Toronto	$ 51,248
York Region Brad WG	$ 55,835
Ontario	$ 59,965

Electrical and Electronics Engineering Technologists and Technicians

NOC 2241

Top Industries of Employment for 3 regions[4,5]:

Across all three regions there are 4,995 electrical and electronics engineering technologists and technicians employed. The top industries of employment are:

Industry (NAICS)	Number of People Employed	% of Total	Number of Employers Dec 2003	Number of Employers Jun 2009	Absolute Change % 03 - 09	Change 03 – 09
334 Computer and electronic product manufacturing	1,115	22.32%	1,074	874	-200	-18.62%
541 Professional, scientific and technical services	790	15.82%	76,758	77,367	609	0.79%
221 Utilities	390	7.81%	180	281	101	56.11%

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

Additional Information[1]:

- There is mobility to other related occupations such as technical sales, electronics service technicians, instrument technicians and avionics technicians
- Progression to managerial positions in engineering, production or operations is possible with experience

Matrix of Skills Transferability[6]:

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:

- Electronic service technicians (household and business equipment) (2242)
- Industrial instrument technicians and mechanics (2243)
- Aircraft instrument, electrical and avionics mechanics, technicians and inspectors (2244)
- Drafting technologists and technicians (2253)

Local Employers:

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.

Rotoflex
420 Ambassador Drive
Mississauga, Ontario L5T 2R5
Telephone: 1 905 670 8700
Fax: 1 905 670 3402
www.rotoflex.com

IRIS Power
3110 American Drive
Mississauga, Ontario L4V 1T2
Telephone: 1 905 677 4824
Fax: 1 905 677 8498
www.irispower.com

Alutron Modules Inc.
420 Industrial Parkway S.
Aurora, Ontario L4G 3V7
Telephone: 1 905 727 8788
Fax: 1 905 727 8978
www.alutronmodules.com

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

ENDNOTES

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

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

[3]Service Canada. Job Futures – National Edition. 2007. www.jobfutures.ca.

[4]Statistics Canada. 2006 Census. www.statcan.gc.ca.
Note: These salaries represent an average of both unionized and non-unionized workers. Salaries may vary by workplace.

[5]Statistics Canada. Canadian Business Patterns Data. December 2003, June 2009. www.statcan.gc.ca.

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

Energy Conservation Engineer

NOC 2132

Energy conservation engineers research, design and develop machinery and systems for heating, ventilating and air conditioning, power generation, transportation, processing and manufacturing. They also perform duties related to the evaluation, installation, operation and maintenance of mechanical systems.[1]

Places of Employment[1]:

- Consulting firms
- Power-generating utilities companies
- Manufacturing, process and transportation companies
- Self employed

Employment Requirements[1]:

- A bachelor's degree in mechanical engineering or in a related engineering discipline is required
- A master's degree or doctorate in a related engineering discipline may be required
- Licensing by a provincial or territorial association of professional engineers is required to approve engineering drawings and reports and to practise as a Professional Engineer (P.Eng.)
- Engineers are eligible for registration following graduation from an accredited educational program, and after three or four years of supervised work experience in engineering and passing a professional practice examination
- Supervisory and senior positions in this unit group require experience

Local Educational Programs:

Program	Length	Certification	Institutions
Environmental Engineering	4 years	Bachelor of Engineering	University of Toronto
Environmental Engineering Science Certificate	N/A	Certificate in Environmental Engineering Science	Ryerson University
Industrial Engineering	4 years, 5 year Industrial Internship Program	Bachelor of Engineering	Ryerson University, University of Toronto
Mechanical Engineering	4 years, 5 year Industrial Internship Program	Bachelor of Engineering	Ryerson University, University of Toronto
Mechanical Engineering	2 years	Diploma	Centennial College, George Brown College, Seneca College, Sheridan College

Local Union and Training Centre

Power Workers' Union
244 Eglinton Ave. East, Toronto, Ontario M4P 1K2
Fax: 416 481-7115 www.pwu.ca

The most important Essential Skills for this occupation are[2]:

- Reading text
- Writing text
- Computer use
- Numeracy

The most important High School subjects are[3]:

- Math
- Physics
- Chemistry
- English

Number of Employees by Age Range[4]:

Employees by Age Range	Peel Halton	Toronto	York Region Brad WG	Total
15 – 24 years	80	75	55	210
25 – 44 years	1,665	1,985	885	4,535
45 years and over	1,420	1,315	895	3,630
Total Employees	3,165	3,375	1,835	8,375
% 45 years +	44.87%	38.96%	48.77%	43.34%

Source: Statistics Canada, 2006 Census

Average Salary

Average Salary based on 2006 Census Data[4]	
Peel Halton	$ 73,887
Toronto	$ 71,968
York Region Brad WG	$ 82,310
Ontario	$ 78,028

Energy Conservation Engineer

NOC 2132

Top Industries of Employment for 3 regions[4,5]:

Across all three regions there are 8,375 energy conservation engineers employed. The top industries of employment are:

Industry (NAICS)	Number of People Employed	% of Total	Number of Employers Dec 2003	Number of Employers Jun 2009	Absolute Change % 03 - 09	Change 03 – 09
541 Professional, scientific and technical services	3,050	36.48%	76,758	77,367	609	0.79%
336 Transportation equipment manufacturing	1,175	14.06%	646	566	-80	-12.38%
333 Machinery manufacturing	800	9.57%	2,035	1,828	-207	-10.17%
221 Utilities	660	7.89%	180	281	101	56.11%

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

Additional Information[1]:

- There is considerable mobility between mechanical engineering specializations at the less senior levels
- Engineers often work in a multidisciplinary environment and acquire knowledge and skills through work experience that may allow them to practise in associated areas of science, engineering, sales, marketing or management
- Mechanical engineers work closely with civil, electrical, aerospace, chemical, industrial and other engineers, and mobility is possible between some fields of specialization in these disciplines

Matrix of Skills Transferability[6]:

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:

- Industrial and manufacturing engineers (2141)
- Aerospace engineers (2146)
- Mechanical engineering technologists and technicians (2232)
- Industrial engineering and manufacturing technologists and technicians (2233)
- Drafting technologists and technicians (2253)

Local Employers:

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.

GE Water & Process Technologies
3239 Dundas Street West
Oakville, Ontario L6M 4B2
Telephone: 1 905 465 3030
Fax: 1 905 465 3050
www.gewater.com

Mobile Climate Control Inc.
7540 Jane St.
Vaughan, Ontario L4K 0A6
Telephone: 1 905 482 2750
Fax: 1 905 482 2751
www.mcc-hvac.com

Metcon Sales and Engineering Ltd.
15 Connie Crescent, Unit 3
Concord, Ontario L4K 1L3
Telephone: 1 905 738 2355
Fax: 1 905 738 5520
www.metconeng.com

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

ENDNOTES

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

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

[3]Service Canada. Job Futures – National Edition. 2007. www.jobfutures.ca.

[4]Statistics Canada. 2006 Census. www.statcan.gc.ca.
Note: These salaries represent an average of both unionized and non-unionized workers. Salaries may vary by workplace.

[5]Statistics Canada. Canadian Business Patterns Data. December 2003, June 2009. www.statcan.gc.ca.

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

General Office Clerks

NOC 1411

General office clerks prepare correspondence, reports, statements and other material, operate office equipment, answer telephones and perform clerical duties of a general nature according to established procedures. They are employed in offices throughout the public and private sectors.[1]

Places of Employment[1]:

- Insurance companies
- Federal, provincial and municipal governments
- Hospitals
- Electric power companies
- Business services firms
- Retail stores
- Telecommunication companies

Employment Requirements[1]:

- Completion of secondary school is usually required
- Completion of secondary school or college business or commercial courses is usually required

Local Educational Programs:

Program	Length	Certification	Institutions
Business Administration	4 years	Degree	Ryerson University, University of Toronto, York University
Business Administration	3 years	Diploma	Centennial College, George Brown College, Humber College, Seneca College, Sheridan College

The most important Essential Skills for this occupation are[2]:

- Oral communication
- Problem Solving
- Computer use

Number of Employees by Age Range[3]:

Employees by Age Range	Peel Halton	Toronto	York Region Brad WG	Total
15 – 24 years	2,295	4,390	1,280	7,965
25 – 44 years	5,730	13,540	3,625	22,895
45 years and over	5,565	11,610	3,100	20,275
Total Employees	13,590	29,540	8,005	51,135
% 45 years +	40.95%	39.30%	38.73%	39.65%

Source: Statistics Canada, 2006 Census

Average Salary

Average Salary based on 2006 Census Data[3]	
Peel Halton	$ 38,918
Toronto	$ 38,560
York Region Brad WG	$ 39,601
Ontario	$ 38,675

General Office Clerks

NOC 1411

Top Industries of Employment for 3 regions[3]:

Across all three regions, there are 51,135 general office clerks employed. The top industries of employment are:

Industry (NAICS)	Number of People Employed	% of Total
541 Professional, scientific and technical services	6,185	12.10%
561 Administrative and support services	3,325	6.50%
611 Educational services	3,045	5.95%
813 Religious, grant-making, civic, and professional and similar organizations	2,040	3.99%

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

Related Occupations[1]:

- Administrative Clerks (NOC 1441)
- Data Entry Clerks (NOC 1422
- Receptionists and Switchboard Operators (NOC 1414)
- Records Management and Filing Clerks (NOC 1413)
- Secretaries (Except Legal and Medical) (NOC 1241)
- Supervisors, General Office and Administrative Support Clerks (NOC 1211)

Local Employers:

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.

Atlantic Group
111 Progress Avenue
Scarborough, ON M1P 2Y9
www.atlantic.ca

City of Mississauga
300 City Centre Drive
Mississauga, Ontario L5B 3C1
www.mississauga.ca

Avenue Motor Works
569 Steven Court, Unit 3&4
Newmarket, Ontario L3Y 6Z3
www.avenueparts.com

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

ENDNOTES

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

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

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

Mechanical Engineering Technologists and Technicians

NOC 2232

Mechanical engineering technologists and technicians provide technical support and services or may work independently in mechanical engineering fields such as the design, development, maintenance and testing of machines, components, tools, heating and ventilating systems, power generation and power conversion plants, manufacturing plants and equipment.[1]

Places of Employment[1]:

- Consulting firms
- Engineering firms
- Manufacturing and processing companies
- Government

Employment Requirements[1]:

- Completion of a two- or three-year college program in mechanical engineering technology is usually required for mechanical engineering technologists
- Completion of a one- or two-year college program in mechanical engineering technology is usually required for mechanical engineering technicians
- Certification in mechanical engineering technology or in a related field is available through provincial associations of engineering/applied science technologists and technicians and may be required for some positions
- A period of supervised work experience, usually two years, is required before certification

Local Educational Programs:

Program	Length	Certification	Institutions
Environmental Engineering	4 years	Bachelor of Engineering	University of Toronto
Mechanical Engineering	4 years, 5 year Industrial Internship Program	Bachelor of Engineering	Ryerson University, University of Toronto
Mechanical Engineering Technology	3 years	Advanced Diploma	Centennial College, George Brown College, Seneca College, Sheridan College

The most important Essential Skills for this occupation are[2]:

- Reading text
- Writing
- Document use
- Computer use
- Oral communication
- Thinking skills

The most important High School subjects are[3]:

- Math
- Physics
- Chemistry
- Drafting

Number of Employees by Age Range[4]:

Employees by Age Range	Peel Halton	Toronto	York Region Brad WG	Total
15 – 24 years	80	60	80	220
25 – 44 years	480	285	105	870
45 years and over	345	270	125	740
Total Employees	905	615	310	1,830
% 45 years +	38.12%	43.90%	40.32%	40.44%

Source: Statistics Canada, 2006 Census

Average Salary

Average Salary based on 2006 Census Data[4]	
Peel Halton	$ 60,157
Toronto	$ 55,643
York Region Brad WG	$ 65,335
Ontario	$ 65,343

Mechanical Engineering Technologists and Technicians

NOC 2232

Top Industries of Employment for 3 regions[4,5]:

Across all three regions there are 1,830 mechanical engineering technologists and technicians employed. The top industries of employment are:

Industry (NAICS)	Number of People Employed	% of Total	Number of Employers Dec 2003	Number of Employers Jun 2009	Absolute Change % 03 - 09	Change 03 – 09
333 Machinery manufacturing	370	20.22%	2,035	1,828	-207	-10.17%
541 Professional, scientific and technical services	345	18.85%	76,758	77,367	609	0.79%
336 Transportation equipment manufacturing	235	12.84%	646	566	-80	-12.38%

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

Additional Information[1]:

- There is mobility to other related occupations such as technical sales or drafting technologists and technicians
- Progression to supervisory occupations such as mechanical construction supervisor, manufacturing supervisor or operations maintenance manager is possible with experience

Matrix of Skills Transferability[6]:

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:

- Drafting technologists and technicians (2253)

Local Employers:

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.

DBG
110 Ambassador Drive
Mississauga, Ontario L5T 2J2
Telephone: 1 905 670 1555
Fax: 1 905 362 2315
www.dbgcanada.com

PLITRON
8-601 Magnetic Drive,
Toronto, Ontario M3J 3J2
Telephone: 1 416 667 9914
Fax: 1 416 667 8928
www.plitron.com

Clover Tool Contractors
8271 Keele Street
Concord, Ontario L4K 1Z1
Telephone: 1 905 669 1999
Fax: 1 905 669 3565
www.clovertoolmfg.com

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

ENDNOTES

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

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

[3]Service Canada. Job Futures – National Edition. 2007. www.jobfutures.ca.

[4]Statistics Canada. 2006 Census. www.statcan.gc.ca.
Note: These salaries represent an average of both unionized and non-unionized workers. Salaries may vary by workplace.

[5]Statistics Canada. Canadian Business Patterns Data. December 2003, June 2009. www.statcan.gc.ca.

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

Supervisors, Petroleum, Gas and Chemical Processing and Utilities

NOC 9212

Supervisors in this unit group supervise and co-ordinate the activities of workers in Petroleum, Gas and Chemical Process Operators (9232), Chemical Plant Machine Operators (9421), Labourers in Chemical Products Processing and Utilities (9613), Water and Waste Plant Operators (9424), Stationary Engineers and Auxiliary Equipment Operators (7351) and Power Systems and Power Station Operators (7352).[1]

Places of Employment[1]:

- Petroleum and natural gas process companies
- Pipeline and petrochemical companies
- Chemical and pharmaceutical companies
- Water and waste treatment utilities
- Other industries and institutions

Employment Requirements[1]:

- Completion of secondary school is required
- Post-secondary education in chemical processing or sciences may be required for some occupations in this unit group
- Several years of experience as a senior operator in the same company or plant are usually required
- Some occupations in this unit group may require a specific licence or certification, such as a stationary engineer`s licence or refrigeration certification

Local Educational Programs:

Program	Length	Certification	Institutions
Chemical Engineering	4 years, 5 year Co-op	Bachelor of Engineering	Ryerson University, University of Toronto
Chemical Engineering Technology	3 years	Advanced Diploma	Seneca College, Sheridan College
Environmental Chemistry	4 years	Bachelor of Science	University of Toronto
Environmental Engineering Science Certificate		Certificate in Environmental Engineering Science	Ryerson University

Local Union and Training Centre

Power Workers' Union
244 Eglinton Ave. East, Toronto, Ontario M4P 1K2
Fax: 416 481-7115 www.pwu.ca

The most important Essential Skills for this occupation are[2]:

- Reading text
- Writing
- Document use
- Oral communication
- Numeracy

The most important High School subjects are[3]:

- English
- Computer related courses
- Math
- Industrial arts

Number of Employees by Age Range[4]:

Employees by Age Range	Peel Halton	Toronto	York Region Brad WG	Total
15 – 24 years	20	10	10	40
25 – 44 years	150	185	115	450
45 years and over	290	180	160	630
Total Employees	460	375	285	1,120
% 45 years +	63.04%	48.00%	56.14%	56.25%

Source: Statistics Canada, 2006 Census

Average Salary

Average Salary based on 2006 Census Data[4]	
Peel Halton	$ 66,734
Toronto	$ 62,678
York Region Brad WG	$ 76,707
Ontario	$ 81,139

Supervisors, Petroleum, Gas and Chemical Processing and Utilities

NOC 9212

Top Industries of Employment for 3 regions[4,5]:

Across all three regions there are 1,120 supervisors of petroleum, gas and chemical processing utilities employed. The top industries of employment are:

Industry (NAICS)	Number of People Employed	% of Total	Number of Employers Dec 2003	Number of Employers Jun 2009	Absolute Change % 03 - 09	Change 03 – 09
325 Chemical manufacturing	440	39.29%	881	690	-191	-21.68%
221 Utilities	365	32.59%	180	281	101	56.11%
324 Petroleum and coal products manufacturing	65	5.80%	70	55	-15	-21.43%

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

Additional Information[1]:

- There is some mobility between occupations with similar technological or licensing requirements within this group

Matrix of Skills Transferability[6]:

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:

There are no direct occupations linked to this occupation based on the matrix of skills transferability. However, the following have been identified as related occupations:

- Managers in Manufacturing and Utilities (NOC 091)
- Supervisors, Assembly and Fabrication (NOC 922)
- Central Control and Process Operators in Manufacturing and Processing (NOC 923)
- Chemical Technologists and Technicians (NOC 2211)

Local Employers:

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.

L.M Generating Power Co. Ltd.
1900 Shawson Drive
Mississauga, Ontario L4W 1R7
Telephone: 1 905 564 7322
Fax: 1 905 564 6917
www.lmgenpower.com

Build Max Limited
1244A Bloor Street West
Toronto, Ontario M6H 1N5
Telephone: 1 416 588 6999
Fax: 1 416 588 1433
www.buildmaxltd.ca

Energyshop.com
120 Newkirk Road, Unit 25, Suite 41
Richmond Hill, Ontario L4C 9S7
Telephone: 1 905 737 5041
Fax: 1 905 770 8432
www.energyshop.com

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

ENDNOTES

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

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

[3]Service Canada. Job Futures – National Edition. 2007. www.jobfutures.ca.

[4]Statistics Canada. 2006 Census. www.statcan.gc.ca.
Note: These salaries represent an average of both unionized and non-unionized workers. Salaries may vary by workplace.

[5]Statistics Canada. Canadian Business Patterns Data. December 2003, June 2009. www.statcan.gc.ca.

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

Utilities Managers

NOC 0912

This unit group includes managers who plan, organize, direct, control and evaluate the operations of utility companies or services or of heating oil distribution companies. The services provided include the distribution of water, electricity, natural gas and heating oil to residential, commercial and industrial consumers, waste disposal and waste recycling.[1]

Places of Employment[1]:

- Public utilities companies
- Private utilities companies
- Heating oil distribution companies

Employment Requirements[1]:

- A bachelor's degree or college diploma in an appropriate discipline is required. For example, electrical engineering is required for managers of transmission lines, and water resource technology for water supply managers
- Several years of experience as a supervisor in a related utilities operations department are required
- Professional engineer certification is usually required for managers of utility operations involved in the transmission and distribution of electrical power, and natural gas and heating oil

Local Educational Programs:

Program	Length	Certification	Institutions
Electrical Engineering	4 years, 5 year Industrial Internship Program	Bachelor of Engineering	Ryerson University
Electronics Engineering Technician/Technology	2 years (technician) 3 years (technology)	Diploma/ Advanced Diploma(3 years)	Centennial College, Seneca College, Sheridan College
Electromechanical Engineering Technician/Technology	2 years regular 3 years Co-op	Diploma Advanced Diploma	George Brown College, Sheridan College
Energy Systems Engineering Technician/Technology	2 years (technician) 3 years (technology)	Diploma/ Advanced Diploma(3 years)	Centennial College
Environment and Energy	4 years	Bachelor of Science	University of Toronto
Environmental Engineering	4 years	Bachelor of Engineering	University of Toronto
Environmental Engineering Science Certificate	N/A	Certificate in Environmental Engineering Science	Ryerson University
Environmental Systems Engineering Technology - Energy Management Program	3 years	Diploma	Humber College
Sustainable Energy	4 years	Bachelor of Engineering	University of Toronto

Local Union and Training Centre

Power Workers' Union
244 Eglinton Ave. East, Toronto, Ontario M4P 1K2
Fax: 416 481-7115 www.pwu.ca

The most important Essential Skills for this occupation are[2]:

- Reading text
- Writing
- Document use
- Oral communication
- Numeracy
- Thinking skills

Number of Employees by Age Range[4]:

Employees by Age Range	Peel Halton	Toronto	York Region Brad WG	Total
15 – 24 years	15	10	10	35
25 – 44 years	255	245	160	660
45 years and over	295	245	150	690
Total Employees	565	500	315	1,380
% 45 years +	52.21%	49.00%	47.62%	50.00%

Source: Statistics Canada, 2006 Census

Average Salary

Average Salary based on 2006 Census Data[4]	
Peel Halton	$ 102,469
Toronto	$ 109,327
York Region Brad WG	$ 205,124
Ontario	$ 107,422

Utilities Managers

NOC 0912

The most important High School subjects are[3]:

- Industrial Arts
- English
- Business

Top Industries of Employment for 3 regions[4,5]:

Across all three regions there are 1,380 utility managers employed. The top industries of employment are:

Industry (NAICS)	Number of People Employed	% of Total	Number of Employers Dec 2003	Number of Employers Jun 2009	Absolute Change % 03 - 09	Change 03 – 09
221 Utilities	745	54.38%	180	281	101	56.11%
562 Waste management & remediation services	240	17.52%	377	496	119	31.56%
418 Miscellaneous wholesaler-distributors	85	6.20%	5,838	4,805	-1,033	-17.69%

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

Additional Information[1]:

- Progression to senior management positions in the utility industry is possible with experience

Matrix of Skills Transferability[6]:

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:

There are no direct occupations linked to this occupation based on the matrix of skills transferability. However, the following have been identified as related occupations:

- Supervisors, Processing Occupations (NOC 921)

Local Employers:

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.

Oakville Hydro Corporation
861 Redwood Square
Oakville, Ontario L6J 5E3
Telephone: 1 905 825 9400
Fax: 1 905 825 4447
www.oakvillehydro.com

SunLit Technologies Inc.
2721 Markham Road, Unit 43
Scarborough, Ontario M1X 1L5
Telephone: 1 416 997 6527
Fax: 1 416 640 6405
www.sunlit.ca

PowerStream Inc.
161 Cityview Blvd.
Woodbridge, Ontario L4H 0A9
Telephone: 1 905 417 6900
Fax: 1 905 532 4404
www.powerstream.ca

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

ENDNOTES

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

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

[3]Service Canada. Job Futures – National Edition. 2007. www.jobfutures.ca.

[4]Statistics Canada. 2006 Census. www.statcan.gc.ca.
Note: These salaries represent an average of both unionized and non-unionized workers. Salaries may vary by workplace.

[5]Statistics Canada. Canadian Business Patterns Data. December 2003, June 2009. www.statcan.gc.ca.

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

Water and Waste Plant Operator

NOC 9424

Water plant operators monitor and operate computerized control systems and related equipment in water filtration and treatment plants to regulate the treatment and distribution of water. Waste plant operators monitor and operate computerized control systems and related equipment in wastewater, sewage treatment and liquid waste plants to regulate the treatment and disposal of sewage and wastes.[1]

Places of Employment[1]:

- Municipal governments
- Various manufacturing companies
- Other industries and institutions

Employment Requirements[1]:

- Completion of secondary school is usually required
- College, high school or industry training courses in water treatment pollution control are required
- Certification in water distribution or treatment (Levels I, II or III) is required
- Certification in workplace hazardous materials information system (WHMIS), transportation of dangerous goods (TDG), and courses in safety practices may be required
- On-the-job training is provided

Local Educational Programs:

Program	Length	Certification	Institutions
Chemical Engineering	4 years, 5 year Co-op	Bachelor of Engineering	Ryerson University, University of Toronto
Environmental Engineering Science Certificate	N/A	Certificate in Environmental Engineering Science	Ryerson University
Innis Environmental Studies Programs	4 years	Bachelor of Arts Degree/ Bachelor of Science	University of Toronto
Chemical Engineering Technology	3 years	Advanced Diploma	Seneca College, Sheridan College
Wastewater Collection	N/A	Certificate	Sheridan College
Water Distribution and Supply	N/A	Certificate	Sheridan College
Water Distribution and Wastewater Collection	N/A	Certificate	Sheridan College

The most important Essential Skills for this occupation are[2]:

- Writing
- Document use
- Numeracy

The most important High School subjects are[3]:

- Machine shop
- Sciences
- Math
- Computer basis
- English

Number of Employees by Age Range[4]:

Employees by Age Range	Peel Halton	Toronto	York Region Brad WG	Total
15 – 24 years	20	10	15	45
25 – 44 years	80	55	45	180
45 years and over	80	105	50	235
Total Employees	180	170	110	460
% 45 years +	44.44%	61.76%	45.45%	51.09%

Source: Statistics Canada, 2006 Census

Average Salary

Average Salary based on 2006 Census Data[4]	
Peel Halton	$ 49,128
Toronto	$ 57,445
York Region Brad WG	$ 59,223
Ontario	$ 53,928

Water and Waste Plant Operator

NOC 9424

Top Industries of Employment for 3 regions[4,5]:

Across all three regions there are 460 water and waste plant operators employed. The top industries of employment are:

Industry (NAICS)	Number of People Employed	% of Total	Number of Employers Dec 2003	Number of Employers Jun 2009	Absolute Change % 03 - 09	Change 03 – 09
221 Utilities	295	63.44%	180	281	101	56.11%
913 Local, municipal and regional public administration	40	8.60%	35	56	21	60.00%
562 Waste management & remediation services	35	7.53%	377	496	119	31.56%
332 Fabricated metal product manufacturing	30	6.45%	3024	2586	-438	-14.48%

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

Matrix of Skills Transferability[6]:

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:

There are no direct occupations linked to this occupation based on the matrix of skills transferability. However, the following have been identified as related occupations:

- Machine Operators and Related Workers in Metal and Mineral Products Processing (NOC 941)
- Machine Operators and Related Workers in Pulp and Paper Production and Wood Processing (NOC 943)
- Labourers in Processing, Manufacturing and Utilities (NOC 961)
- Central Control and Process Operators in Manufacturing and Processing (NOC 923)
- Supervisors, Processing Occupations (NOC 921)

Local Employers:

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.

Greenflow Environmental Svc
2-4151 Morris Drive
Burlington, Ontario L7L 5L5
Telephone: 1 905 333 3004
Fax: 1 905 333 1306
www.greenflow.com

Martech Group Inc.
50 Paxman Road, Unit 18
Etobicoke, Ontario M9C 1B7
Telephone: 1 416 291 4663
www.martechgroup.ca

H2flow
470 North Rivermede Road, Unit 7
Concord, Ontario L4K 3R8
Telephone: 1 905 660 9775
Fax: 1 905 660 9744
www.h2flow.com

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

ENDNOTES

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

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

[3]Service Canada. Job Futures – National Edition. 2007. www.jobfutures.ca.

[4]Statistics Canada. 2006 Census. www.statcan.gc.ca.
Note: These salaries represent an average of both unionized and non-unionized workers. Salaries may vary by workplace.

[5]Statistics Canada. Canadian Business Patterns Data. December 2003, June 2009. www.statcan.gc.ca.

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

working together
Simcoe Muskoka Workforce Development Board

durham workforce authority

Peel Halton Workforce Development Group

TWIG TORONTO WORKFORCE INNOVATION GROUP

Workforce Planning BOARD
OF YORK REGION & BRADFORD WEST GWILLIMBURY