



# CERTIFICATE PROGRAMS

The G. Raymond Chang School of Continuing Education offers career-oriented certificate programs in various areas of interest.

We continue to collaborate with our academic partners across the University to update our current programming and develop new certificates that respond to emerging industry trends.

Registered certificate program students are entitled to priority enrolment for all Chang School courses. For complete details on the advantages of early registration, application procedures, and deadline dates, visit [ryerson.ca/ce/certreg](http://ryerson.ca/ce/certreg).

# CERTIFICATE PROGRAMS

Aboriginal Knowledges and Experiences .....	21	Global Management Studies .....	68
Accounting – Finance .....	22	Graphic Communications .....	69
*Accounting, Advanced .....	23	Health Informatics .....	70
Advanced Safety Management .....	24	Health Services Management .....	71
Applied Digital Geography and GIS .....	25	Health Studies .....	72
Applied Digital Geography and GIS, Advanced .....	26	Human Resources Management .....	74
Architecture .....	27	Image Arts (with specializations in Film Studies or Photography Studies) .....	75
Architecture, Advanced .....	28	Information Systems Management .....	76
Business Communication .....	29	Interior Design, Fundamentals of .....	77
Business Decision Analysis .....	30	*Internationally Educated Engineers Qualification Bridging (IEEQB) .....	(See note below)
Business French and Translation .....	31	Landscape Design .....	78
Business Management .....	32	Leadership in Organizations .....	79
Canadian Social Work Practice .....	33	Lighting Design .....	80
Caribbean Studies .....	34	*Local Economic Development .....	81
Community Engagement, Leadership, and Development .....	35	Media Writing Fundamentals .....	82
Computer Programming Applications .....	37	Mental Health and Addictions .....	83
Computer Security and Digital Forensics .....	38	Music: Global and Cultural Contexts .....	84
Criminal Justice and Criminology .....	39	News Studies .....	85
Data Analytics, Big Data, and Predictive Analytics .....	40	Nonprofit and Voluntary Sector Management .....	86
Demographic Analysis .....	42	Nursing Leadership and Management, Advanced .....	87
Design for Arts and Entertainment .....	43	Occupational Health and Safety .....	89
Design Management .....	44	Photography Studies .....	90
Digital Art Production .....	45	Preparation for Practice in Canada for Internationally Educated Professionals in Nutrition .....	91
Disaster and Emergency Management .....	46	Privacy, Access, and Information Management .....	92
Economics .....	47	Project Management .....	94
Economics and Finance .....	48	Project Management for Technical Professionals .....	96
Energy Management and Innovation .....	49	Psychology .....	97
English Literature and Popular Culture .....	50	Public Administration and Governance .....	99
Enterprise Architecture and Infrastructure Management .....	51	Public Administration and Governance, Advanced .....	100
Entrepreneurship and Small Business .....	52	Public Administration and Leadership .....	101
Environmental Sciences .....	53	Public Relations .....	102
Ethics .....	54	Publishing .....	103
Facility and Property Management .....	56	Retail Management .....	105
Fashion Coordination and Styling .....	57	Robotics and Embedded Systems .....	106
Film Studies .....	58	Social Sciences and Humanities Foundations .....	107
Financial Mathematics Modeling .....	60	Spanish, Proficiency in .....	109
Financial Planning .....	61	Strategic Marketing .....	110
Food Security .....	62	Sustainability Management and Enterprise Process Excellence .....	112
Food Security .....	62		
French, Proficiency in .....	63		
Fundraising Management .....	64		
Gerontology, Aging and .....	66		

## Courses and Programs FAQ . . . . .114

*\*New certificate launched for the 2017-2018 academic year*

*\*The Faculty of Engineering and Architectural Science at Ryerson University has developed the Internationally Educated Engineers Qualification Bridging (IEEQB) Program specifically for internationally educated engineers to provide them with an opportunity to meet the academic requirements for professional engineering licensure in Ontario. For more information, visit [ryerson.ca/feas/programs/ieeqb](http://ryerson.ca/feas/programs/ieeqb).*

# ABORIGINAL KNOWLEDGES AND EXPERIENCES

This certificate provides a broad orientation to Aboriginal experiences in Canada and how Aboriginal peoples have been impacted by laws, policies, and practices in the health, social services, human resources, and other sectors. Aboriginal and non-Aboriginal students, regardless of their academic or professional background, have the opportunity to learn about Aboriginal lived experiences through curriculum from Aboriginal perspectives taught by Aboriginal scholars and experienced community teachers.

For detailed certificate and program information, please visit [ryerson.ca/ce/aboriginal](http://ryerson.ca/ce/aboriginal).

## Admission Criteria

It is recommended that applicants have the following:

OSSD with six Grade 12 U or M credits, including a credit in English with a minimum grade of 70 percent; or equivalent; or mature student status.

Individuals who do not meet the above stated admission criteria may seek advice and assistance from the Transitions to Certificate Program with Spanning the Gaps or from Ryerson Aboriginal Student Services.

## Certificate Requirements

The successful completion of six courses, with a cumulative grade point average of 1.67 or higher, is required for the certificate.

## Required Courses\*

- CINT 922 Interdisciplinary Studies: Intro to Aboriginal Worldviews
- CINT 923 Interdisciplinary Studies: Canada's Story: An Aboriginal Perspective

## Electives (select four)

- CCLD 450 Early Childhood Studies: Indigenous Early Learning
- CCYC 905 Child and Youth Care: An Indigenous Perspective on CYC
- CENG 203 English Literature: The Literature of Native Peoples
- CENG 511 English Literature: The Art of Writing Life
- CFNY 510 Food Security: Indigenous Food Systems in Canada
- CINT 910 Interdisciplinary Studies: First Nations Issues
- CMWF 108 Midwifery: Aboriginal Childbearing
- CNPF 574 Media Studies: Aboriginal Visual Culture in Canada
- CPPA 124 Politics and Public Administration: Indigenous Politics and Governance
- CSWP 925 Social Work: Strong Helpers' Teachings
- CSWP 933 Social Work: Indigenous Health and Well Being
- CVSW 932 Social Work: Aboriginal Knowledges in Practice

*\*Note: Undergraduate students who have completed SWP 435 may apply for a course substitution towards CINT 922. Students who complete INT 922/CINT 922 may not apply for a course substitution towards SWP 435.*

“Understanding Aboriginal identities can be complex, shaped by historical factors, social and political contexts, individual characteristics, and family dynamics. Learning these dynamics through the certificate will enhance academic success, foster positive environments, and relationships.”

**MELISSA COMPTON**  
LEARNER, CERTIFICATE IN ABORIGINAL  
KNOWLEDGES AND EXPERIENCES



# ACCOUNTING – FINANCE

*NOTE: This certificate program may be completed entirely at a distance. Visit the distance education website at [ryerson.ca/ce/de](http://ryerson.ca/ce/de) for further information.*

This program is designed for those who want a good understanding of the current principles and practices in accounting–finance in Canada. The required courses provide a strong grounding in financial and management accounting skills. Students who plan to continue on to the Advanced Accounting certificate should choose two electives that provide the necessary prerequisites for that certificate. If you are working towards completing the CPA preparatory requirements, please refer to the list of Ryerson courses on the Chang School website (at [ryerson.ca/ce/calendar](http://ryerson.ca/ce/calendar)) before choosing your electives.

The courses may also be used towards the Accounting Minor or Finance Minor in the School of Business Management. Note: Business Management no longer offers an Accounting Major or Finance Major.

Regarding transferability, the Accounting (CACC) and Finance (CFIN) courses in the Accounting – Finance certificate are not applicable to the School of Accounting and Finance curriculum. Students will be expected to take the Accounting (AFA) and Finance (AFF) courses if they are accepted into the School of Accounting and Finance undergraduate program.

## Admission Criteria

It is recommended that applicants have the following:

OSSD with six Grade 12 U or M credits, or equivalent, or mature student status with experience in business.

## Certificate Requirements

The successful completion of eight courses, with a cumulative grade point average of 1.67 or higher, is required for the certificate. After completion of the six required courses, students then select a further two courses from the electives. Up to four course credits may be granted on the basis of courses successfully completed at other institutions.

## Required Courses\*

- CACC 110 Accounting: Financial Accounting
- CACC 410 Accounting: Management Accounting
- CACC 414 Accounting: Intermediate Accounting I
- CACC 514 Accounting: Intermediate Accounting II
- CFIN 300 Finance: Managerial Finance I
- CFIN 401 Finance: Managerial Finance II

*\*Internationally educated professionals who have received a waiver from the CPA for CACC 110 and CACC 410 may apply to the academic coordinator to waive these courses for certificate requirements. Students granted this waiver must complete four Elective courses instead of two.*

## Electives (select two)

- CACC 504 Accounting: Accounting Cases and Concepts I
- CACC 521 Accounting: Auditing
- CACC 522 Accounting: Taxation for Managers and Financial Planners
- CACC 621 Accounting: Internal Auditing
- CFIN 502 Finance: Personal Financial Planning
- CITM 102 Information Technology Management: Business Information Systems I
- CLAW 122 Law: Business Law
- CQMS 102 Quantitative Methods: Business Statistics I

*Note: Some of the courses in the Accounting – Finance certificate program may qualify for exemption in the Chartered Professional Accountants of Ontario's programs. For more details, refer to the Professional Designation at [ryerson.ca/ce/designations](http://ryerson.ca/ce/designations).*

## Note to registered certificate program students

*Electives*

CACC 507 and CACC 607 deleted.

## Professional Development

You can receive an acknowledgement of professional achievement once you have successfully completed two or three courses as follows:

**Professional Development Award: Introductory Accounting** requires completion of (CACC 110 and CACC 410) or (CACC 100, CACC 333, and CACC 406).

Refer to page 119 for more information.

# ADVANCED ACCOUNTING

Building on the skills learned in the Accounting – Finance certificate, the Certificate in Advanced Accounting further develops technical skills in managerial accounting, finance, taxation, and accounting information systems. The certificate develops students' knowledge of laws around taxation and other accounting-finance practices. Students will also develop competencies in analyzing, identifying and prioritizing issues; evaluating alternatives; and making appropriate recommendations that are feasible, ethical, and professionally sound. Students will be exposed to international accounting standards.

The courses may also be used towards the Accounting Minor or Finance Minor in the School of Business Management. Note: Business Management no longer offers an Accounting Major or Finance Major.

Regarding transferability, the Accounting (CACC) courses in the Advanced Accounting certificate are not applicable to the School of Accounting and Finance curriculum. Students will be expected to take the Accounting (AFA) and Finance (AFF) courses if they are accepted into the School of Accounting and Finance undergraduate program.

All of the courses in the Advanced Accounting certificate are applicable to the CPA preparatory course requirements.

## Admission Criteria

Eligible applicants must have the following:

**Certificate in Accounting – Finance** or equivalent as well as all of the following courses or equivalents:

- CACC 504
- CACC 522
- CITM 102
- CLAW 122

## Certificate Requirements

The successful completion of seven courses, with a cumulative grade point average of 1.67 or higher, is required for the certificate.

## Required Courses

- CACC 703 Accounting: Advanced Financial Accounting
- CACC 742 Accounting: Canadian Business Taxation I
- CACC 801 Accounting: Intermediate Cost and Management Accounting
- CACC 803 Accounting: Advanced Management Accounting
- CACC 842 Accounting: Canadian Business Taxation II
- CITM 696 Information Technology Management: Accounting Information Systems
- CLAW 603 Law: Advanced Business Law



# ADVANCED SAFETY MANAGEMENT

*NOTE: This certificate program may be completed entirely at a distance. Visit the distance education website at [ryerson.ca/ce/de](http://ryerson.ca/ce/de) for further information.*

This certificate program in Advanced Safety Management was developed in cooperation with the Ryerson School of Occupational and Public Health. This is a unique offering of safety management courses that are part of the Bachelor of Applied Science degree in the Occupational Health and Safety option within the School of Occupational and Public Health. It is applicable to all types of industries, and is designed for those individuals who have completed Ryerson's Certificate in Occupational Health and Safety, or equivalent, and wish to expand their knowledge base and improve their skills.

For detailed certificate and program information, please visit [ryerson.ca/ce/ohs](http://ryerson.ca/ce/ohs).

## Admission Criteria

It is recommended that applicants have the following:

**Option 1:** Successful completion of Ryerson Certificate in Occupational Health and Safety or its equivalent.

**OR**

**Option 2:** OSSD with six OAC credits or Grade 12 U or M credits, or equivalent, or mature student status, and five years of professional experience in a field relevant to occupational health and safety, plus successful completion of these courses:

- COHS 208 Occupational Health: Occupational Health and Safety Law
- COHS 718 Occupational Health: Systems Management I

*Note: Students who successfully apply for admission to the degree program will be permitted advanced standing in the degree program for only those courses that they have successfully completed in either of these two certificate programs. Therefore, students who intend to pursue the degree program should choose Option 1 above.*

## Certificate Requirements

The successful completion of the eight required courses, with a cumulative grade point average of 1.67 or higher, is required for the certificate.

## Required Courses

- COHS 323 Occupational Health: Accident Theory and Analysis
- COHS 516 Occupational Health: Ergonomics
- COHS 523 Occupational Health: Safety Evaluation Techniques
- COHS 623 Occupational Health: Safety Control Methods
- COHS 723 Occupational Health: Sectoral Applications I
- COHS 818 Occupational Health: Systems Management II
- COHS 823 Occupational Health: Sectoral Applications II
- COHS 833 Occupational Health: Fire Safety Management



# APPLIED DIGITAL GEOGRAPHY AND GIS

*NOTE: This certificate program may be completed entirely at a distance. Visit the distance education website at [ryerson.ca/ce/de](http://ryerson.ca/ce/de) for further information.*

This certificate program has been developed for professionals currently practising or anticipating careers in government, industry, utilities, planning, municipal services, health, and retailing, who wish to enhance their professional skills in digital geography and geographic information systems (GIS). The certificate is designed to provide both training and education in digital geography.

The program responds to today's need for enhanced computer literacy in the management and analysis of digital spatial data, and the application of that data in decision-making. Digital geography is an area of study that concentrates on the electronic capture, storage, manipulation, and analysis of geographic data. Using location as the "look-up" key, disparate data sets can be linked and related to each other for a whole range of workplace applications. Following initial courses in which principles and concepts of digital geography and fundamental skills in GIS are introduced, the workplace applications are stressed in courses aimed at specific specialties. Higher level courses focus on refining GIS tools and implementation issues.

Students in the program are expected to have a working knowledge of desktop PC Windows environments.

For detailed certificate and program information, please visit [ryerson.ca/ce/gis](http://ryerson.ca/ce/gis).

**Academic Coordinator:** Joe Aversa, [certificates@geography.ryerson.ca](mailto:certificates@geography.ryerson.ca)

## Admission Criteria

Eligible applicants must have the following:

Undergraduate degree or college diploma in an acceptable related field. Applicants must complete an application for pre-approval (available at [ryerson.ca/ce/gis](http://ryerson.ca/ce/gis)) and be approved before registering for the first course.

## Advanced Credit

All applicants to the program are eligible to apply for advanced standing, with credit being granted for course work undertaken, or for professional practice, providing the course work or professional practice meets or exceeds the academic goals and content of the program courses for which credit is being sought. Advanced credit applications will be evaluated by the academic coordinator and the program director, and subject to normal Ryerson admission policies and procedures. Students may be required to take a challenge examination in order to ascertain eligibility for advanced standing. Students will be eligible for a maximum of three course credits toward the certificate.

## Certificate Requirements

The successful completion of six courses, with a cumulative grade point average of 1.67 or higher, is required for the certificate.

## Required Courses

The introductory core courses are designed to provide the student with a good contextual background in digital databases and the principles of applied digital geography. They form the foundation upon which further courses rest and students must complete both courses before continuing.

- CODG 101 Digital Geography: Spatial Databases and Digital Cartography
- CODG 102 Digital Geography: Digital Geography and Spatial Analysis

## Electives (select a total of four courses)

### *Electives – Group A (select one or two)*

Five professional applications courses allow the student to focus on an area of interest.

- CODG 123 Digital Geography: Digital Geography Applications in Utilities Planning
- CODG 124 Digital Geography: Digital Geography Applications in Business Decision-Making
- CODG 125 Digital Geography: Digital Geography Applications for the Municipal Professional
- CODG 126 Digital Geography: Digital Geography Applications in Environmental Management
- CODG 127 Digital Geography: Digital Geography Applications in Community and Social Services

### *Electives – Group B (select two or three)*

These courses are designed to provide the student with some understanding of the more complex core skills and issues facing business, municipal, environmental, utilities or community and social services professionals when they employ digital geography in their decision making.

- CODG 130 Digital Geography: Legal and Ethical Issues in GIS and Digital Data
- CODG 131 Digital Geography: Issues and Innovations
- CODG 132 Digital Geography: Customizing GIS Software: Applications Programming
- CODG 133 Digital Geography: Map Algebra: Topology and Overlay
- CODG 135 Digital Geography: Digital Image Processing and Applications
- CODG 136 Digital Geography: Web Mapping

As the sixth course for certificate completion, students may take one course in the first level of the Advanced Certificate in Applied Digital Geography and GIS (provided the prerequisite is met).

*Note: Because most courses have a significant lab component and since there are a limited number of lab stations, enrolment in most courses is limited to 30 registrants.*

# ADVANCED APPLIED DIGITAL GEOGRAPHY AND GIS

This advanced certificate offers a sequence of courses that combine to form a comprehensive package of principles and practice in advanced-level GIS education and training for GIS professionals. It builds on the courses in the first Certificate in Applied Digital Geography and GIS to provide greater conceptual understanding and technical expertise in this increasingly complex industry.

For detailed certificate and program information, please visit [ryerson.ca/ce/gis](http://ryerson.ca/ce/gis).

**Academic Coordinator:** Joe Aversa, [certificates@geography.ryerson.ca](mailto:certificates@geography.ryerson.ca)

## Admission Criteria

Eligible applicants must have the following:

Certificate in Applied Digital Geography and GIS or its equivalent. An interview with the academic coordinator is required to facilitate assessment of prior learning. Official documentation of English proficiency may be required if English is not the first language of the applicant. Applicants must complete an application for pre-approval available at [ryerson.ca/ce/gis](http://ryerson.ca/ce/gis).

## Certificate Requirements

The successful completion of six courses, with a cumulative grade point average of 1.67 or higher, is required for the certificate.

## Required Courses – First Level (select four or five)

Students may only select one course from the Group B Electives in the Certificate in Applied Digital Geography and GIS.

- CODG 210 Digital Geography: Spatial Database Management Systems
- CODG 211 Digital Geography: Advanced GIS Programming
- CODG 212 Digital Geography: Spatial Statistical Methods
- CODG 213 Digital Geography: Internet GIS

## Required Courses – Second Level (select one or two)

- CODG 220 Digital Geography: GIS Implementation
- CODG 221 Digital Geography: GIS Project





# ARCHITECTURE

This certificate program is designed for those wishing to enter the field of architecture, as well as those already employed in the field and wishing to improve their skills and credentials. With additional courses, this six-course certificate is recognized by the Association of Architectural Technologists of Ontario (AATO) as meeting the educational requirements for membership as a Probationer Technician. Students interested in the AATO should refer to the Professional Designation at [ryerson.ca/ce/designations](http://ryerson.ca/ce/designations).

## Admission Criteria

It is recommended that applicants have the following:

A post-secondary undergraduate education (university or college) in a relevant field of study including programs related to architecture and/or environmental science.

## Certificate Requirements

The successful completion of six courses, with a cumulative grade point average of 1.67 or higher, is required for the certificate. A maximum of three course credits may be granted on the basis of equivalent courses successfully completed at other post-secondary institutions or fully documented work experience. After completing the four required courses, students may select from the elective courses listed.

It is recommended that the required courses be taken in the following order: CKAR 300, CKAR 310, CKAR 205, and CKAR 103.

For further information about the program, please contact Anne-Marie Brinsmead, Program Director, at [a2brinsm@ryerson.ca](mailto:a2brinsm@ryerson.ca) or at 416.979.5000, ext. 2665, or Yew-Thong Leong, Academic Coordinator, at [ytleong@ryerson.ca](mailto:ytleong@ryerson.ca), or attend a Program Open House.

## Certificate in three terms

FALL 1	CKAR 300, CKAR 310
WINTER 1	CKAR 103, CKAR 205
FALL 2	Electives (two)

## Certificate in six terms

FALL 1	CKAR 310
WINTER 1	CKAR 205
SPRING/SUMMER 1	Elective
FALL 2	CKAR 300
WINTER 2	CKAR 103
SPRING/SUMMER 2	Elective

*Note: Pathways may be combined so that a student begins with one course per term then switches to two courses per term, or vice versa.*

## Required Courses

- CKAR 103 Architecture: Architectural Studio - Fundamental
- CKAR 205 Architecture: Building Codes and Regulations
- CKAR 300 Architecture: Architectural Drawing
- CKAR 310 Architecture: Materials and Methods

## Electives (select two)

- CENT 500 Entrepreneurship: New Venture Startup
- CKAR 203 Architecture: Specifications and Contractual Documents
- CKAR 209 Architecture: Digital Graphics for Architecture and Design
- CKAR 500 Architecture: Sustainable Buildings
- CKAR 785 Architecture: Building Info Modelling (REVIT)
- CKDA 610 Digital Architecture: Digital Architectural Modelling
- CKDA 611 Digital Architecture: Digital Architectural Rendering
- CKPM 213 Project Management: Management of Projects in the AEC
- CKPM 214 Project Management: Project Development and Control
- CTEC 210 Technology Studies: Fundamentals of Project Management

## Note to registered certificate program students

### Electives

CKAR 204, CKAR 210, CKAR 605, CKLA 400, CKLA 410, and CKPM 202 deleted.

CTEC 210 added.

# ADVANCED ARCHITECTURE

This advanced certificate will be of particular interest to those actively engaged in the architectural or related fields who are seeking the educational requirements for accreditation as an architectural technologist. It will also be of interest to those holding non-Canadian diplomas who are seeking Canadian qualifications in the architectural field.

## Association of Architectural Technologists of Ontario

The Association of Architectural Technologists of Ontario (AATO) recognizes successful completion of the Certificate in Advanced Architecture as fulfilling the academic component of the Probational Technologist membership requirements. For further details, refer to the Professional Designation at [ryerson.ca/ce/designations](http://ryerson.ca/ce/designations).

### Admission Criteria

It is recommended that applicants have the following:

Successful completion of the Certificate in Architecture or equivalent academic qualifications and work experience.

### Certificate Requirements

The successful completion of six courses, with a cumulative grade point average of 1.67 or higher, is required for the advanced certificate. A maximum of three course credits may be granted on the basis of equivalent courses successfully completed at other post-secondary institutions or fully documented work experience.

For further information about the program, please contact Anne-Marie Brinsmead, Program Director, at [a2brinsm@ryerson.ca](mailto:a2brinsm@ryerson.ca) or at 416.979.5000, ext. 2665, or attend a Program Open House.

### Required Courses

- CCMN 432 Communication: Communication in the Engineering Professions
- CKAR 215 Architecture: Computer-Aided Architectural Drawing
- CKAR 500 Architecture: Sustainable Buildings
- CKAR 601 Architectural Preservation and Conservation: Building Science for Architectural Preservation and Conservation

### Electives (select two)

- CENT 500 Entrepreneurship: New Venture Startup
- CKAR 203 Architecture: Specifications and Contractual Documents
- CKAR 209 Architecture: Digital Graphics for Architecture and Design
- CKAR 785 Architecture: Building Info Modelling (REVIT)
- CKDA 610 Digital Architecture: Digital Architectural Modelling
- CKDA 611 Digital Architecture: Digital Architectural Rendering
- CKPM 214 Project Management: Project Development and Control
- CTEC 210 Technology Studies: Fundamentals of Project Management

### Note to registered certificate program students

Effective Fall 2017, the Certificate in Advanced Architecture has been revised. Students who formally registered in the certificate prior to July 2, 2017, must complete the program requirements in effect at the time they registered.

### Required Courses

CKAR 201 deleted.

#### *Electives*

CKAR 500 moved to Required Courses.

CTEC 210 added.

CKAR 204, CKAR 210, CKAR 605, CKLA 400, CKLA 410, CKPM 202, and CKPM 213 deleted.

# BUSINESS COMMUNICATION

Note: Many of the courses in this program are available by distance education; visit the distance education website at [ryerson.ca/ce/de](http://ryerson.ca/ce/de) for further information.

This certificate program will help individuals develop a high level of competence in communication, particularly in business and government organizations. The program focuses on helping students learn how to complete the following:

- write letters, memoranda, and reports that are concise, lucid, and effective
- plan and deliver informative and persuasive oral presentations without undue stress or stage fright
- generate information through library research, database searches, systematic observation, interviews, and surveys
- analyze information to yield conclusions that will be understood and recommendations that will be acted upon
- use careful organization, headings, and visual aids to produce reports that are impressive to look at and informative to read
- interact effectively in small groups and committees
- foster an organizational environment which encourages effective communication by all employees

All courses with the exception of CDCM 415 and CDCM 300 are degree program equivalents, and may be taken for credit independently from the certificate.

For detailed certificate and program information, please visit [ryerson.ca/ce/buscomm](http://ryerson.ca/ce/buscomm).

## Admission Criteria

It is recommended that applicants have the following:

OSSD with six Grade 12 U or M credits (including English), with a minimum average of 60 percent, or equivalent, or mature student status.

## Certificate Requirements

The successful completion of eight courses (six required courses and two electives), with a cumulative grade point average of 1.67 or higher, is required for the certificate. It is recommended that students begin the program with CCMN 279.

## Required Courses

- CCMN 279 Communication: Introduction to Professional Communication
- CCMN 313 Communication: Organizational Problem Solving and Report Writing
- CCMN 314 Communication: Professional Presentations
- CCMN 413 Communication: Corporate Communications
- CCMN 414 Communication: Interpersonal Communication in Management
- CCMN 443 Communication: Contemporary Intercultural Communication

## Electives (select two)

- CCMN 114 Communication: Short Management Reports
- CCMN 315 Communication: Issues in Communication and the Contemporary Workplace
- CCMN 447 Communication: Communication and Law
- CDCM 300 Communication: Communicating in Virtual Environments
- CDCM 415 Communication: Promotional Communications
- CFRE 502 French: Communication and Business French

“I wanted to improve my work life. I wanted to grow, I wanted to excel. And I knew that in order to do that, I needed to further my education just to give me that competitive edge.”

**PETER MCGREGOR**  
GRADUATE, CERTIFICATE IN  
BUSINESS COMMUNICATION



# BUSINESS DECISION ANALYSIS

This certificate is designed for adult students who are interested in developing quantitative skills to support managerial decision making. It provides an in-depth study of the fundamentals of quantitative management methods and is designed to develop skills and knowledge necessary for the effective use of the vast amounts of data available today for business analysis.

For detailed certificate and program information, please visit [ryerson.ca/ce/busdecisionanalysis](http://ryerson.ca/ce/busdecisionanalysis).

## Admission Criteria

It is recommended that applicants have the following:

OSSD with six Grade 12 U or M credits (including one in Mathematics), or equivalent, or mature student status with some experience in business.

## Certificate Requirements

The successful completion of six courses, with a cumulative grade point average of 1.67 or higher, is required for the certificate.

## Supplies to Be Purchased by the Student

A calculator with specialized statistical features is integral to many Quantitative Methods courses. Software and calculator specifications will be announced at the first class.

## Required Courses

Students must select either ((CMTH 304 or CMTH 380) and CMTH 404) OR (CQMS 102 and CQMS 202). Course selections may not be combined from both groups.

- CMTH 304 Mathematics: Probability and Statistics I
- CMTH 380 Mathematics: Probability and Statistics I
- CMTH 404 Mathematics: Probability and Statistics II
- CQMS 102 Quantitative Methods: Business Statistics I
- CQMS 202 Quantitative Methods: Business Statistics II

## Electives (select four)

- CGMS 422 Global Management: Quality Management
- CIND 123 Industrial Engineering: Data Analytics: Basic Methods
- CITM 501 Information Technology Management: Decision Analysis
- CQMS 442 Quantitative Methods: Multiple Regression for Business
- CQMS 521 Quantitative Methods: Business Optimization
- CQMS 703 Quantitative Methods: Business Forecasting Techniques

## Note to registered certificate program students

Effective Fall 2016, the Certificate in Business Decision Analysis has been revised. Students who were formally registered in the certificate prior to July 2, 2016, must complete the requirements in effect at the time of their registration. However, students in this circumstance who wish to transfer their registration to the new curriculum should contact the Business area at [ce@ryerson.ca](mailto:ce@ryerson.ca) for further information.



# BUSINESS FRENCH AND TRANSLATION

This certificate program is designed mainly for individuals working or intending to work in French in a business environment. The program offers a range of specialized and practical courses permitting students to improve their communication and translation skills, thus adding to their professional qualifications and career opportunities.

For detailed certificate and program information, please visit [ryerson.ca/ce/french](http://ryerson.ca/ce/french).

**Academic Coordinator:** Dr. Mireille Truong, [truongm@ryerson.ca](mailto:truongm@ryerson.ca)

## Admission Criteria

It is recommended that applicants have the following:

Certificate of Proficiency in French from Ryerson or admission by placement assessment and interview.

## Certificate Requirements

The successful completion of six single-term credit courses, with a cumulative grade point average of 1.67 or higher, is required for the certificate.

## Advanced Placement

Students may be exempted from completing a course from the Elective group, if their level (as determined by placement assessment and interview) is deemed to be more advanced than that required of the Elective courses. Students granted this exemption must complete the five Required Courses, with a cumulative grade point average of 1.67 or higher, in order to obtain the certificate.

## Recommended Sequence

It is recommended that students complete the Elective requirement before taking the Required Courses; refer to Recommended Sequence for French (CFRE) Courses at [ryerson.ca/ce/french](http://ryerson.ca/ce/french).

## Required Courses (select five)

- CFRE 502 French: Communication and Business French
- CFRE 507 French: English-French Translation I
- CFRE 602 French: Business French in Practice
- CFRE 607 French: English-French Translation II
- CFRE 707 French: Introduction to French-English Translation

## Electives (select one)

- CFRE 510 French: Effective Writing
- CFRE 515 French: Introduction to Business French
- CFRE 610 French: Cultural Context of Writing
- CFRE 706 French: The Life and Times of the French Language

# BUSINESS MANAGEMENT

*NOTE: This certificate program may be completed entirely at a distance. Visit the distance education website at [ryerson.ca/ce/de](http://ryerson.ca/ce/de) for further information.*

This program provides an overall management perspective and all the requirement competencies for those planning a career in business. The courses are ideal for those already employed in business and industry who wish to expand their knowledge of business concepts and practices.

Successful completion of the Certificate in Business Management will provide you with courses which are required for and may be applied to the first year of the current BComm at the Ted Rogers School of Management. Note that you must apply and be accepted to the Ted Rogers School of Management to use the courses towards the BComm at Ryerson University. The courses may also be transferable to other university programs; for more information, visit [ONTransfer.ca](http://ONTransfer.ca).

For detailed certificate and program information, please visit [ryerson.ca/ce/businessmgmt](http://ryerson.ca/ce/businessmgmt).

## Admission Criteria

It is recommended that applicants have the following:

OSSD with six Grade 12 U or M credits, or equivalent, or mature student status with experience in business.

## Certificate Requirements

The successful completion of eight courses, with a cumulative grade point average of 1.67 or higher, is required for the certificate. Up to four course credits may be granted on the basis of courses successfully completed at other institutions.

## Required Courses

Students may only select one of CACC 100 or CACC 110. Students planning to pursue the Accounting Finance minor must enrol in CACC 110. Note: CACC 100 and CACC 110 are not transferable to the Accounting major in the School of Accounting and Finance.

Students may only select one of CITM 100 or CITM 102. Students planning to pursue the Business Technology major must enrol in CITM 100.

- CACC 100 Accounting: Introductory Financial Accounting
- CACC 110 Accounting: Financial Accounting
- CECN 104 Economics: Introductory Microeconomics
- CGMS 200 Global Management: Introduction to Global Management
- CITM 100 Information Technology Management: Foundations of Information Systems
- CITM 102 Information Technology Management: Business Information Systems I
- CLAW 122 Law: Business Law
- CMHR 523 Human Resources: Human Resources Management
- CMKT 100 Marketing: Principles of Marketing
- CQMS 102 Quantitative Methods: Business Statistics I



# CANADIAN SOCIAL WORK PRACTICE

This certificate program is designed to enhance the employment and academic prospects of internationally educated social work professionals. Offered part-time over a 10-month period (beginning in the Fall term), the program includes courses, mentorship, and work experience. The certificate is open only to internationally educated professionals with social service experience approved through the Internationally Educated Social Work Professionals (IESW) Program admissions process.

For detailed certificate and program information, please visit [ryerson.ca/ce/socialwork](http://ryerson.ca/ce/socialwork).

## Admission Criteria

Eligible applicants must have the following:

A social work degree awarded outside of Canada and registration with the Ontario College of Social Workers and Social Service Workers (OCSWSSW) and;

A minimum of one year of paid accumulated employment in the social service field (abroad and/or in Canada)

OR

A social work degree awarded outside of Canada assessed as equivalent to a BSW or an MSW by the Canadian Association of Social Workers (CASW) and;

A minimum of one year of paid accumulated employment in the social service field (abroad and/or in Canada)

OR

A baccalaureate degree awarded outside of Canada (minimum of three years of university study) in the humanities or social sciences, and equivalent to a Canadian degree and;

A minimum of two years' paid accumulated employment in the social service field (abroad and/or in Canada)

In addition, all applicants must have the following:

- proof of English proficiency at the required level
- proof of Ontario residency
- proof of eligibility to work in Canada

Students seeking admission to this program are also required to complete an application form and participate in a pre-assessment.

The form can be found on the Internationally Educated Social Work Professionals (IESW) Program website at [ryerson.ca/ce/socialwork](http://ryerson.ca/ce/socialwork).

## Certificate Requirements

The successful completion of six courses, with a cumulative grade point average of 1.67 or higher, is required for the certificate.

## Required Courses

- CKCS 180 Computer Science: IoT 360 Connectivity to the World
- CSWP 201 Social Work: Preparing for Social Work Practice
- CSWP 335 Social Work: Power, Resistance and Change
- CSWP 917 Social Work: Special Topics I
- CSWP 918 Social Work: Special Topics II
- CVSW 900 Canadian Social Work Practice (IESW): Foundations of Social Work

## Electives (select one)\*

- CSWP 36A/B Social Work: Field Practicum
- CVSW 305 Canadian Social Work Practice (IESW): Field Practicum for Internationally Educated Social Workers

*\*Note: Students admitted into the program who are already registered with the Ontario College of Social Workers and Social Service Workers (OCSWSSW) or who hold a degree assessed as equivalent by the Canadian Association of Social Workers (CASW) select CVSW 305. Students who do not meet these qualifications must select CSWP 36A/B.*

# CARIBBEAN STUDIES

This interdisciplinary certificate is designed to enrich students' knowledge of the Caribbean, a key region with increasingly strong socio-cultural ties to Canada. Students will learn about the Caribbean's historic, political, economic, cultural, racial, ethnic, and geographic diversity. This region provides an excellent site for studies of multiculturalism and creolization. Additionally, students will learn about the important Caribbean community in Canada, thereby engaging with issues such as migration, transnationalism, diaspora, racism, and equity.

For detailed certificate and program information, please visit [ryerson.ca/ce/caribbean](http://ryerson.ca/ce/caribbean).

**Academic Coordinator:** Dr. Camille Hernández-Ramdwar, [chernand@ryerson.ca](mailto:chernand@ryerson.ca)

## Admission Criteria

It is recommended that applicants have the following:

OSSD with six OAC credits or Grade 12 U or M credits, or equivalent, or mature student status.

## Certificate Requirements

The successful completion of six courses, with a cumulative grade point average of 1.67 or higher, is required for the certificate.

## Required Course

- CCRB 100 Caribbean Studies: Introduction to the Caribbean

## Electives (select five)

- CCRB 500 Caribbean Studies: Families in the Caribbean
- CCRB 501 Caribbean Studies: Racism and Caribbean Peoples in Canada
- CCRB 502 Caribbean Studies: Cultural Traditions in the Caribbean
- CCRB 600 Caribbean Studies: Postcolonial Caribbean Society
- CCRB 603 Caribbean Studies: Special Topics in Caribbean Studies
- CCRB 605 Caribbean Studies: Caribbean Tourism: Impacts and Resistance
- CCRB 614 Caribbean Studies: Caribbean Critical Thought
- CENG 620 English Literature: English Caribbean Literatures and Cultures
- CFRS 602 French Studies: French Caribbean Literature and Culture
- CHST 222 History: The History of The Caribbean
- CSPN 804 Spanish: Latin American Culture II
- CSPS 502 Spanish Studies: Spanish Caribbean Literature and Culture



“Knowing and embracing your cultural heritage helps you engage more confidently in the culture you’ve joined.”

**SHARON SHELTON**  
EXECUTIVE DIRECTOR, TROPICANA  
COMMUNITY SERVICES



# COMMUNITY ENGAGEMENT, LEADERSHIP, AND DEVELOPMENT

*NOTE: This certificate program may be completed entirely at a distance. Visit the distance education website at [ryerson.ca/ce/de](http://ryerson.ca/ce/de) for further information.*

This interdisciplinary certificate will be of interest to community practitioners in organizations in the public and nonprofit sectors, across diverse fields of service such as social services, education, labour, health, housing, policing, and transportation. Courses focus on the acquisition of the knowledge and skills required to engage community members effectively in planning, problem solving, and decision-making processes that improve conditions and address issues related to the social, political and/or cultural wellbeing of civic and community life.

For detailed certificate and program information, please visit [ryerson.ca/ce/community](http://ryerson.ca/ce/community).

## Admission Criteria

It is recommended that applicants have the following:

OSSD with six Grade 12 U, including Grade 12 U or M credits, or equivalent, or mature student status with relevant work experience.

## Certificate Requirements

The successful completion of six courses, with a cumulative grade point average of 1.67 or higher, is required for the certificate.

## Recommended Sequence

Students are advised to take the courses in the following sequence:

- CSWP 934
- CSWP 935
- CSWP 936
- Electives (two selections)
- CSWP 937

## Required Courses

- CSWP 934 Social Work: Community Engagement Foundations
- CSWP 935 Social Work: Engaging Diverse Communities
- CSWP 936 Social Work: Community Engagement Practices
- CSWP 937 Social Work: Community Engagement Capstone

## Electives (select two)

- CCMN 313 Communication: Organizational Problem Solving and Report Writing
- CCMN 314 Communication: Professional Presentations
- CCMN 414 Communication: Interpersonal Communication in Management
- CCMN 443 Communication: Contemporary Intercultural Communication
- CCRM 322 Criminal Justice and Criminology: Ethics in Criminal Justice
- CCRM 402 Criminal Justice and Criminology: Criminal Justice and Social Inequality
- CDST 501 Disability Studies: Rethinking Disability
- CDST 502 Disability Studies: Disability and the State
- CDST 613 Disability Studies: Strategies for Community Building
- CFNY 407 Food Security: Community Development and Food Security
- CINP 913 Nonprofit: Leading Through Change
- CINT 900 Interdisciplinary Studies: Program Planning and Evaluation Strategies
- CINT 904 Interdisciplinary Studies: Health Promotion and Community Development
- CINT 905 Interdisciplinary Studies: Conflict Resolution in Community Services
- CINT 907 Interdisciplinary Studies: Team Work for Community Services
- CINT 910 Interdisciplinary Studies: First Nations Issues
- CINT 912 Interdisciplinary Studies: Community Development: International Field Experience
- CINT 914 Interdisciplinary Studies: Settlement Experiences
- CINT 916 Interdisciplinary Studies: Introduction to Fundraising
- CINT 917 Interdisciplinary Studies: Community Development
- CINT 920 Interdisciplinary Studies: Community Collaborations
- CINT 922 Interdisciplinary Studies: Intro to Aboriginal Worldviews

- CODG 127 Digital Geography: Digital Geography Applications in Community and Social Services
- CPLE 745 Planning: Selected Topics in Planning
- CPSY 808 Psychology: Community Psychology
- CSOC 500 Sociology: Youth and Society
- CSOC 609 Sociology: Women and Human Rights
- CSOC 705 Sociology: Law and Justice
- CSSH 502 Social Sciences and Humanities: Community Action Research
- CSWP 302 Social Work: Social Policy: Welfare and Programs
- CSWP 335 Social Work: Power, Resistance and Change
- CSWP 402 Social Work: Social Policy and Social Inclusion
- CTEC 210 Technology Studies: Fundamentals of Project Management
- CVFS 401 Family Supports: Contemporary Family Issues
- CVFS 403 Family Supports: Family Supports Theory and Practice

### Note to registered certificate program students

#### *Electives*

CKPM 202 deleted.

CSSH 502 and CTEC 210 added.



# COMPUTER PROGRAMMING APPLICATIONS

This program is designed for individuals who wish to work as application programmers in software engineering, database technology, and networking or related user support positions. It provides an overview of systems principles and client/server architecture that will enable individuals to perform system integrations and user help functions. It provides training in the most popular programming languages (Java and C) and the popular operating system (UNIX). This certificate also permits students to focus on several application areas: Software Engineering, Database Technology, Networking, Project Management, GIS, and Landscape Design.

**Academic Coordinator:** Dr. Ferworn, aferworn@scs.ryerson.ca

## Admission Criteria

It is recommended that applicants have the following:

OSSD with six OAC credits or Grade 12 U or M credits, or equivalent, or mature student status, or permission of the academic coordinator.

## Certificate Requirements

The successful completion of six courses, with a cumulative grade point average of 1.67 or higher, is required for the certificate. Up to three course credits may be granted on the basis of courses successfully completed at other post-secondary institutions.

## Required Courses

- CCPS 109 Computer Science: Computer Science I
- CCPS 209 Computer Science: Computer Science II
- CCPS 305 Computer Science: Data Structures
- CCPS 393 Computer Science: Introduction to C and UNIX

## Electives (select two)

Students select a total of two electives from one or more of the seven streams.

### Computational Methods Stream

- CCPS 270 Computer Science: Data Access and Management
- CIND 123 Industrial Engineering: Data Analytics: Basic Methods
- CKCS 210 Computer Science: Mathematical Modeling: Introduction to MATLAB
- CKCS 220 Computer Science: Mathematical Modeling: Statistical Analysis Utilizing SPSS

### Database Technology Stream

- CCPS 270 Computer Science: Data Access and Management
- CCPS 510 Computer Science: Database Systems I
- CCPS 610 Computer Science: Database Systems II

### Geographic Information Systems Stream

- CODG 132 Digital Geography: Customizing GIS Software: Applications Programming
- CODG 136 Digital Geography: Web Mapping
- CODG 211 Digital Geography: Advanced GIS Programming

### Landscape Design (Dynascope) Stream

- CKLA 300 Landscape Design: Landscape Design Communications and Theory
- CKLA 440 Landscape Design: Landscape Design LANDWorksCAD PRO

### Networking Stream

- CCPS 590 Computer Science: Operating Systems I
- CCPS 706 Computer Science: Computer Networks I
- CKCS 180 Computer Science: IoT 360 Connectivity to the World

### Software Engineering Stream

- CCPS 311 Computer Science: Object Oriented Programming and Design
- CCPS 613 Computer Science: Human-Computer Interaction
- CSCI 130 Science: Mobile Robotic Devices Embedded Systems

### Project Management (MS Project) Stream

- CKPM 207 Project Management: Project Management Systems
- CTEC 210 Technology Studies: Fundamentals of Project Management

## Supplemental Information

This certificate program provides training in C, C++, and Object-Oriented Programming. It is important to realize that various courses require the successful completion of prerequisite courses. The recommended sequence of courses provides students with the best training and learning experience.

## Note to registered certificate program students

Effective Fall 2017, the Certificate in Computer Programming Applications has been revised. Students who formally registered in the certificate prior to July 2, 2017, must complete the program requirements in effect at the time they registered.

# COMPUTER SECURITY AND DIGITAL FORENSICS

*NOTE: This certificate program may be completed entirely at a distance. Visit the distance education website at [ryerson.ca/ce/de](http://ryerson.ca/ce/de) for further information.*

This certificate program is designed to develop the core knowledge and functional competencies required to work in the cutting-edge and rapidly evolving fields of computer security and digital forensics. The program will provide students with both the academic background and hands-on experience to effectively oversee white/black box penetration tests, analyze a system to identify vulnerabilities, manage the remediation of security weaknesses, collect digital evidence in a proper forensic manner, and recover lost data after a hardware failure. The legal environment in which computer security and digital forensics practitioners work will also be examined, and students will gain insight into the role and function of expert forensic witnesses. The program encompasses the technicalities of information security and digital forensics, investigative protocols, professional and ethical considerations for practitioners, and relevant court procedures. Graduates should be well positioned to enter into and succeed in this exciting, competitive, and high-demand field.

Computer security and digital forensics specialists play a vital role in the protection of public and private data and the computer systems controlling everything from financial information to critical infrastructure. This certificate will be of interest to individuals just starting their career; career changers seeking to achieve advancement, portability, and longevity goals; managers and end users requiring a more in-depth understanding of computer security and data protection; and long-time practitioners seeking to round out their knowledge and attain a recognized level of academic achievement.

**Important Note:** Knowledge of TCP/IP is recommended. Students must have a Windows or Linux computer operating system; the Apple (MAC) operating system is not supported by this course.

For detailed certificate and program information, including the Computer Security Fast Track (CKDF 999), please visit [ryerson.ca/ce/compsec](http://ryerson.ca/ce/compsec).

**Program Director:** Anne-Marie Brinsmead, [a2brinsm@ryerson.ca](mailto:a2brinsm@ryerson.ca)

## Admission Criteria

It is recommended that applicants have the following:

OSSD with six Grade 12 U or M credits, including a Grade 12 U course in English and with a minimum grade point average of 70 percent, or equivalent, or mature student status. Note: Knowledge of TCP/IP is recommended.

## Certificate Requirements

The successful completion of six courses, with a cumulative grade point average of 1.67 or higher, is required for the certificate.

## Recommended Sequence

Students are advised to take the courses in the following sequence:

- CKDF 110
- CKDF 120
- CKDF 130
- CKDF 140
- CKDF 145, CSCI 243, or CZLW 120
- CKDF 150

*Note: Students wishing to take another certificate course concurrently with CZLW 120, or to take two or more certificate courses simultaneously may do so.*

## Required Courses

Students may only select one of CKDF 145, CSCI 243, or CZLW 120.

- CKDF 110 Computer Security and Digital Forensics: Computer Network Security
- CKDF 120 Computer Security and Digital Forensics: Computer Cryptography and Digital Steganography
- CKDF 130 Computer Security and Digital Forensics: Digital Forensics Systems
- CKDF 140 Computer Security and Digital Forensics: Security Architecture and Design
- CKDF 145 Computer Security and Digital Forensics: Certified Information Systems Security Professional (CISSP)
- CKDF 150 Computer Security and Digital Forensics: Digital Forensics Investigation
- CSCI 243 Science: Risk and Continuity Management
- CZLW 120 Law: Law for Forensics Professionals

## Note to registered certificate program students

### Required Courses

CKDM 150 deleted.

CSCI 243 added.

*Note: Students may select only one of CKDF 145, CSCI 243, or CZLW 120.*

# CRIMINAL JUSTICE AND CRIMINOLOGY

The Certificate in Criminal Justice and Criminology will provide interdisciplinary knowledge and critical thinking skills with respect to social and criminal justice, including public and private security, policing, the administration of criminal justice, and corrections and community engagement. This program is relevant to administrators and managers in a wide variety of public and private sectors who are seeking career entry, career portability, and career advancement in fields related to criminal justice.

**Academic Coordinator:** Dr. Alexandra Orlova, aorlova@ryerson.ca

## Admission Criteria

It is recommended that applicants have the following:

OSSD with six Grade 12 U or M credits, or equivalent, or mature student status with relevant work experience, including policing, corrections, courts, social service agencies, security management services, or regulatory enforcement agencies.

## Certificate Requirements

The successful completion of six single-term courses, with a cumulative grade point average of 1.67, is required for the certificate.

## Required Courses

- CCRM 100 Criminal Justice and Criminology: Introduction to Canadian Criminal Justice
- CCRM 102 Criminal Justice and Criminology: Introduction to Criminology

## Generalist Stream (select three)

- CCRM 200 Criminal Justice and Criminology: Criminal Law
- CCRM 202 Criminal Justice and Criminology: Victims and the Criminal Process
- CCRM 300 Criminal Justice and Criminology: Policing in Canada
- CCRM 304 Criminal Justice and Criminology: Youth Justice in Canada
- CCRM 306 Criminal Justice and Criminology: Corrections in Canada
- CCRM 308 Criminal Justice and Criminology: Criminal Courts in Canada
- CCRM 402 Criminal Justice and Criminology: Criminal Justice and Social Inequality

## Electives (select one)

- CGEO 581 Geography: GIS, Geographic Data and Mapping
- CPHL 449 Philosophy: Philosophy of Punishment
- CPHL 612 Philosophy: Philosophy of Law
- CPSY 300 Psychology: Psychology and Law
- CPSY 602 Psychology: Developmental Psychopathology
- CSOC 500 Sociology: Youth and Society
- CSOC 502 Sociology: Violence and the Family



# DATA ANALYTICS, BIG DATA, AND PREDICTIVE ANALYTICS

This certificate will provide a strong foundation in analytics, tools, and statistics. It is targeted to individuals who need to use data analytics, big data, and predictive analytics to optimize performance at a variety of levels in a wide range of sectors or are employed in a related field such as data warehousing, data management, IT, etc. and need to acquire the necessary credentials for career promotion or other professional enrichment.

Upon successful completion of this certificate, graduates will be prepared to take the Institute for Operations Research and the Management Sciences (INFORMS) Certified Analytics Professional (CAP®) exam to become certified professionals in this burgeoning field. For more information about the CAP® designation, visit the website for the Institute for Operations Research and the Management Sciences (INFORMS) at [ryerson.ca/ce/designations](http://ryerson.ca/ce/designations).

For detailed certificate and program information, including the Data Analytics Fast Track (CKME 999), please visit [ryerson.ca/ce/bigdata](http://ryerson.ca/ce/bigdata).

## Admission Criteria

Eligible applicants must have the following:

OSSD with six Grade 12 U credits, including Grade 12 U credits in English, Mathematics (Advanced Functions and one of either Calculus and Vectors or Data Management), and Science (Biology or Chemistry or Physics);

OR

M credits with a minimum grade of 70 percent or equivalent academic status

OR

Mature student status with four years of relevant professional experience AND the approval of the academic coordinator.

*Note: Applicants should contact Anne-Marie Brinsmead, Program Director, at [a2brinsm@ryerson.ca](mailto:a2brinsm@ryerson.ca) or at 416.979.5000, ext. 2665 or attend a Program Open House.*

## Certificate Requirements

The successful completion of six courses, with a cumulative grade point average of 1.67 or higher, is required for the certificate.

## Recommended Sequence

Students are advised to take the courses in the following sequence; however, CIND 123, CIND 119, and CIND 110 may be taken concurrently. CMTH 642 and CIND 719 may be taken concurrently. CKME 136 may not be taken until the previous five Required Courses have been successfully completed.

- CIND 123
- CIND 119
- CIND 110 OR CCPS 270
- CMTH 642
- CIND 719
- CKME 136

## Required Courses

Students may only select one of CIND 110 or CCPS 270.

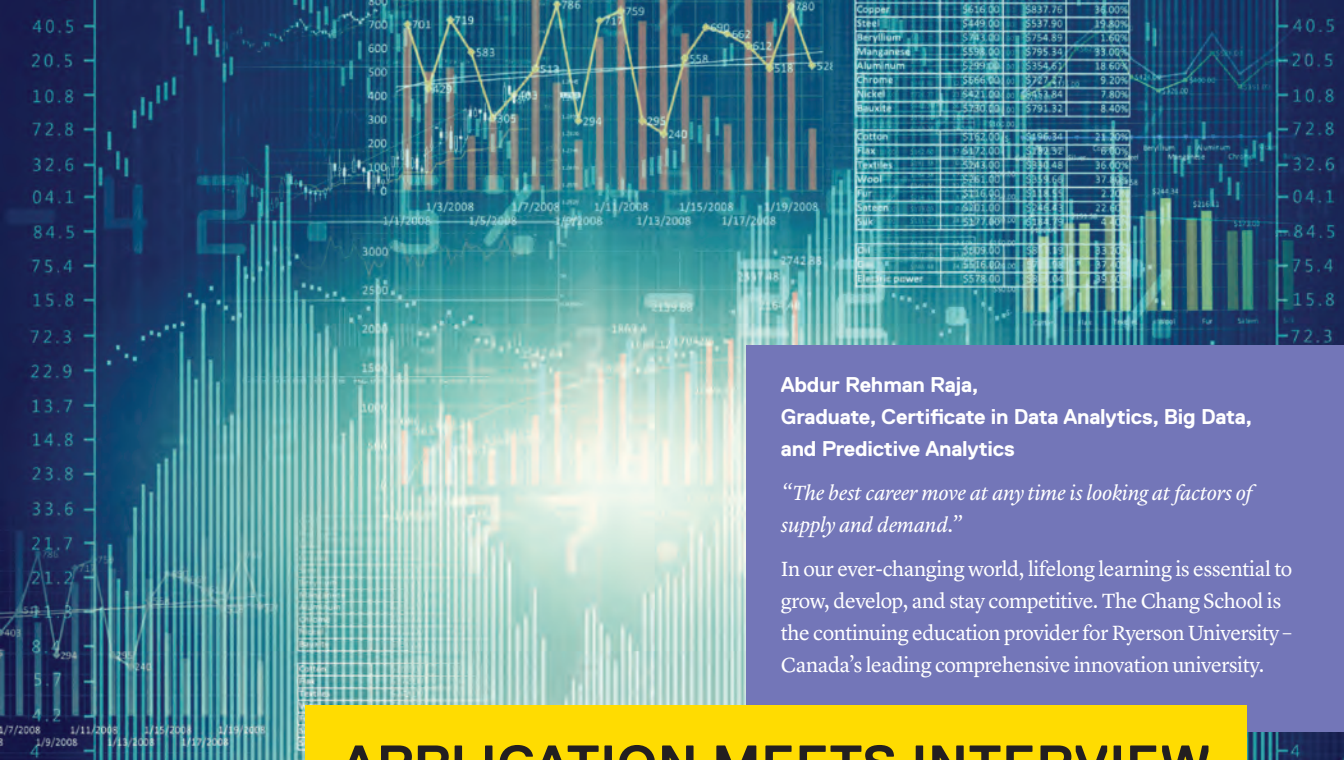
- CCPS 270 Computer Science: Data Access and Management
- CIND 110 Industrial Engineering: Data Organization for Data Analysts
- CIND 119 Industrial Engineering: Introduction to Big Data
- CIND 123 Industrial Engineering: Data Analytics: Basic Methods
- CIND 719 Industrial Engineering: Big Data Analytics Tools
- CKME 136 Mechanical Engineering: Data Analytics: Capstone Course
- CMTH 642 Mathematics: Data Analytics: Advanced Methods

## Note to registered certificate program students

### Required Courses

CKCS 110 deleted.

CCPS 270 added.



**Abdur Rehman Raja,**  
**Graduate, Certificate in Data Analytics, Big Data,**  
**and Predictive Analytics**

*“The best career move at any time is looking at factors of supply and demand.”*

In our ever-changing world, lifelong learning is essential to grow, develop, and stay competitive. The Chang School is the continuing education provider for Ryerson University – Canada’s leading comprehensive innovation university.

# APPLICATION MEETS INTERVIEW

When Abdur Rehman Raja graduated with a bachelor’s degree in economics in April 2016, his intention was to pursue a career in the finance world. After realizing that finance was too concentrated, Abdur took the advice of a friend and began investigating continuing education opportunities at The Chang School, and by May he was enrolled in the Certificate in Data Analytics, Big Data, and Predictive Analytics. By the end of summer he had completed the five required courses given on campus, built a competitive resume with the support and personal attention of the program director, and in December, he handed in his final course project to complete the program.

Abdur is now working full-time as a data analyst and notes, “The best career move at any time is looking at factors of supply and demand. In this case, every company wants a data scientist but not enough people have that skill set.” Abdur lacked a background in data analysis when he began the program and says that the certificate was “an amazing starting point” that provided him with broad concepts of data science. His courses were designed so that theory was covered in the mornings, while application was covered in the afternoons. In addition, Abdur appreciated the opportunity to participate in group projects and he stays in touch with those particular classmates.

Aside from the strong root system The Chang School provided, Abdur also recognized that success hinges on a commitment to continual lifelong learning. He credits The Chang School for meeting his needs and adds that he is constantly learning new concepts on his own, both in person and online. “Now that I am in the industry, I know what employers are looking for,” he says.

*Story by Anna Rumin, Learner, Writing Workshops*

# DEMOGRAPHIC ANALYSIS

*Note: Many of the courses in this program are available by distance education; visit the distance education website at [ryerson.ca/ce/de](http://ryerson.ca/ce/de) for further information.*

An understanding of demographics and demographic change is of increasing importance for professionals working in a wide variety of occupations in business, government, and not-for-profit sectors. This certificate offers opportunities to take a grounding in the principles and applications of demographic analysis and GIS applications in demography into the study of selected courses, with a concentration on applications used for business, commercial or public sector purposes, immigration and settlement studies, and/or the economic impacts of demographic change. The final course will give students an opportunity to engage in “real-world” demographic analysis of issues such as school enrolments and closures, demand and supply of goods and services, retail sales potential, demand and supply of settlement services, social and assisted housing, and traffic in urban areas.

**Academic Coordinator:** Joe Aversa, [certificates@geography.ryerson.ca](mailto:certificates@geography.ryerson.ca)

## Admission Criteria

It is recommended that applicants have the following:

OSSD with six Grade 12 U or M credits (English recommended) with a minimum grade of 70 percent, or equivalent, or mature student status with relevant work experience.

## Certificate Requirements

The successful completion of six courses (three required courses and three electives), with a cumulative grade point average of 1.67 or higher, is required for the certificate.

## Recommended Sequence

Students are advised to take the courses in the following sequence: CODA 100; CODA 110; Electives (three selections); and CODA 120.

## Required Courses

- CODA 100 Demographic Analysis: Principles of Demographic Analysis
- CODA 110 Demographic Analysis: GIS Applications in Demography
- CODA 120 Demographic Analysis: Advanced Demographic Applications

## Electives (select three)

- CECN 640 Economics: The Economics of Immigration
- CGEO 206 Geography: Regions, Nations and the Global Community
- CGEO 301 Geography: Marketing Geography
- CGEO 419 Geography: Retailing, GIS and Geodemographics
- CGEO 505 Geography: Regional Analysis of Canada
- CGEO 691 Geography: Canadian Immigration: Patterns and Place
- CGEO 803 Geography: Recreation and Tourism Analysis
- CINT 913 Interdisciplinary Studies: Issues of Migration
- CINT 914 Interdisciplinary Studies: Settlement Experiences
- CINT 915 Interdisciplinary Studies: Responses to Migration
- CODG 127 Digital Geography: Digital Geography Applications in Community and Social Services
- CPSY 620 Psychology: Psychology of Immigration
- CPSY 941 Psychology: Cross Cultural Psychology
- CSOC 474 Sociology: Immigration, Borders and Belonging



# DESIGN FOR ARTS AND ENTERTAINMENT

Start your behind-the-scenes career with an interdisciplinary approach to design in the fields of arts, culture, and entertainment. This certificate will help you develop the skills needed to plan and create characters and environments for live stage, film, television, photography, and multimedia installations by exploring a curriculum that is relevant to the current and emerging practice of scenography and design.

## Admission Criteria

It is recommended that applicants have the following:

OSSD with six Grade 12 U or M credits (including English), or equivalent, with a minimum average of 60 percent, or mature student status with relevant professional experience.

Students who have no previous drawing experience must successfully complete Drawing Fundamentals (CDID 803).

## Certificate Requirements

The successful completion of seven courses, with a cumulative grade point average of 1.67 or higher, is required for the certificate.

## Recommended Sequence

Students are advised to take the courses in the following sequence:

- Early Terms: CDID 150, CDID 170, CDMP 130
- Mid Terms: CDMP 122, two Electives
- Final Term: CDMP 123

## Required Courses

- CDID 150 Interior Design: Design Theory
- CDID 170 Design for Arts and Entertainment: Drafting for Entertainment
- CDMP 122 Film Studies: Production Design for Film and Theatre
- CDMP 123 Film Studies: Art Direction for Film and Special Events
- CDMP 130 Design for Arts and Entertainment: History of Arts and Scenography

## Electives (select two)

- CCMN 314 Communication: Professional Presentations
- CDFA 104 Fashion: Fashion Drawing I
- CDFC 106 Fashion Coordination and Styling: Fashion, Culture, and Society
- CDFP 391 Photography: History of Photography I
- CDID 552 Lighting Design: Entertainment Lighting Design
- CDMP 114 Film Studies: Post-Production Sound
- CDMP 120 Film Studies: Film History
- CENG 101 English Literature: Laughter and Tears: Comedy and Tragedy
- CFPN 531 Film Studies: Cinematography and Lighting Design I
- CMPC 203 Combined Media: Art in the Modern World
- CRTA 180 RTA: Media Studies: Music and Film



# DESIGN MANAGEMENT

*Note: Many of the courses in this program are available by distance education; visit the distance education website at [ryerson.ca/ce/de](http://ryerson.ca/ce/de) for further information.*

The design industry generates billions of dollars in many sectors of the Canadian economy including manufacturing, construction, materials supply, transportation, retail, marketing, and consulting services. Graduates will be equipped to enter or progress within the growing numbers of organizations where design is considered to have strategic importance.

This multidisciplinary certificate program will provide graduates with the knowledge and skills required to be employed in those organizations engaged in the design field. It is aimed at those who may already be working in the design or business fields and/or those who have some design or business post-secondary education. It serves many different disciplines dedicated to design, including fashion, interior, industrial, graphic, landscape, architectural, engineering, and business interests.

## Admission Criteria

It is recommended that applicants have the following:

OSSD with six Grade 12 U or M credits, or equivalent. Work experience and/or post-secondary education related to design or business is desirable.

## Certificate Requirements

The successful completion of eight courses (three required courses and five electives), with a cumulative grade point average of 1.67 or higher, is required for the certificate.

## Recommended Sequence

Students are advised to take the courses in the following sequence:

- CDDM 101
- CDDM 102
- Electives (five selections)
- CDDM 103

## Required Courses

- CDDM 101 Design Management: Introduction to Design Management
- CDDM 102 Design Management: Design Management II
- CDDM 103 Design Management: Design Management Project

## Electives (select five)

- CCMN 314 Communication: Professional Presentations
- CDDM 104 Design Management: Design Awareness I
- CDDM 106 Design Management: Design Research
- CDID 150 Interior Design: Design Theory
- CENT 500 Entrepreneurship: New Venture Startup
- CGCM 110 Graphic Communications: Introduction to Graphic Communications
- CITM 100 Information Technology Management: Foundations of Information Systems
- CMHR 405 Human Resources: Organizational Behaviour
- CMKT 100 Marketing: Principles of Marketing
- CTEC 210 Technology Studies: Fundamentals of Project Management

## Note to registered certificate program students

*Electives*

CKPM 202 deleted.

CTEC 210 added.

# DIGITAL ART PRODUCTION

*Note: Many of the courses in this program are available by distance education; visit the distance education website at [ryerson.ca/ce/de](http://ryerson.ca/ce/de) for further information.*

This certificate balances creative and artistic skills with practical digital skills in an experiential learning environment. Students will hone design, visual communication, and storytelling skills; create original content; and integrate this content into the digital world. Students will also gain theoretical, historical, and contemporary knowledge of art, design, and global communication. The evolution of media requires competency in creating, designing, and managing digital content. This certificate helps to prepare students for careers in fields such as interaction and user interface design, graphic design, computer generated effects design, mobile application development, animation, artistic production, and social media or game art.

For detailed certificate and program information, please visit [ryerson.ca/ce/digitalart](http://ryerson.ca/ce/digitalart).

## Admission Criteria

It is recommended that applicants have the following:

OSSD with six Grade 12 U or M credits with a minimum average of 60 percent, or equivalent, or mature student status.

## Certificate Requirements

The successful completion of six courses, with a cumulative grade point average of 1.67 or higher, is required for the certificate.

## Required Courses

- CMPC 101 Combined Media: Visual Studies I
- CMPC 103 Combined Media: Art and the Classical Tradition

## Electives (select four)

- CDMP 125 Film Studies: Fiction Screenwriting
- CEID 100 Digital Entrepreneurship Innovation: Digital Skills and Innovation for the Global Economy
- CFPN 534 Media Studies: Graphic Design
- CFPN 535 Media Studies: Interaction Design
- CFPN 537 Media Studies: Immersive Imaging
- CFPN 539 Photography: The Human Figure
- CFPN 541 Film Studies: Digital Animation Concepts
- CFPN 542 Media Studies: Design for Mobile Devices
- CMPC 203 Combined Media: Art in the Modern World
- CNPF 566 Media Studies: History of Animation



# DISASTER AND EMERGENCY MANAGEMENT

*Note: This certificate program may be completed entirely at a distance. Visit the distance education website at [ryerson.ca/ce/de](http://ryerson.ca/ce/de) for further information.*

This certificate is designed to prepare participants to act as members of a team involved in, planning for, and dealing with emergency incidents. Learners will be instructed on the phases of disaster management such as mitigation, preparedness, response, and recovery.

The fundamental goal of this certificate is to introduce participants to best practices including risk assessment and risk mitigation; pre- and post-disaster planning including business contingency planning; effective communication guidelines, pre- and post-disaster mitigation; on-the-ground operations; and follow through in search, rescue, response, and recovery.

The curriculum emphasizes the knowledge, processes, tools, and mechanisms necessary to ensure that disaster and emergency management projects are executed using best practices and success-proven procedures and resources deployment, and that they are performed in the most effective way possible.

For detailed certificate and program information, including the Disaster and Emergency Fast Track (CKDM 999), please visit [ryerson.ca/ce/disaster](http://ryerson.ca/ce/disaster).

**Program Director:** Anne-Marie Brinsmead, [a2brinsm@ryerson.ca](mailto:a2brinsm@ryerson.ca)

## Admission Criteria

It is recommended that applicants have the following:

OSSD with six Grade 12 U, including Grade 12 U or M credits, or equivalent, or mature student status.

## Certificate Requirements

The successful completion of six courses, with a cumulative grade point average of 1.67 or higher, is required for the certificate.

### Required Courses

- CKDM 160 Disaster Emergency Management: Emerging Issues
- CSCI 232 Science: Incident and Operations Management
- CSCI 234 Science: Analysis of Critical Incidents
- CSCI 241 Science: Planning for Emergency Management
- CSCI 243 Science: Continuity and Risk Management

### Electives (select one)

- CDCM 125 Communication: Disaster and Emergency Incident Communications
- CKDM 105 Disaster Emergency Management: Project Management in Disaster Recovery
- CKDM 110 Disaster Emergency Management: Law of Disaster and Emergency Management
- CKDM 115 Disaster Emergency Management: Intl Policies and Disaster Coord
- CSCI 230 Science: Emergency Management Practice

## Note to registered certificate program students

Effective Fall 2017, the Certificate in Disaster and Emergency Management has been revised. Students who formally registered in the certificate prior to July 2, 2017, must complete the program requirements in effect at the time they registered.

### Required Courses

CKDM 120, CKDM 130, CKDM 140, and CKDM 150 deleted.

CSCI 232, CSCI 234, CSCI 241, and CSCI 243 added.

### Electives

CKDM 100 deleted.

CSCI 230 added.

## Professional Development

You can receive an acknowledgement of professional achievement once you have successfully completed three courses as follows:

**Professional Development Award: Survival in Urban Disasters and Emergencies** requires completion of any three of the following courses: CSCI 230, CSCI 232, CSCI 234, and/or CSCI 243.

Refer to page 149 for more information.

# ECONOMICS

*Note: Many of the courses in this program are available by distance education; visit the distance education website at [ryerson.ca/ce/de](http://ryerson.ca/ce/de) for further information.*

The Certificate in Economics is designed for those without a post-secondary education in economics who wish to acquire knowledge of the discipline. A sound knowledge of economic principles is an important asset for people in a variety of fields of endeavour. The program will be of particular interest to those employed in business or government, and to secondary school teachers of economics.

For detailed certificate and program information, please visit [ryerson.ca/ce/economics](http://ryerson.ca/ce/economics).

**Academic Coordinator:** Michael Jolly, [mjolly@ryerson.ca](mailto:mjolly@ryerson.ca)

## Admission Criteria

It is recommended that applicants have the following:

OSSD with six Grade 12 U (including Grade 12 U credits in English and Mathematics) or M credits, or equivalent, or mature student status.

## Certificate Requirements

The successful completion of six courses, with a cumulative grade point average of 1.67 or higher, is required for the certificate.

## Required Courses

- CECN 104 Economics: Introductory Microeconomics
- CECN 204 Economics: Introductory Macroeconomics

## Electives (select four)

Students select a total of four electives, one of which must be CECN 301 or CECN 504.

Please consult the course descriptions for prerequisites.

- CECN 301 Economics: Intermediate Macroeconomics I
- CECN 321 Economics: Introduction to Law and Economics
- CECN 501 Economics: Industrial Organization
- CECN 502 Economics: Economics of Energy and Natural Resources
- CECN 504 Economics: Intermediate Microeconomics I
- CECN 506 Economics: Money and Banking
- CECN 510 Economics: Environmental Economics
- CECN 600 Economics: Intermediate Macroeconomics II
- CECN 601 Economics: The Economics of Information
- CECN 605 Economics: Labour Economics
- CECN 606 Economics: International Monetary Economics
- CECN 614 Economics: An Introduction to Game Theory
- CECN 627 Economics: Econometrics I
- CECN 640 Economics: The Economics of Immigration
- CECN 700 Economics: Intermediate Microeconomics II
- CECN 702 Economics: Econometrics II
- CECN 703 Economics: Public Sector Economics
- CECN 715 Economics: Advanced Microeconomics
- CECN 803 Economics: Canadian Tax Policy
- CECN 808 Economics: Economic Growth and Technological Change
- CECN 815 Economics: Advanced Macroeconomics

*Note: CECN 104 and CECN 204 give the student access to all the upper-level liberal studies courses in Economics as well as to the upper-level professionally related courses. CECN 110 and CECN 210 are not allowed as substitutes for CECN 104 and CECN 204 for Liberal Studies credit.*

## Suggested Elective Groupings

Students may choose electives from a variety of areas in economics, or they may choose to focus on a specific area to achieve their individual goals. The electives may be grouped as follows:

**Core Economics:** CECN 301, CECN 504, CECN 600, CECN 700

**International Economics:** CECN 301, CECN 504, CECN 606, CECN 700

**Macroeconomics:** CECN 301, CECN 506, CECN 600, CECN 606, CECN 808, CECN 815

**Microeconomics:** CECN 501, CECN 504, CECN 601, CECN 614, CECN 700, CECN 715

**Environmental Economics:** CECN 301, CECN 502, CECN 510, CECN 700

**Applied Economics:** CECN 301, CECN 605, CECN 627, CECN 702

**Economic Policy:** CECN 301, CECN 321, CECN 703, CECN 803

# ECONOMICS AND FINANCE

*NOTE: This certificate program may be completed entirely at a distance. Visit the distance education website at [ryerson.ca/ce/de](http://ryerson.ca/ce/de) for further information.*

This certificate will help students to qualify as Chartered Financial Analysts, Certified Financial Analysts, and/or Certified Financial Planners, to name only three examples of professional designations. The program will also help to prepare students for the Canadian Securities Examination.

For detailed certificate and program information, please visit [ryerson.ca/ce/economics](http://ryerson.ca/ce/economics).

**Academic Coordinator:** Michael Jolly, [mjolly@ryerson.ca](mailto:mjolly@ryerson.ca)

## Admission Criteria

It is recommended that applicants have the following:

OSSD with six Grade 12 U, including Grade 12 U credits in English and Mathematics (one of which must be Advanced Functions, Calculus and Vectors, or Data Management), or M credits with a minimum grade of 70 percent; or equivalent; or mature student status. As well, student must have completed the following course or equivalent:

- CACC 110 Accounting: Financial Accounting for Accounting Majors

## Certificate Requirements

The successful completion of eight courses, with a cumulative grade point average of 1.67 or higher, is required for the certificate.

### Required Courses

- CECN 104 Economics: Introductory Microeconomics
- CECN 204 Economics: Introductory Macroeconomics
- CECN 506 Economics: Money and Banking
- CFIN 300 Finance: Managerial Finance I
- CFIN 401 Finance: Managerial Finance II
- CFIN 501 Finance: Investment Analysis

## Electives (select two)

Note: Students are allowed to choose only one of CECN 129 or CQMS 102 as their electives.

Students are allowed to choose only one of CECN 721 or CFIN 621 as their electives.

- CECN 129 Economics: Statistics for Economics I
- CECN 301 Economics: Intermediate Macroeconomics I
- CECN 504 Economics: Intermediate Microeconomics I
- CECN 606 Economics: International Monetary Economics
- CECN 703 Economics: Public Sector Economics
- CECN 721 Economics: International Financial Markets
- CECN 803 Economics: Canadian Tax Policy
- CFIN 502 Finance: Personal Financial Planning
- CFIN 510 Finance: Small Business Finance
- CFIN 512 Finance: Risk Management and Insurance
- CFIN 601 Finance: Derivatives
- CFIN 612 Finance: Retirement and Estate Planning
- CFIN 621 Finance: International Finance
- CQMS 102 Quantitative Methods: Business Statistics I



# ENERGY MANAGEMENT AND INNOVATION

*NOTE: This certificate program may be completed entirely at a distance. Visit the distance education website at [ryerson.ca/ce/de](http://ryerson.ca/ce/de) for further information.*

This certificate program provides adult learners with an opportunity to acquire a level of knowledge and expertise that will permit them to contribute effectively to energy management, conservation, sustainability, and public policy governing this regulated sector; and to energy innovation, entrepreneurship, and the challenges and opportunities for developing new energy technologies and business enterprises. This program has been developed in cooperation with Ryerson's Centre for Urban Energy.

For detailed certificate and program information, please visit [ryerson.ca/ce/energy](http://ryerson.ca/ce/energy).

**Academic Coordinator:** Dr. Bala Venkatesh, [bala@ryerson.ca](mailto:bala@ryerson.ca) (copying Anne-Marie Brinsmead, Program Director, [a2brinsm@ryerson.ca](mailto:a2brinsm@ryerson.ca))

## Admission Criteria

It is recommended that applicants have the following:

Mature student status and evidence of relevant college or university level coursework, or equivalent

OR

Mature student status together with relevant industrial or professional experience

## Certificate Requirements

The successful completion of six courses, with a cumulative grade point average of 1.67 or higher, is required for the certificate.

## Recommended Sequence

Students are advised to take the courses in the following sequence:

CTEC 241; CTEC 269; CTEC 282; CTEC 264; Electives (two selections)

## Required Courses

- CTEC 241 Technology Studies: Energy Innovation
- CTEC 264 Technology Studies: Trends in Smart Grid
- CTEC 269 Technology Studies: Trends in Energy Conservation
- CTEC 282 Technology Studies: Public Policy in Energy

## Electives (select two)

- CECN 510 Economics: Environmental Economics
- CKEI 140 Energy Management: Current Topics in Energy Management and Innovation
- CKES 190 Environmental Sciences: Renewable Energy and Green Technology
- CKSS 100 Sustainability Management: Fundamentals in Sustainability I
- CTEC 210 Technology Studies: Fundamentals of Project Management

## Note to registered certificate program students

Effective Fall 2017, the Certificate in Energy Management and Innovation has been revised. Students who formally registered in the certificate prior to July 2, 2017, must complete the program requirements in effect at the time they registered.

### Required Courses

CKEI 100, CKEI 110, CKEI 120, and CKEI 130 deleted.  
CTEC 241, CTEC 264, CTEC 269, and CTEC 282 added.

### Electives

CKPM 202 deleted.  
CTEC 210 added.

"My experience in the Certificate in Energy Management and Innovation highlighted our future energy options, a better understanding of how markets perform, and a focus on innovation and energy entrepreneurship tied to skills required to be a better manager or business owner."

**PATRICK MCMAHON**  
LEARNER, ENERGY MANAGEMENT AND INNOVATION



# ENGLISH LITERATURE AND POPULAR CULTURE

This certificate is designed for students who appreciate the important ways in which English literature and culture enhance the quality of their lives and careers. Designed to allow students to tailor their studies to their own interests and aspirations, the program offers a dynamic grounding in the study of literature, writing, media, and popular culture. Graduates will have a strong knowledge base in contemporary and historical literature and culture that will prove useful in the experience, analysis, and production of cultural works.

**Academic Coordinator:** Bill Emery, [bemery@ryerson.ca](mailto:bemery@ryerson.ca)

## Admission Criteria

It is recommended that applicants have the following:

OSSD with six Grade 12 U or M credits, including a credit in English with a minimum grade of 70 percent; or equivalent; or mature student status.

## Certificate Requirements

The successful completion of six courses (two required courses and four electives), with a cumulative grade point average of 1.67 or higher, is required for the certificate.

## Required Courses

- CENG 110 English Literature: Literatures Across Borders
- CENG 208 English Literature: Introduction to Non-Fiction

## Elective Streams (select four)

Students select a total of four electives from either stream.

### *Literature and Entertainment Stream (select a maximum of four)*

- CENG 112 English Literature: Zap, Pow, Bang: Pop Lit
- CENG 222 English Literature: Fairy Tales and Fantasies
- CENG 503 English Literature: Science Fiction
- CENG 510 English Literature: Gothic Horror
- CENG 705 English Literature: Studies in Visual Cultures
- CENG 706 English Literature: Shakespeare and Performance
- CENG 888 English Literature: Televisual Texts and Contexts

### *Reading/Writing Culture Stream (select a maximum of four)*

- CENG 200 English Literature: Writing as a Cultural Act
- CENG 505 English Writing Development: Creative Writing
- CENG 511 English Literature: The Art of Writing Life
- CENG 520 English Literature: The Language of Persuasion
- CENG 610 English Literature: The Language of Love, Sex and Gender
- CENG 720 English Literature: Persuasion from Plato to Present
- CENG 921 English Literature: Narrative in a Digital Age



# ENTERPRISE ARCHITECTURE AND INFRASTRUCTURE MANAGEMENT

*Note: Many of the courses in this program are available by distance education; visit the distance education website at [ryerson.ca/ce/de](http://ryerson.ca/ce/de) for further information.*

The telecommunications profession in Canada has grown rapidly. With the introduction of competition to the marketplace and the growing need to move voice, image, and data, the demand for qualified professionals in this area is steadily increasing. Graduates of this certificate will have the skills required for positions involving the use, analysis, design, implementation, and management of telecommunications. The certificate will also provide a perspective on the role and function of information systems.

Courses may be credited toward the Ryerson Bachelor of Commerce (Information Technology Management) degree program should candidates wish to continue their education after attaining this certificate. Up to three course credits may be granted on the basis of courses successfully completed at other institutions. All certificate courses are the equivalents of degree credit courses currently offered by the School of Information Technology Management; however, please note that upon successful admission to the program, courses will be assessed for currency and transferability on a course-by-course basis.

For detailed certificate and program information, contact The Chang School at 416.979.5035, attend a Program Open House, or visit [ryerson.ca/ce/itm](http://ryerson.ca/ce/itm).

## Admission Criteria

It is recommended that applicants have the following:

OSSD with six Grade 12 U or M credits, or equivalent, or mature student status, and basic computer literacy and knowledge of the functions of business.

## Certificate Requirements

The successful completion of six single-term courses, with a cumulative grade point average of 1.67 or higher, is required for the certificate. Good oral and written communications skills are essential for success in the program.

## Required Courses

- CITM 207 Information Technology Management: Computer-Enabled Problem Solving
- CITM 301 Information Technology Management: IT Infrastructure
- CITM 305 Information Technology Management: Systems Analysis and Design
- CITM 600 Information Technology Management: Data Communications Network Design

## Electives (select two)

- CITM 315 Information Technology Management: Server Administration
- CITM 410 Information Technology Management: Business Process Design
- CITM 706 Information Technology Management: Enterprise Architecture
- CITM 750 Information Technology Management: IS Project Management
- CITM 820 Information Technology Management: Information Systems Security and Privacy



# ENTREPRENEURSHIP AND SMALL BUSINESS

*NOTE: This certificate program may be completed entirely at a distance. Visit the distance education website at [ryerson.ca/ce/de](http://ryerson.ca/ce/de) for further information.*

The Required Courses are available online. The certificate may be completed fully online if the Elective courses agreed upon with your academic coordinator are available online.

Entrepreneurs are innovative people who take on the task of turning an unmet opportunity into a business reality. This certificate is designed to give you the tools and knowledge needed to launch and run a Canadian business. The four Required Courses build skills in ideation, opportunity evaluation, business intelligence, and venture planning. Two additional Elective courses allow the student the flexibility to focus on areas specific to their business requirements. Note: The Elective courses must be chosen in prior consultation with the academic coordinator before they can be applied towards certificate graduation requirements.

For detailed certificate and program information, please visit [ryerson.ca/ce/entrepreneurship](http://ryerson.ca/ce/entrepreneurship).

## Admission Criteria

It is recommended that applicants have the following:

OSSD with six OAC credits or Grade 12 U or M credits, or equivalent, or mature student status.

## Certificate Requirements

The successful completion of six courses, with a cumulative grade point average of 1.67 or higher, is required for the certificate.

## Recommended Sequence

It is recommended that students complete CENT 500 before taking CENT 505.

## Required Courses

- CENT 500 Entrepreneurship: New Venture Startup
- CENT 505 Entrepreneurship: Small-Business Management
- CENT 526 Entrepreneurship: Entrepreneurial Behaviour and Strategy
- CENT 601 Entrepreneurship: Identifying Opportunities

## Electives

Students must consult with the academic coordinator. With the submission of an approved Continuing Education Certificate Exemption (Substitution/Directive) Form signed by the academic coordinator, students will complete two courses relevant to their entrepreneurial and small business interests (as indicated in their business plan developed in CENT 500).

## Professional Development

You can receive an acknowledgement of professional achievement once you have successfully completed three courses as follows:

**Professional Development Award: Entrepreneurship and Small Business** requires completion of CENT 500, CENT 505, and (CENT 526 or CENT 601).

Refer to page 128 for more information.



“The Chang School’s Certificate in Entrepreneurship and Small Business features courses that are useful to aspiring entrepreneurs and owners or managers of small businesses when innovating and growing their enterprises. The subjects covered are also of great value to those seeking to become intrapreneurs within their roles in larger organizations. From learning how to start a new venture to understanding the functional operations of a small business, participants in this program can leverage the world-class reputation for innovation and entrepreneurship offered by the Ted Rogers School of Management to advance their own pursuits.”

**PHILIP WALSH**  
ACADEMIC COORDINATOR, CERTIFICATE IN ENTREPRENEURSHIP AND SMALL BUSINESS

# ENVIRONMENTAL SCIENCES

This multidisciplinary program provides graduates with the broad knowledge base and wide range of skills they require as professionals in the environmental field. Students receive a grounding in air, water, and soil processes and contamination, biotechnology, instrumentation, and experiment design. The program also requires the student to develop proficiency in environmental management. Expertise is drawn from a number of degree programs including Applied Chemistry and Biology, Chemical Engineering, Civil Engineering, Mechanical Engineering, and Environmental Health.

For detailed certificate and program information, please visit [ryerson.ca/ce/envirosoci](http://ryerson.ca/ce/envirosoci).

## Admission Criteria

It is recommended that applicants have the following:

Undergraduate degree in a relevant field with a GPA of 2.0, or equivalent

OR

A post-secondary diploma with a GPA of 2.0, or equivalent, AND two years of full-time relevant employment

OR

A total equivalent of four years of relevant full-time employment.

Knowledge of basic chemistry at university level is highly recommended.

## Certificate Requirements

The successful completion of six courses, with a cumulative grade point average of 1.67 or higher, is required for the certificate.

## Required Courses

- CKES 120 Environmental Sciences: Environmental and Atmospheric Processes
- CKES 170 Environmental Sciences: Water Treatment
- CKES 190 Environmental Sciences: Renewable Energy and Green Technology
- CKES 210 Environmental Sciences: Applied Environmental Analysis
- CKES 220 Environmental Sciences: Environmental Law and Practice

## Electives (select one)

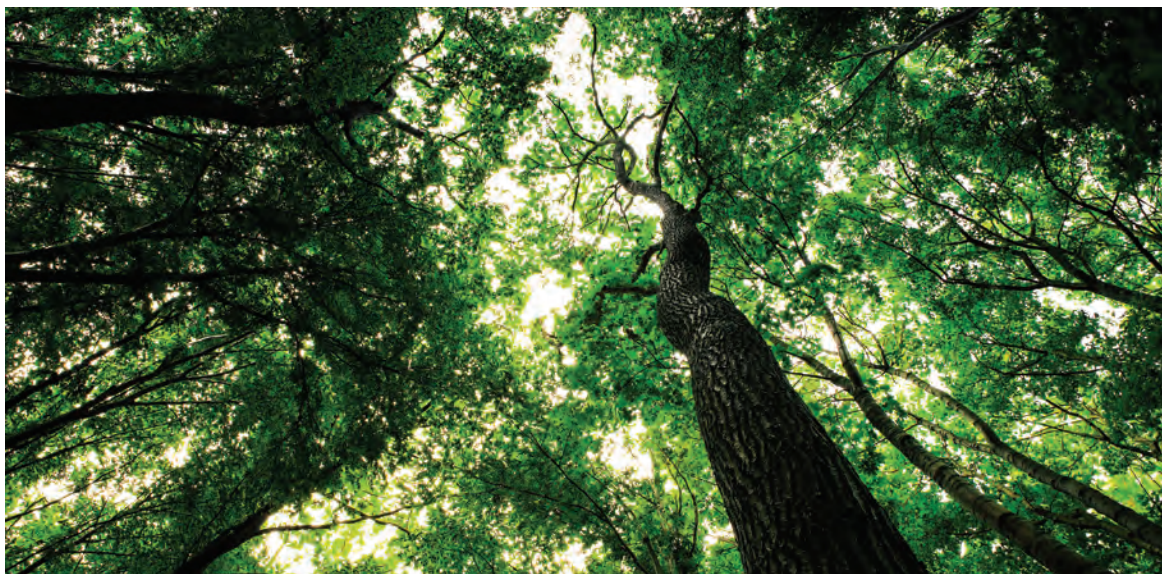
- CKES 160 Environmental Sciences: Waste Management
- CKES 180 Environmental Sciences: Site Assessment

## Professional Development

You can receive an acknowledgement of professional achievement once you have successfully completed three courses as follows:

**Professional Development Award: Environmental Sciences** requires completion of any three of the following courses: CKES 120, CKES 160, CKES 170, CKES 180, CKES 190, CKES 210, and/or CKES 220.

Refer to page 130 for more information.



# ETHICS

*Note: Many of the courses in this program are available by distance education; visit the distance education website at [ryerson.ca/ce/de](http://ryerson.ca/ce/de) for further information.*

The Certificate in Ethics is designed to provide relevant, university-level education for individuals whose career paths require an ability to apply the principles of ethics in private and public sector organizations.

Individuals with knowledge of and practice in applied ethics have competencies to develop personal and organizational codes of ethics; to recognize, counsel, and train in analyzing and resolving ethical dilemmas; and to defend and monitor ethical decision making in their organizations.

**Academic Coordinator:** Thomas Hart, [acphilosophy@ryerson.ca](mailto:acphilosophy@ryerson.ca) or 416.979.5000, ext. 6162

## Admission Criteria

It is recommended that applicants have the following:

OSSD with six Grade 12 U or M credits, or equivalent, or mature student status.

## Certificate Requirements

The successful completion of six courses (one required course and five electives), with a cumulative grade point average of 1.67 or higher, is required for the certificate.

## Recommended Sequence

Students are advised to take the courses in the following sequence: Electives – Group A (two selections); Electives – Group B (three selections); and COPH 200.

## Required Course

- COPH 200 Humanities: Ethics Capstone Course

## Electives – Group A (select two)

### *Business and Organizations Stream*

- CPHL 307 Philosophy: Business Ethics
- CPHL 444 Philosophy: Ethics in Health Services Management

### *Environment Stream*

- CPHL 500 Philosophy: Philosophy of the Natural Environment
- CPHL 525 Philosophy: Environmental Ethics

### *Ethical Theory Stream*

- CPHL 503 Philosophy: Ancient and Modern Ethics
- CPHL 603 Philosophy: Modern and Contemporary Ethics

### *Health Stream*

- CPHL 302 Philosophy: Ethics and Health Care
- CPHL 444 Philosophy: Ethics in Health Services Management
- CPHL 509 Philosophy: Bioethics

### *Human Rights and Administrative Justice Stream*

- CPHL 400 Philosophy: Human Rights and Justice
- CPHL 614 Philosophy: Philosophy of Human Rights

### *Law and Jurisprudence Stream*

- CPHL 449 Philosophy: Philosophy of Punishment
- CPHL 612 Philosophy: Philosophy of Law

### *Media and Culture Stream*

- CPHL 530 Philosophy: Media Ethics

## Electives – Group B (select three not previously taken in Electives – Group A)

### *Business and Organizations Stream*

- CGMS 802 Global Management: Ethics and Regulation of Int'l Bus
- CINT 905 Interdisciplinary Studies: Conflict Resolution in Community Services
- CLAW 122 Law: Business Law
- CLAW 525 Law: The Law of the Marketplace
- CLAW 529 Law: Employment and Labour Law
- CLAW 603 Law: Advanced Business Law
- CMHR 600 Human Resources: Diversity and Inclusion in the Workplace
- CMHR 640 Human Resources: Leadership
- CODG 130 Digital Geography: Legal and Ethical Issues in GIS and Digital Data
- CPHL 307 Philosophy: Business Ethics
- CPHL 444 Philosophy: Ethics in Health Services Management

### *Environment Stream*

- CECN 502 Economics: Economics of Energy and Natural Resources
- CECN 510 Economics: Environmental Economics
- CPHL 500 Philosophy: Philosophy of the Natural Environment
- CPHL 525 Philosophy: Environmental Ethics
- CPSY 518 Psychology: Environmental Psychology

### *Ethical Theory Stream*

- CPHL 503 Philosophy: Ancient and Modern Ethics
- CPHL 603 Philosophy: Modern and Contemporary Ethics

**Health Stream**

- CPHL 302 Philosophy: Ethics and Health Care
- CPHL 444 Philosophy: Ethics in Health Services Management
- CPHL 509 Philosophy: Bioethics
- CPHL 602 Philosophy: Health Policy: Ethics and Justice
- CPSY 124 Psychology: Social Psychology
- CPSY 706 Psychology: Personal Growth and Positive Psychology
- CPSY 802 Psychology: Death, Dying and Bereavement
- CPSY 808 Psychology: Community Psychology

**Human Rights and Administrative Justice Stream**

- CINT 905 Interdisciplinary Studies: Conflict Resolution in Community Services
- CPHL 400 Philosophy: Human Rights and Justice
- CPHL 507 Philosophy: Ethics and Disability
- CPHL 614 Philosophy: Philosophy of Human Rights
- CPOG 424 Politics and Public Administration: Human Rights and Global Politics
- CPPA 125 Politics and Public Administration: Rights, Equity and the State
- CPPA 301 Politics and Public Administration: Administrative Law
- CSOC 609 Sociology: Women and Human Rights
- CSOC 705 Sociology: Law and Justice

**Law and Jurisprudence Stream**

- CCRM 200 Criminal Justice and Criminology: Criminal Law
- CCRM 322 Criminal Justice and Criminology: Ethics in Criminal Justice
- CECN 321 Economics: Introduction to Law and Economics
- CLAW 122 Law: Business Law
- CLAW 525 Law: The Law of the Marketplace
- CLAW 529 Law: Employment and Labour Law
- CLAW 603 Law: Advanced Business Law
- CODG 130 Digital Geography: Legal and Ethical Issues in GIS and Digital Data
- CPHL 449 Philosophy: Philosophy of Punishment
- CPHL 612 Philosophy: Philosophy of Law
- CPHL 921 Philosophy: Intellectual Property and Technology
- CPPA 301 Politics and Public Administration: Administrative Law
- CPSY 300 Psychology: Psychology and Law
- CSOC 705 Sociology: Law and Justice

**Media and Culture Stream**

- CENG 413 English Literature: Colonial and Postcolonial Literatures
- CENG 520 English Literature: The Language of Persuasion
- CENG 621 English Literature: Women's Texts, Global Contexts
- CENG 720 English Literature: Persuasion from Plato to Present
- CHST 602 History: Propaganda!
- CPHL 401 Philosophy: Philosophy and Mass Culture
- CPHL 530 Philosophy: Media Ethics
- CPHL 621 Philosophy: Non-Western Philosophy

**Note to registered certificate program students****Electives - Group B (Business and Organizations)**

CITM 407 deleted.

# FACILITY AND PROPERTY MANAGEMENT

## Formerly: Facility Management

Almost every organization has offices, warehouses, manufacturing centres, data centres, or other facilities to support their business needs, whether in the private or public sector.

Facility and property managers are the stewards of the space their organizations occupy and get involved in issues ranging from technical to environmental to human resource to space and leasing and even real estate strategy to provide productive, safe, comfortable work environments for their organization's employees.

This certificate program is designed to equip you with the most important skills you need for the facility and property management profession, whether you want to be the head of facilities or simply want to be in one of the many specialist and support roles larger organizations need. It provides facility and property management specific courses that focus on the core responsibilities and provides competencies that are important to a successful career.

The program will be of interest to individuals at various stages of their career:

- those who are being prepared by an organization to assume a role in facility and property management
- those who are newly appointed to a facility or property management department
- those who wish to upgrade their credentials within the facility or property management department or to implement a career change

The Certificate in Facility and Property Management combines direct facility and property management courses with broader business- and management-related courses necessary to enter and advance in the profession.

For detailed certificate and program information, please visit [ryerson.ca/ce/fm](http://ryerson.ca/ce/fm).

## Admission Criteria

It is recommended that applicants have the following:

Successful completion of a minimum two-year post-secondary program, or mature student status with related professional experience and education.

## Certificate Requirements

The successful completion of six courses, with a cumulative grade point average of 1.67 or higher, is required for the certificate.

## Required Courses (six 39-hour courses. Two 19.5-hour courses may be completed as the equivalent of one 39-hour course.)

### 39-Hour Courses

- CDFM 102 Facility Management: Facility Management Fundamentals
- CDFM 103 Facility Management: Project Planning, Design, and Management
- CDFM 104 Facility Management: Building Operations and Maintenance
- CDFM 105 Facility Management: Space Planning and Management
- CDFM 106 Facility Management: Leadership, Strategy, Business
- CDFM 107 Facility Management: Recruiting and Managing Employ

### 19.5-Hour Courses

- CDFM 110 Facility Management: Leasing and Lease Administration
- CDFM 111 Facility Management: Capital and Asset Management
- CDFM 112 Facility Management: Risk, OHS, Regulations, and the Law
- CDFM 113 Facility Management: Sustainability in Facilities
- CDFM 114 Facility Management: Real Estate Planning and Development

## Note to registered certificate program students

Effective Fall 2017, the Certificate in Facility Management has been revised to Facility and Property Management. Students who formally registered in the certificate prior to July 2, 2017, must complete the program requirements in effect at the time they registered.

# FASHION COORDINATION AND STYLING

This certificate is designed to prepare professionally trained students for a career as fashion coordination and styling consultants. It will provide graduates with a solid knowledge foundation, with creative and technical expertise, and with sound problem-solving abilities. The program offers a stimulating study of art, design, and costume history and technology, which will prepare the graduate for career progression within this specialist field of fashion. The fashion industry has far-reaching influence and generates billions of dollars in many sectors of the Canadian economy. There are many avenues of opportunity for graduates in areas such as video and movie production, special events, trade shows and promotional exhibits, retail, television, magazines, corporate and/or individual consultation, and business ownership.

For detailed information regarding the Summer Fashion Intensive, please visit [ryerson.ca/ce/fashionintensive](http://ryerson.ca/ce/fashionintensive).

## Admission Criteria

It is recommended that applicants have the following:

OSSD with six Grade 12 U or M credits, or equivalent, or mature student status with relevant professional experience.

## Certificate Requirements

The successful completion of eight courses (four required courses and four electives), with a grade point average of 1.67 or higher, is required for completion of the certificate.

## Required Courses

- CDFC 101 Fashion Coordination and Styling: Fashion Coordination
- CDFC 102 Fashion Coordination and Styling: Fashion Styling
- CDFC 103 Fashion Coordination and Styling: Design Fundamentals in Fashion
- CDFC 104 Fashion Coordination and Styling: Creating the Image

## Electives (select four)

- CCMN 373 Communication: Fashion Communication: Professional Approaches
- CDFA 104 Fashion: Fashion Drawing I
- CDFA 110 Fashion: Fashion Drawing II
- CDFC 105 Fashion Coordination and Styling: Fashion Shows and Special Events
- CDFC 106 Fashion Coordination and Styling: Fashion, Culture, and Society
- CDFC 107 Fashion Coordination and Styling: Fashion Buying
- CDFC 200 Fashion Coordination and Styling: Fashion Photography
- CENT 500 Entrepreneurship: New Venture Startup
- CFSN 703 Fashion: Visual Merchandising and Display
- CMKT 100 Marketing: Principles of Marketing



# FILM STUDIES

The Certificate in Film Studies provides a good basic grounding in the principles, contemporary theories, and techniques of the motion picture medium. Courses range from an introduction to basic filmmaking to specialized courses such as screen writing; cinematography and lighting workshops; directing screen performance; production design; sound design; and the business of developing, producing, and marketing motion pictures. It is an excellent starting point for people who want to pursue a career in the film industry or satisfy their curiosity about film and film production. The program will be of interest to various individuals:

- those working in the film industry who want to improve their qualifications
- those new to the industry, or others such as actors, who want to understand more fully all aspects of production
- those working in other fields who want to make a career change
- those working in allied fields who seek a better understanding of film production
- elementary and secondary school teachers who will apply the theoretical and practical knowledge they receive to their own teaching

The Chang School showcases the talents and recognizes the skill and dedication of continuing education film studies students at the annual Peter Gerretsen Film Awards.

For detailed certificate and program information, including the Summer Film School (CDMP 999), please visit [ryerson.ca/ce/film](http://ryerson.ca/ce/film).

## Admission Criteria

It is recommended that applicants have the following:

OSSD with six Grade 12 U or M credits (including English), or equivalent, with a minimum average of 60 percent, or mature student status with relevant professional experience.

## Certificate Requirements

The successful completion of eight courses (five required courses and three electives (or 117 course hours)), with a cumulative grade point average of 1.67 or higher, is required for the certificate.

*Note: Students who register in courses for which they do not have the stated prerequisites will be withdrawn from those courses, unless they have been given prior permission by the academic coordinator.*

## Equipment/Facilities Use

Please note that equipment and facilities use outside of class time will not be provided. Extra time may be purchased.

## Required Courses

*Please consult the course descriptions for prerequisites.*

- CDMP 129 Film Studies: Motion Picture Production I
- CDMP 229 Film Studies: Motion Picture Production II
- CMPF 107 Film Studies: Film Tools and Applications I
- CMPF 300 Film Studies: Film Technology: Multi-Media
- CMPF 423 Film Studies: Film Technology

## Electives (select three courses or 117 hours)

- CDMP 109 Business of Film: Business of Film - Producing
- CDMP 114 Film Studies: Post-Production Sound
- CDMP 119 Film Studies: Digital Film Production I
- CDMP 120 Film Studies: Film History
- CDMP 121 Film Studies: Film Theory
- CDMP 122 Film Studies: Production Design for Film and Theatre
- CDMP 123 Film Studies: Art Direction for Film and Special Events
- CDMP 125 Film Studies: Fiction Screenwriting
- CDMP 126 Film Studies: Non-Fiction Screenwriting
- CDMP 209 Business of Film: Business of Film - Development
- CDMP 215 Business of Film: Movie Marketing and Distribution
- CDMP 231 Film Studies: Short Filmmaking: On Location
- CDMP 232 Film Studies: Documentary Filmmaking in Cuba
- CDMP 700 Film Studies: Advanced Screenwriting
- CFPN 502 Film Studies: Directing Screen Performance - Basic Principles
- CFPN 531 Film Studies: Cinematography and Lighting Design I
- CFPN 631 Film Studies: Cinematography and Lighting Design II
- CMPC 101 Combined Media: Visual Studies I

## Note to registered certificate program students

Effective Fall 2017, the Certificate in Film Studies has been revised. Students who formally registered in the certificate prior to July 2, 2017, must complete the program requirements in effect at the time they registered.

### Required Courses

CDMP 117, CDMP 118, and CDMP 223 deleted.  
CMPF 107, CMPF 300, and CMPF 423 added.





**Joanna Tsanis,**  
Graduate, Certificate in Film Studies  
(Summer Film School)

*“I guess I just wanted more hands-on experience...But I also wanted more of a holistic comprehension of filmmaking.”*

## SKILL MEETS MASTERY

Joanna Tsanis admits that her first film won't stand out as her best: as a 10-year-old, she made a crude imitation of the “Scream” horror series, with her brother playing the killer. “My parents bought me a VHS camcorder, and I would write a little script and we would make these ridiculous horror films,” she says.

Sadly, the films (it was a trilogy) later went missing, but Joanna was bitten by the film bug. Through high school, she honed her writing.

The trick was then finding a way to break into the industry. A month-long film workshop in New York gave her some grounding, but she lacked the technical skills to make a go of it in an industry famous for chewing up and spitting out ambitious youngsters.

“I guess I just wanted more hands-on experience,” she says. “But I also wanted more of a holistic comprehension of filmmaking.”

A Google search led her to the 12-week Summer Film School program at The Chang School, where she found what she was looking for: a course focused on the basics of film production.

“It was very intensive, it was five days a week of classes, and most weekends were spent filming the class assignments,” she says.

The program gave Joanna access to up-to-date technology, and gave her a sense of the different roles needed to produce a film.

Since taking the course, doors have begun opening for her.

“I'm producing a World War II era short film that I wrote and I'm writing a feature length psychological thriller,” she says. She's also produced two documentary shorts and numerous branded content videos, which helps pay the bills.

She's opened her own production company called Ideamaker Films, and her long-term goal is simple: “To produce a feature film.”

She may not use a camcorder this time.

*Story by Cameron French, Learner, Writing Workshops / Photo by Yiqing Wang, Graduate, Certificate in Photography Studies*

# FINANCIAL MATHEMATICS MODELING

This certificate program is intended to provide technically trained professionals with an understanding of how to determine the value of financial derivatives and complex investments, and how to assess and analyze, through modeling frameworks, the associated benefits and risks of these instruments. Participants will attain a mastery of financial mathematics, especially in the areas of stochastic processes and probability, in statistics, and in computation, together with an understanding of the highly complex operations of financial markets.

For detailed certificate and program information, please visit [ryerson.ca/ce/financialmath](http://ryerson.ca/ce/financialmath).

## Admission Criteria

It is recommended that applicants have the following:

Mature student status and evidence of university level coursework in mathematics, economics, and/or finance, or equivalent (to be determined by the academic coordinator)

OR

Mature student status and other relevant qualifications or relevant industry experience (to be determined by the academic coordinator)

## Admission Interview/Placement Assessment

An interview/placement assessment is required for this program. Contact Anne-Marie Brinsmead (Program Director, Engineering, Architecture, and Science) at [azbrinsm@ryerson.ca](mailto:azbrinsm@ryerson.ca).

## Certificate Requirements

The successful completion of six courses, with a cumulative grade point average of 1.67 or higher, is required for the certificate.

## Recommended Sequence

Students are advised to take the courses in the following sequence:

- CFIN 300
- CCPS 393
- CFIN 501
- CMTH 304
- CMTH 500
- CMTH 600
- CMTH 700
- CMTH 800

## Required Courses

- CMTH 600 Mathematics: Computational Methods In Mathematics
- CMTH 700 Mathematics: Financial Mathematics I
- CMTH 800 Mathematics: Financial Mathematics II

## Electives (select three)\*

- CCPS 393 Computer Science: Introduction to C and UNIX
- CFIN 300 Finance: Managerial Finance I
- CFIN 501 Finance: Investment Analysis
- CMTH 304 Mathematics: Probability and Statistics I
- CMTH 500 Mathematics: Introduction to Stochastic Processes

\* The electives associated with this certificate program are divided into groups, based on the participant's area of expertise. The academic coordinator for the program will determine the grouping that applies to each participant, designed to strengthen his or her financial mathematics modeling competencies in other areas. A group of three (3) electives selected from the full list of elective courses may be substituted for the suggested elective groupings, at the discretion of the academic coordinator.

## Suggested Elective Groupings

**Mathematical Grouping (for participants with mathematical background):** CCPS 393, CFIN 300, CFIN 501

**Computational or Engineering Grouping (for participants with computational or engineering background):** CFIN 300, CFIN 501, CMTH 500

**Financial Grouping (for participants with financial background):** CCPS 393, CMTH 304, CMTH 500

# FINANCIAL PLANNING

This advanced certificate is designed to build on your background in accounting, finance, or management and may lead you to a professional career as a financial planner.

Successful completion of the courses in this certificate will allow you to write the two national examinations that lead to the two certifications: FPSC Level 1 Certification and the Certified Financial Planner (CFP®) designation, both awarded by the Financial Planning Standards Council (FPSC). For details about these certifications, check their website at [fpsc.ca](http://fpsc.ca).

For detailed certificate and program information, please visit [ryerson.ca/ce/financialplanning](http://ryerson.ca/ce/financialplanning).

**Academic Coordinator:** Dr. Allen Goss, [alg@ryerson.ca](mailto:alg@ryerson.ca)

## Admission Criteria

Eligible applicants must have the following:

Certificate in Accounting – Finance, or an undergraduate degree, or a three-year college diploma, as well as all of the following courses or equivalents.

- CACC 414 Accounting: Intermediate Accounting I
- CECN 104 Economics: Introductory Microeconomics
- CECN 204 Economics: Introductory Macroeconomics
- CFIN 300 Finance: Managerial Finance I
- CFIN 401 Finance: Managerial Finance II
- CLAW 122 Law: Business Law
- CQMS 102 Quantitative Methods: Business Statistics I
- CQMS 202 Quantitative Methods: Business Statistics II

## Admission Application

Students seeking admission to this program are required to complete an application for pre-approval and submit it to the academic coordinator. To obtain an application visit [ryerson.ca/ce](http://ryerson.ca/ce) and click on Forms and Documents (then the program under Program Pre-Approval Forms), or call 416.979.5035. The completed application, together with transcripts, may be presented to the academic coordinator during the Open House, or mailed to the address on the form.

## Certificate Requirements

The successful completion of six courses, with a cumulative grade point average of 1.67 or higher, is required for the certificate.

## Required Courses

- CACC 522 Accounting: Taxation for Managers and Financial Planners
- CFIN 501 Finance: Investment Analysis
- CFIN 502 Finance: Personal Financial Planning
- CFIN 512 Finance: Risk Management and Insurance
- CFIN 612 Finance: Retirement and Estate Planning
- CFIN 812 Finance: Advanced Personal Financial Planning



# FOOD SECURITY

*NOTE: This certificate program may be completed entirely at a distance. Visit the distance education website at [ryerson.ca/ce/de](http://ryerson.ca/ce/de) for further information.*

This certificate focuses on how to meet the challenge of creating sustainable food systems based on social justice and democratic decision-making that will ensure people's right to food. As such, the program serves anyone with a keen passion in food issues, environmental sustainability, human rights, alleviation of food insecurity, food-related health and education issues, and food policy. Students will go on to work in civil society organizations and public sector agencies in Canada and worldwide addressing food issues and also engaging in the private sector to initiate its transformation to a more equitable and sustainable system of production, processing, and marketing.

For detailed certificate and program information, please visit [ryerson.ca/ce/foodsecurity](http://ryerson.ca/ce/foodsecurity).

**Academic Coordinator:** Reg Noble, [food@ryerson.ca](mailto:food@ryerson.ca)

## Admission Criteria

It is recommended that applicants have the following:

Undergraduate degree in any field, or approval of the academic coordinator and five years of professional experience in a field relevant to food security work, or approval of the academic coordinator and three years' Baccalaureate study with a clear academic standing (at least a C average or GPA of 1.67).

## Admission Assessment

If you wish to apply to register for the Certificate in Food Security, you must first contact the Academic Coordinator, Reg Noble, who will assess whether you are eligible and answer any questions you might have about the program. If you're interested in taking individual courses, Ryerson University's general eligibility rules apply.

## Certificate Requirements

The successful completion of six courses, with a cumulative grade point average of 1.67 or higher, is required for the certificate.

## Required Courses

- CFNY 403 Food Security: Food Security Concepts and Principles
- CFNY 404 Food Security: Food Policy and Programs for Food Security
- CFNY 405 Food Security: Applied Research Methods and Evaluation

## Electives (select three)

Students may only select one of CFND 401 or CSOC 808.

Students may only select one of CFNF 100 or CVFS 401.

- CFND 401 Foods: Social and Cultural Dimensions of Food
- CFNF 100 Family Studies: Families and Health
- CFNN 111 Nutrition: Introduction to Nutrition
- CFNY 400 Food Security: Selected Topics in Food Security
- CFNY 407 Food Security: Community Development and Food Security
- CFNY 408 Food Security: Urban Food Security
- CFNY 409 Food Security: Gender and Food Security
- CFNY 510 Food Security: Indigenous Food Systems in Canada
- CINT 912 Interdisciplinary Studies: Community Development: International Field Experience
- CSOC 808 Sociology: Sociology of Food and Eating
- CVFN 410 Food Security: Understanding Urban Agriculture
- CVFN 411 Food Security: Dimensions of Urban Agriculture
- CVFN 412 Food Security: Urban Agriculture Types
- CVFN 413 Food Security: Urban Agriculture Policy-Making
- CVFS 401 Family Supports: Contemporary Family Issues

*Note: Undergraduate students who have completed FNP 250 may apply for a course substitution towards CFNY 404. CFND 401 and CFNF 100 are only available in the classroom to degree program and special students. For scheduling information, contact the Ryerson School of Nutrition.*

## Note to registered certificate program students

### Electives

CFNP 400 and CFNR 400 deleted.

# PROFICIENCY IN FRENCH

This certificate program is designed to provide proficiency in oral and written French. The program offers opportunities to increase professional qualifications, prepare for travel, and become a more informed citizen in a bilingual nation. Ten levels of language courses, along with a range of advanced and specialized courses, are offered.

For detailed certificate and program information, please visit [ryerson.ca/ce/french](http://ryerson.ca/ce/french).

**Academic Coordinator:** Dr. Mireille Truong, [truongm@ryerson.ca](mailto:truongm@ryerson.ca)

## Admission Criteria

It is recommended that applicants have the following:

Completion of Introductory French I (CFRE 101) with a minimum grade of C+, or admission by placement assessment and interview.

## Certificate Requirements

The successful completion of six single-term credit courses, with a cumulative grade point average of 1.67 or higher, is required for the certificate.

## Advanced Placement

If the student completes four courses at a level higher than CFRE 401, the successful completion of four single-term credit courses is required for the certificate. All four courses must be at the advanced level (CFRE 402 or higher).

## Recommended Sequence

Students are advised to take the courses in a specific sequence; refer to Recommended Sequence for French (CFRE) Courses at [ryerson.ca/ce/french](http://ryerson.ca/ce/french).

## Required Courses (except for Advanced Placement)

- CFRE 201 French: Introductory French II
- CFRE 301 French: Intermediate French I
- CFRE 401 French: Intermediate French II
- CFRE 501 French: Speaking and Writing French I

## Advanced Level Electives (select two)

- CFRE 402 French: French Conversation and Pronunciation
- CFRE 502 French: Communication and Business French
- CFRE 505 French: French Language and Culture
- CFRE 507 French: English-French Translation I
- CFRE 508 French: Intro to 20th C French Literature I
- CFRE 509 French: Franco-Canadian Literature I
- CFRE 510 French: Effective Writing
- CFRE 515 French: Introduction to Business French
- CFRE 601 French: Speaking and Writing French II
- CFRE 602 French: Business French in Practice
- CFRE 605 French: Francophone Language and Culture
- CFRE 607 French: English-French Translation II
- CFRE 608 French: Intro to 20th C French Literature II
- CFRE 609 French: Franco-Canadian Literature II
- CFRE 610 French: Cultural Context of Writing
- CFRE 701 French: French for Today
- CFRE 704 French: Intro to Franco-Canadian Culture I
- CFRE 707 French: Introduction to French-English Translation
- CFRE 801 French: French and New Media
- CFRE 803 French: French Theatre: 20th C and Contemporary
- CFRE 804 French: Intro to Franco-Canadian Culture II
- CFRE 903 French: The Francophone Short Story



# FUNDRAISING MANAGEMENT

*NOTE: This certificate program may be completed entirely at a distance. Visit the distance education website at [ryerson.ca/ce/de](http://ryerson.ca/ce/de) for further information.*

This certificate program has been developed to provide students with a sound understanding of the nonprofit and voluntary sector and the role that fundraising can play in support of organizations in this sector. Students will achieve the following:

- increase their understanding and skills in charitable sector fundraising management
- develop and implement a wide range of strategies and tactics for a successful and ethical operation of a fundraising program

This program has been developed to prepare aspiring fundraising professionals for career entry, to help managers in charitable organizations expand their fundraising skills, and to provide growth and renewal opportunities for experienced professionals.

For detailed certificate and program information, please visit [ryerson.ca/ce/fundraising](http://ryerson.ca/ce/fundraising).

**Academic Coordinator:** Cathy Mann, [cmann@ryerson.ca](mailto:cmann@ryerson.ca)

## Admission Criteria

It is recommended that applicants have the following:

OSSD with six Grade 12 U or M credits, or equivalent, or mature student status.

## Certificate Requirements

The successful completion of six single-term courses, with a cumulative grade point average of 1.67 or higher, is required for the certificate.

## Recommended Sequence

New students are encouraged to begin with CINT 916.

## Required Courses

- CINF 912 Nonprofit: Marketing for Nonprofit Organizations
- CINT 916 Interdisciplinary Studies: Introduction to Fundraising
- CVFM 201 Fundraising Management: Operations of Fundraising
- CVFM 202 Fundraising Management: Donor Centered Fundraising

## Electives (select two)

- CVFM 203 Fundraising Management: Fundraising Campaigns
- CVFM 302 Fundraising Management: Entrepreneurial Fundraising
- CVFM 303 Fundraising Management: Annual Giving Programs





Anita Dundys,  
Graduate, Certificate in Fundraising Management

*“We networked with each other, we shared information with each other, and we built contacts.”*

## INTEREST MEETS ENGAGEMENT

“The Chang School definitely opened doors to networking opportunities and connections. There are some amazing teachers and they’re incredibly supportive and willing to open doors and connect you to other people in the sector. The enthusiasm of the students helped motivate me and keep me focused. We networked with each other, we shared information with each other, and we built contacts. It also helped me make connections to further my career. It landed me my first job in fundraising before I even graduated from the program. Being enrolled in the program showed that I was serious about making the transition, and that I was dedicated to the sector. Now, every year I go into one of the classes to help inform and maybe inspire the next generation of fundraisers.”

### TEACHING STAFF WHO ARE THINKERS AND PRACTITIONERS

An expert teaching staff is vital to The Chang School’s ability to offer the highest calibre continuing education. These experienced professionals are industry experts and academic leaders who are passionate about their work. Our teaching staff combines theoretical knowledge with practical, on-the-job experience – and they pass that experience on to their students.

A teaching team of **900+** hired to teach for The Chang School each year

**88%** of our teaching staff instruct courses directly related to their primary occupations

### A COMMUNITY OF MOTIVATED LEARNERS

Like you, Chang School learners are motivated to succeed. Members of this large, diverse group draw on their energy, talents, and previous education and work experience to reach their academic, personal, and professional goals.

More than  
**60%**  
currently  
employed full-  
time

Over **60%**  
hold an  
undergraduate  
or postgraduate  
degree

**94%** would  
choose The  
Chang School  
again

# AGING AND GERONTOLOGY

## Formerly: Gerontology

*NOTE: This certificate program may be completed entirely at a distance. Visit the distance education website at [ryerson.ca/ce/de](http://ryerson.ca/ce/de) for further information.*

The Certificate in Gerontology is designed for professionals working with seniors, such as health and medical personnel, nutritionists, occupational therapists, social workers, family counsellors, recreation specialists, community workers, capacity assessors, administrators, urban planners, designers, personnel officers, volunteer workers, and anyone who wishes to learn about the field of aging.

Students enrolled in the Certificate in Aging and Gerontology will be:

- empowered with practical knowledge and understanding of the unique needs, opportunities, and challenges of an aging population across diverse sectors
- equipped with the skills and opportunities to respond effectively to the needs of an aging population, across diverse sectors, using creativity and innovation, critical thinking, and problem solving
- mobilized to use their knowledge of theory, methods, and substantive content in gerontology for real life applications including practice and policy change

For detailed certificate and program information, please visit [ryerson.ca/ce/gerontology](http://ryerson.ca/ce/gerontology).

### Admission Criteria

It is recommended that applicants have the following:

OSSD with six Grade 12 U or M credits, or equivalent, or mature student status is required.

### Certificate Requirements

The successful completion of six single-term courses or their equivalent, with a cumulative grade point average of 1.67 or higher, is required for certificate completion.

### Required Courses

- CINT 901 Interdisciplinary Studies: Gerontology: Critical Issues and Future Trends
- CVGE 142 Gerontology: Aging: Individual and Soc. Aspects
- CVGE 143 Gerontology: Aging: Ethical and Legal Consid.
- CVGE 205 Gerontology: Evid. for Practice and Policy

### Electives (select two)

- CHSM 307 Health Services Management: Principles of Long Term Care Service Del.
- CINT 555 Interdisciplinary Studies: Special Topics in Interdisciplinary Studies
- CINT 900 Interdisciplinary Studies: Program Planning and Evaluation Strategies
- CINT 904 Interdisciplinary Studies: Health Promotion and Community Development
- CINT 905 Interdisciplinary Studies: Conflict Resolution in Community Services
- CINT 907 Interdisciplinary Studies: Team Work for Community Services
- CVGE 144 Gerontology: Aging and Technology
- CVGE 145 Gerontology: Practicum Project Course
- CVIN 150 Interdisciplinary Studies: Advancing the Patient Experience
- CVNU 360 Nursing: Advanced Leadership and Management

### Note to registered certificate program students

Effective Fall 2017, the Certificate in Gerontology has been revised to Aging and Gerontology. Students who formally registered in the certificate prior to July 2, 2017, must complete the program requirements in effect at the time they registered.





**Meghan McArthur,**  
Graduate, Certificate in Gerontology

*“I have gained a very strong support system at The Chang School and I honestly do not believe I could have obtained the same continual help from another school.”*

## INSTRUCTION MEETS EXPERTISE

“Having graduated from the Spanning the Gaps program at The Chang School, I knew that Ryerson was the right institution where I could continue my education. I have gained a very strong support system at The Chang School and I honestly do not believe I could have obtained the same continual help from another school.”

Meghan’s path to successfully completing the Certificate in Gerontology in 2016 and a BAsC degree in Nutrition and Food in the spring of 2017 has not been without its challenges. In her first year of her undergrad, Meghan recognized a void in the discussion about the future health needs of aging Canadians and that having a minor in gerontology would be a huge asset in today’s job market. The certificate program was offered online and she quickly recognized that the courses gave her a deeper sense of the unique needs of older adults.

One month after enrolling in her first gerontology course, Meghan and her husband found out she was pregnant with their first child. Elliott was born one month before three of her distance education courses ended. The instructors were supportive, encouraging, and accommodating, providing her with alternative arrangements so that she would not fall behind. The three courses were successfully completed while Elliott was under a month old.

The online experience has been overwhelmingly positive for Meghan. The weekly deadlines, discussion boards, and the sense of community between a supportive staff and classmates have helped her with time management and long-term planning. The positive experience with post-secondary education has allowed Meghan to not only successfully complete her academic goals, but she is also now the proud founder and CEO of an online nutrition counselling business called Truthful Foods: Life Course Nutrition Counselling.

*Story by Anna Rumin, Learner, Writing Workshops*

# GLOBAL MANAGEMENT STUDIES

This program is designed for individuals who want to build on their existing cultural knowledge, language advantages, or Canadian business experience to deal effectively with globalization and international business issues. It is a unique experience: a combination of excellent university credit courses to select from and an individual single-term Practicum under the guidance of the academic coordinator.

**Academic Coordinator:** Michael Manjuris, manjuris@ryerson.ca

## Admission Criteria

It is recommended that applicants have the following:

OSSD with six Grade 12 U or M credits, or equivalent, or mature student status. Eligible applicants must also have completed the following courses or equivalents:

- CGMS 200 Global Management: Introduction to Global Management
- CGMS 401 Global Management: Operations Management
- CMKT 100 Marketing: Principles of Marketing

## Certificate Requirements

The successful completion of six courses, including a single-term Practicum, with a cumulative grade point average of 1.67 or higher, is required for the certificate.

## Required Courses

- CGMS 522 Global Management: International Marketing
- CGMS 723 Global Management: International Trade
- CGMS 724 Global Management: Management of International Enterprise
- CZIB 100 International Business: Practicum in International Business

## Electives (select two)

- CFIN 621 Finance: International Finance
- CGMS 450 Global Management: Project Management
- CGMS 601 Global Management: International Economics
- CGMS 690 Global Management: The North American Business Environment
- CGMS 691 Global Management: The Asian Business Environment
- CGMS 692 Global Management: The European Business Environment
- CGMS 695 Global Management: The Middle Eastern Business Environment
- CGMS 802 Global Management: Ethics and Regulation of Int'l Bus
- CGMS 805 Global Management: Manufacturing Management
- CLAW 724 International Business Law: Legal Aspects of International Business

## Professional Development

You can receive an acknowledgement of professional achievement once you have successfully completed three courses as follows:

**Professional Development Award: Entering Foreign Markets** requires completion of CGMS 522, CGMS 723, and CGMS 724.

Refer to page 128 for more information.



# GRAPHIC COMMUNICATIONS

Graphic communications is one of the most dynamic and exciting industries in Canada today. The preparation of layouts, files, proofs, and finished jobs in the printing industry requires the use of advanced hardware, software, and technology. Knowledgeable and skilled professionals in the field are rewarded with challenging opportunities.

This certificate is of particular interest to individuals who wish to enhance their ability to advance professionally and to those seeking the necessary knowledge and skills to make a career change into the graphic communications industry. Students may enrol directly into entry-level courses. No interview or portfolio is required.

## Admission Criteria

It is recommended that applicants have the following:

OSSD with six Grade 12 U or M credits, with minimum average of 60 percent, or equivalent, or mature student status with relevant professional experience.

## Certificate Requirements

The successful completion of six courses, with a cumulative grade point average of 1.67 or higher, is required for the certificate.

## Required Courses

- CGCM 110 Graphic Communications: Introduction to Graphic Communications
- CGCM 120 Graphic Communications: Graphic Communications Processes 1
- CGCM 130 Graphic Communications: Design and Layout

## Electives (select three)

- CGCM 111 Graphic Communications: Graphic Communication Technologies
- CGCM 121 Graphic Communications: Graphic Communications Processes 2
- CGCM 210 Graphic Communications: Consumer Packaging
- CGCM 230 Graphic Communications: Typography
- CGCM 250 Graphic Communications: Binding and Finishing
- CGCM 720 Graphic Communications: Magazine Production and Publishing
- CGCM 738 Graphic Communications: Photoshopped! The Art of Image Retouching
- CGCM 740 Graphic Communications: Accessibility for Graphic Communications

## Advanced Standing

Students who successfully complete the Certificate in Graphic Communications, including the elective courses CGCM 111 and CGCM 121; one single-term Liberal Studies course from Table A (see the Ryerson Undergraduate Program Calendar at [ryerson.ca/calendar](http://ryerson.ca/calendar) for more information); and the three courses CMKT 100, CGMS 200, and CCMN 279, may be considered, subject to an interview and normal program admission criteria and procedures, for direct entry into the second year of the Graphic Communications Management degree program.

## Note to registered certificate program students

### *Electives*

- CGRA 116 and CGRA 230 deleted.
- CGCM 738 added.

# HEALTH INFORMATICS

*NOTE: This certificate program may be completed entirely at a distance. Visit the distance education website at [ryerson.ca/ce/de](http://ryerson.ca/ce/de) for further information.*

The demand for skilled workers in the field of Health Informatics is growing rapidly in response to the need to deliver less expensive and higher quality healthcare. Designed for Canadian and internationally educated professionals who have a background in health or information technology, the program allows you to choose courses that will give you the skills you need for this expanding field.

For detailed certificate and program information, please visit [ryerson.ca/ce/healthinformatics](http://ryerson.ca/ce/healthinformatics).

**Academic Coordinator:** Pria Nippak, [pnippak@ryerson.ca](mailto:pnippak@ryerson.ca)

## Admission Criteria

Eligible applicants must have the following:

OSSD with six Grade 12 U or M credits, or equivalent, or mature student status, and a minimum of one year's related professional experience in the health or information technology sectors.

## Admission Application

Students seeking admission to this program are required to complete an application for pre-approval and submit it to the academic coordinator. To obtain an application visit [ryerson.ca/ce](http://ryerson.ca/ce) and click on Forms and Documents (then the program under Program Pre-Approval Forms), or call 416.979.5035. The completed application, together with transcripts, may be presented to the academic coordinator during the Open House, or mailed to the address on the form.

## Certificate Requirements

The successful completion of eight courses (four required courses and four electives), with a cumulative grade point average of 1.67 or higher, is required for the certificate.

## Required Courses

- CHIM 305 Health Information Management: Introduction to Health Informatics
- CHIM 306 Health Information Management: Healthcare Interoperability
- CHIM 307 Health Information Management: Human-Computer Interfaces in Healthcare
- CHSM 301 Health Services Management: The Healthcare Systems

## Electives (select four)

Students should select either CHIM 300 or CHSM 305, but not both, as they contain similar content.

Students should select CMHR 405 if they wish to pursue CMHR 650 as CHSM 437 does not provide a prerequisite for CMHR 650.

- CHIM 300 Health Information Management: Managing Health Information Services
- CHIM 301 Health Information Management: Healthcare Information Analysis
- CHIM 404 Health Information Management: Introduction to Health Economics

- CHIM 405 Health Information Management: Issues in Health Information Management
- CHSM 305 Health Services Management: The Management Cycle
- CHSM 306 Health Services Management: Management Leadership and Decision-Making
- CHSM 437 Health Services Management: Human Resources Management in Healthcare
- CIND 119 Industrial Engineering: Introduction to Big Data
- CIND 123 Industrial Engineering: Data Analytics: Basic Methods
- CITM 207 Information Technology Management: Computer-Enabled Problem Solving
- CITM 301 Information Technology Management: IT Infrastructure
- CITM 305 Information Technology Management: Systems Analysis and Design
- CITM 410 Information Technology Management: Business Process Design
- CITM 500 Information Technology Management: Data and Information Management
- CITM 750 Information Technology Management: IS Project Management
- CLAW 401 Law: Information Access and Privacy Protection
- CLAW 402 Law: Health Information Access and Privacy
- CMHR 405 Human Resources: Organizational Behaviour
- CMHR 650 Human Resources: Management of Change

## Note to registered certificate program students

### Electives

CITM 505 deleted.

CIND 119 and CIND 123 added.

## Professional Development

You can receive an acknowledgement of professional achievement once you have successfully completed three courses as follows:

**Professional Development Award: Health Informatics** requires completion of three courses: CHIM 305, or CHIM 306, or CHIM 307, or CLAW 402.

Refer to page 133 for more information.

# HEALTH SERVICES MANAGEMENT

*Note: Many of the courses in this program are available by distance education; visit the distance education website at [ryerson.ca/ce/de](http://ryerson.ca/ce/de) for further information.*

This certificate program provides management education for the health service industry both now and in the foreseeable future. This program provides an opportunity for current and potential healthcare managers to increase their knowledge and skills in significant aspects of health service provision. Many of the courses in the Health Services Management certificate program qualify for exemptions in the part-time degree completion program in Health Services Management (see the Ryerson Undergraduate Part-Time Degree Studies Calendar at [ryerson.ca/calendar](http://ryerson.ca/calendar) for more information).

For detailed certificate and program information, please visit [ryerson.ca/ce/hsm](http://ryerson.ca/ce/hsm).

**Academic Coordinator:** Jim Tiessen, [jhtiessen@ryerson.ca](mailto:jhtiessen@ryerson.ca)

## Admission Criteria

Eligible applicants must have the following:

OSSD with six Grade 12 U or M credits, or equivalent, or mature student status, or a Community College diploma in a related health services field.

## Admission Application

Students seeking admission to this program are required to complete an application for pre-approval and submit it to the academic coordinator. To obtain an application visit [ryerson.ca/ce](http://ryerson.ca/ce) and click on Forms and Documents (then the program under Program Pre-Approval Forms), or call 416.979.5035. The completed application, together with transcripts, may be presented to the academic coordinator during the Open House, or mailed to the address on the form.

## Certificate Requirements

The successful completion of seven courses, with a cumulative grade point average of 1.67 or higher, is required for the certificate. Up to four course credits may be granted on the basis of courses successfully completed at other institutions.

## Required Courses (select five)

- CHSM 301 Health Services Management: The Healthcare Systems
- CHSM 305 Health Services Management: The Management Cycle
- CHSM 407 Health Services Management: Healthcare Financial Management
- CHSM 437 Health Services Management: Human Resources Management in Healthcare
- CLAW 326 Law: Law for Health Managers

## Electives (select two)

- CACC 100 Accounting: Introductory Financial Accounting
- CCMN 279 Communication: Introduction to Professional Communication
- CHIM 300 Health Information Management: Managing Health Information Services
- CHIM 301 Health Information Management: Healthcare Information Analysis
- CHIM 305 Health Information Management: Introduction to Health Informatics
- CHIM 404 Health Information Management: Introduction to Health Economics
- CHIM 408 Health Information Management: Statistics for Health Services Managers
- CHSM 306 Health Services Management: Management Leadership and Decision-Making
- CHSM 307 Health Services Management: Principles of Long Term Care Service Del.
- CHSM 308 Health Services Management: Project Management - Long Term Care
- CHSM 309 Health Services Management: Trends in Long Term Care Service Delivery
- CHSM 310 Health Services Management: Institutional Structure
- CHSM 330 Health Services Management: Managerial Epidemiology for Healthcare
- CHSM 408 Health Services Management: Program Planning and Evaluation
- CHSM 417 Health Services Management: Research Methodology

## Note to registered certificate program students

### Required Courses

CHIM 403 deleted.

## Professional Development

You can receive an acknowledgement of professional achievement once you have successfully completed three courses as follows:

**Professional Development Award: Health Services Management** requires completion of CHSM 305, CHSM 306, and CHSM 437.

Refer to page 134 for more information.

# HEALTH STUDIES

*NOTE: This certificate program may be completed entirely at a distance. Visit the distance education website at [ryerson.ca/ce/de](http://ryerson.ca/ce/de) for further information.*

The Certificate in Health Studies is comprised of specially selected courses from other health-related Chang School certificate programs, such as Health Informatics, Health Services Management, Ethics, Psychology, and Aging and Gerontology. It provides a diverse set of courses that can fill gaps in your knowledge and skill set. If you are looking for depth in a particular area of study, you may instead choose to take the appropriate other health-related certificate. The Health Studies certificate will provide flexibility to choose courses that meet your professional development needs while allowing the opportunity to earn a certificate.

Through five elective courses in specialized streams of Health Informatics, Health Services Management, Health Ethics, Gerontology, and Psychology, learners are free to choose their own selection to equip them with specific knowledge pertinent to their personal goals or professional interests.

For detailed certificate and program information, please visit [ryerson.ca/ce/healthstudies](http://ryerson.ca/ce/healthstudies).

**Academic Coordinator:** Pria Nippak, [pnippak@ryerson.ca](mailto:pnippak@ryerson.ca)

## Admission Criteria

It is recommended that applicants have the following:

OSSD with six OAC credits or Grade 12 U or M credits, or equivalent, or mature student status. Completion of a related professional development award will qualify students for entry into the certificate.

## Certificate Requirements

The successful completion of six courses, with a cumulative grade point average of 1.67 or higher, is required for the certificate.

## Required Course

- CHSM 301 Health Services Management: The Healthcare Systems

## Electives (select five)

Students select a total of five electives from one or more of the five streams.

### *Open to all streams*

Students may only select one of CCMN 279 or CCMN 314.

- CCMN 279 Communication: Introduction to Professional Communication
- CCMN 314 Communication: Professional Presentations

### *Gerontology Stream*

- CINT 904 Interdisciplinary Studies: Health Promotion and Community Development
- CVGE 140 Gerontology: Aging and the Individual
- CVGE 141 Gerontology: Aging and Society

### *Health Data Analytics Stream*

- CHIM 301 Health Information Management: Healthcare Information Analysis
- CHIM 408 Health Information Management: Statistics for Health Services Managers

### *Health Ethics Stream*

Students may only select one of CPHL 302 or CPHL 509.

- CPHL 302 Philosophy: Ethics and Health Care
- CPHL 444 Philosophy: Ethics in Health Services Management
- CPHL 509 Philosophy: Bioethics
- CPHL 602 Philosophy: Health Policy: Ethics and Justice

### *Health Informatics Stream*

- CHIM 305 Health Information Management: Introduction to Health Informatics
- CHIM 306 Health Information Management: Healthcare Interoperability
- CHIM 307 Health Information Management: Human-Computer Interfaces in Healthcare
- CLAW 402 Law: Health Information Access and Privacy

### *Health Services Management Stream*

- CHSM 305 Health Services Management: The Management Cycle
- CHSM 306 Health Services Management: Management Leadership and Decision-Making
- CHSM 330 Health Services Management: Managerial Epidemiology for Healthcare
- CHSM 437 Health Services Management: Human Resources Management in Healthcare
- CTEC 210 Technology Studies: Fundamentals of Project Management

### *Psychology Stream*

Students may only select one of CPSY 102 or CPSY 105.

- CPSY 102 Psychology: Introduction to Psychology I
- CPSY 105 Psychology: Perspectives in Psychology
- CPSY 325 Psychology: Psychological Disorders
- CPSY 605 Psychology: Psychology of Health and Health Care
- CPSY 607 Psychology: Drugs and Human Behaviour
- CPSY 802 Psychology: Death, Dying and Bereavement
- CPSY 805 Psychology: Adjustment, Stress and Coping
- CPSY 808 Psychology: Community Psychology

## Note to registered certificate program students

### *Electives – Health Services Management Stream*

CKPM 202 deleted.

CTEC 210 added.

## Professional Development

You can receive an acknowledgement of professional achievement once you have successfully completed three courses as follows:

**Professional Development Award: Health Data Analytics** requires completion of three courses: CHIM 301, CHIM 408, and CHSM 301.

**Professional Development Award: Health Ethics** requires completion of three courses: (CPHL 302 or CPHL 509), or CPHL 334, or CPHL 444, or CPHL 602.

**Professional Development Award: Health Informatics** requires completion of three courses: CHIT 100, or CHIT 201, or CHIT 300, or CLAW 402.

**Professional Development Award: Health Services Management** requires completion of CHSM 305, CHSM 306, and CHSM 437.

Refer to pages 132-134 for more information.



# HUMAN RESOURCES MANAGEMENT

*Note: Many of the courses in this program are available by distance education; visit the distance education website at [ryerson.ca/ce/de](http://ryerson.ca/ce/de) for further information.*

This certificate program provides comprehensive education in current human resources management techniques. It is ideal for human resources management professionals who wish to expand or update their skills, and for those seeking employment in the human resources field.

Many of the courses in the Human Resources Management certificate program may qualify for exemptions in the Certified Human Resources Professional (CHRP) designation offered by the Human Resources Professionals Association (HRPA) ([hrpa.ca](http://hrpa.ca)).

For detailed certificate and program information, please visit [ryerson.ca/ce/hrmanagement](http://ryerson.ca/ce/hrmanagement).

## Admission Criteria

It is recommended that applicants have the following:

OSSD with six Grade 12 U or M credits, or equivalent, or mature student status, with some experience in business.

## Certificate Requirements

The successful completion of six courses, with a cumulative grade point average of 1.67 or higher, is required for the certificate. Up to three course credits may be granted on the basis of courses successfully completed at other institutions.

## Required Courses

- CMHR 405 Human Resources: Organizational Behaviour
- CMHR 523 Human Resources: Human Resources Management

## Electives (select four)

- CLAW 529 Law: Employment and Labour Law
- CMHR 505 Human Resources: Organizational Behaviour II
- CMHR 522 Human Resources: Union Management Relations
- CMHR 600 Human Resources: Diversity and Inclusion in the Workplace
- CMHR 623 Human Resources: Recruitment and Selection
- CMHR 671 Human Resources: Human Resources Information Systems
- CMHR 711 Human Resources: Occupational Health and Safety
- CMHR 733 Human Resources: Training and Development
- CMHR 749 Human Resources: Compensation Management
- CMHR 849 Human Resources: Human Resources Planning

## Note to registered certificate program students

### Electives

CMHR 670 deleted.





# IMAGE ARTS (WITH SPECIALIZATIONS IN FILM STUDIES OR PHOTOGRAPHY STUDIES)

This certificate is designed to lead to careers in the film, photography, communications, and cultural industries. Graduates should be capable of performing responsibly in these industries as professionals in both creative and managerial positions, and in undertakings ranging from the highly commercial to the artistic and experimental. The curriculum will also provide students with the necessary grounding to move on to advanced study in a variety of media-related academic and artistic disciplines.

This program provides a general background in design, art history, and cultural studies, along with professional specialization in the two areas of Film and Photography Studies. There is a strong link between theory and practice in each of these options.

Successful completion of the certificate in Film Studies or Photography Studies will make a student eligible to apply for admission to the second year of the related Image Arts degree program, subject to space availability and competition. These students will also be required to take the appropriate Liberal Studies courses.

For detailed certificate and program information, please visit [ryerson.ca/ce/imagearts](http://ryerson.ca/ce/imagearts).

**Film Studies Academic Coordinator:** James Warrack, [jwarrack@ryerson.ca](mailto:jwarrack@ryerson.ca)

**Photography Studies Academic Coordinator:** Dennis Miles, [dmiles@ryerson.ca](mailto:dmiles@ryerson.ca)

## Admission Criteria

It is recommended that applicants have the following:

OSSD with six Grade 12 U or M credits (including English), or equivalent, with a minimum average of 60 percent, or mature student status with relevant professional experience.

## Certificate Requirements

The successful completion of eight single-term (or equivalent) courses is required for the certificate, as listed in each option. Students must achieve a cumulative grade point average of 1.67 or higher to graduate.

## Equipment/Facilities Use

Please note that equipment and facilities use outside of class time will not be provided. Extra time may be purchased.

## Required Courses

- CMPC 101 Combined Media: Visual Studies I
- CMPC 103 Combined Media: Art and the Classical Tradition
- CMPC 201 Combined Media: Concepts and Theories
- CMPC 203 Combined Media: Art in the Modern World

This certificate offers specializations in either Film Studies or Photography Studies. Students must fulfill the requirements of one of these two areas as listed below.

## Specialization in Film Studies

- CDMP 129 Film Studies: Motion Picture Production I
- CMPF 107 Film Studies: Film Tools and Applications I
- CMPF 290 Film Studies: Introduction to Film Studies

## Specialization in Photography

- CDFP 328 Photography: Photography Production I
- CDFP 329 Photography: Photography Production II
- CDFP 333 Photography: Photography and Digital Imaging
- CDFP 358 Photography: Photography and the Web

## Note to registered certificate program students

Effective Fall 2017, the Specialization in Film Studies has been revised. Students who formally registered in the certificate prior to July 2, 2017, must complete the program requirements in effect at the time they registered.

### *Specialization in Film Studies*

CDMP 117 and CDMP 118 deleted.

CMPF 107 and CMPF 290 added.

# INFORMATION SYSTEMS MANAGEMENT

*Note: Many of the courses in this program are available by distance education; visit the distance education website at [ryerson.ca/ce/de](http://ryerson.ca/ce/de) for further information.*

Virtually every type of business today relies on information technology. Whether banking online, ordering a pizza, monitoring patients in a hospital, or publishing a newspaper, organizations must develop systems that serve their customers and help them succeed. Computers, the Internet, wireless communications, databases – all are forms of information technology which are used to collect, analyze, and share information. Information systems management examines how this technology can be used effectively in an ever-changing business context. Courses focus on how to develop and manage information systems to meet the strategic needs of business and government. This certificate stands alone as an introduction to the IT management field, but it also provides a smooth transition either to another more specialized certificate or to the Business Technology Management degree program. The number of eligible courses that can be used towards the degree will depend on the curriculum in effect at the time of admission to the degree program.

For detailed certificate and program information, please contact The Chang School at 416.979.5035, attend a Program Open House, or visit [ryerson.ca/ce/itm](http://ryerson.ca/ce/itm).

## Admission Criteria

It is recommended that applicants have the following:

OSSD with six Grade 12 U or M credits, or equivalent, or mature student status.

## Certificate Requirements

The successful completion of six single-term courses, with a cumulative grade point average of 1.67 or higher, is required for the certificate.

## Required Courses

Students may only select one of CITM 100 or CITM 102.

- CITM 100 Information Technology Management: Foundations of Information Systems
- CITM 102 Information Technology Management: Business Information Systems I
- CITM 207 Information Technology Management: Computer-Enabled Problem Solving
- CITM 305 Information Technology Management: Systems Analysis and Design
- CITM 410 Information Technology Management: Business Process Design

## Electives (select two)

- CITM 200 Information Technology Management: Fundamentals of Programming
- CITM 301 Information Technology Management: IT Infrastructure
- CITM 350 Information Technology Management: Concepts of e-Business
- CITM 500 Information Technology Management: Data and Information Management
- CITM 750 Information Technology Management: IS Project Management

## Note to registered certificate program students

### Electives

CITM 407 deleted.

# FUNDAMENTALS OF INTERIOR DESIGN

Interior designers work in a dynamic, imaginative, and complex industry combining technological knowledge with artistic vision. This certificate is intended for individuals interested in the fundamentals of interior design:

- those who are considering interior design as a possible career and are prepared to enter a full-time interior design program upon completion of the certificate
- those who have a general interest in interior design

Students should be aware that professional interior designers require membership in the Association of Registered Interior Designers of Ontario ([arido.ca](http://arido.ca)). Membership is extended only to graduates of degree and diploma programs in recognized schools of interior design who have several years' experience and who successfully complete the Association's qualifying examinations.

## Admission Criteria

It is recommended that applicants have the following:

OSSD with six Grade 12 U or M credits (including English and Mathematics), with a minimum average of 60 percent, or equivalent, or mature student status.

## Certificate Requirements

The successful completion of seven courses (four required courses and three electives), with a cumulative grade point average of 1.67 or higher, is required for the certificate. In determining the order of courses within the program, students should note carefully the prerequisite requirements listed with each course.

## Required Courses

- CDID 150 Interior Design: Design Theory
- CDID 151 Interior Design: Interior Design I: Drafting
- CDID 152 Interior Design: Interior Design I: Space Planning
- CIRC 112 Interior Design: Communications I

## Electives (select three)

- CDID 153 Interior Design: Interior Materials and Finishes
- CDID 155 Interior Design: Design Dynamics I: Portfolio 1
- CDID 157 Interior Design: Kitchen and Bathroom Design
- CIRC 113 Interior Design: Communications II
- CIRH 101 Interior Design: History of Design I

## Intensive Spring/Summer Program

Students have the opportunity to obtain the Certificate in Fundamentals of Interior Design in an intensive format during the Spring/Summer term. This unique fast-track program covers all four required courses plus three electives.

- CDID 999 Interior Design: Interior Design Intensive



# LANDSCAPE DESIGN

*NOTE: This certificate program may be completed entirely at a distance. Visit the distance education website at [ryerson.ca/ce/de](http://ryerson.ca/ce/de) for further information.*

Landscape Design combines the fields of art, science, and humanities. Landscape designers focus on designing and restoring sustainable public and private outdoor spaces. Their services are sought in the residential, commercial, and public sectors.

Whether you are just beginning or continuing your education in Landscape Design, this certificate offers an excellent education in the fundamental components that comprise the field of landscape design. Through course offerings, you will learn how to analyze, plan, design, manage, and sustain the built and natural environment.

Courses are offered in a combination of lectures, field trips, studios, seminars, and other interactive learning opportunities. Our distance education courses continue to be developed and are available online.

For detailed certificate and program information, please visit [ryerson.ca/ce/landscape](http://ryerson.ca/ce/landscape).

**Academic Coordinator:** Sam Benvie, [sbenvie@ryerson.ca](mailto:sbenvie@ryerson.ca)

## Admission Criteria

It is recommended that applicants have the following:

A post-secondary undergraduate education (university or college) in a relevant field of study including programs related to architecture and/or environmental sciences or mature student status with relevant work experience.

## Certificate Requirements

The successful completion of six courses, with a cumulative grade point average of 1.67 or higher, is required for the certificate.

## Required Courses

The order in which the required courses are taken should be considered carefully so as to meet the prerequisites for the desired elective courses.

- CKLA 300 Landscape Design: Landscape Design Communications and Theory
- CKLA 310 Landscape Design: Landscape Construction, Materials and Methods
- CKLA 320 Landscape Design: Plant Materials
- CKLA 330 Landscape Design: Landscape Design Studio

## Electives (select two)

- CKLA 400 Landscape Design: Ecology and Sustainable Landscapes
- CKLA 420 Landscape Design: Art and Management of Planting Design
- CKLA 440 Landscape Design: Landscape Design LANDWorksCAD PRO
- CKLA 450 Landscape Design: Landscape Restoration

## Note to registered certificate program students

### Electives

CKLA 410 and CKLA 430 deleted.

## Alternative Formats of Instruction

A number of courses in this program are available in a variety of alternative accelerated formats, beyond the typical 13-week, one evening per week class. Classes may be offered two evenings a week for six weeks; three evenings a week for four weeks; or every day for a full week. Please refer to specific course descriptions to see which formats the courses will be offered in during each term.



# LEADERSHIP IN ORGANIZATIONS

*Note: Many of the courses in this program are available by distance education; visit the distance education website at [ryerson.ca/ce/de](http://ryerson.ca/ce/de) for further information.*

Organizational leadership and management skills are critical to success in business, in the voluntary sector, community services, and any profession where you must achieve results through others. The Certificate in Leadership in Organizations will help you develop the ability to influence, motivate, and enable others to contribute towards the effectiveness and success of your organization. Upon completion of this certificate, you will be able to apply leadership knowledge and skills to any job, in any sector.

For detailed certificate and program information, please visit [ryerson.ca/ce/orgleaders](http://ryerson.ca/ce/orgleaders).

## Admission Criteria

It is recommended that applicants have the following:

OSSD with six Grade 12 U, including Grade 12 U or M credits, or equivalent, or mature student status with relevant work experience.

## Certificate Requirements

The successful completion of six courses, with a cumulative grade point average of 1.67 or higher, is required for the certificate.

## Required Courses

- CMHR 405 Human Resources: Organizational Behaviour
- CMHR 640 Human Resources: Leadership

## Electives (select four)

- CMHR 505 Human Resources: Organizational Behaviour II
- CMHR 650 Human Resources: Management of Change
- CMHR 700 Human Resources: Cross-Cultural Dimensions of Organizational Behaviour
- CMHR 721 Human Resources: Negotiation and Conflict Resolution
- CMHR 741 Human Resources: Managing Interpersonal Dynamics and Teams
- CMHR 841 Human Resources: Organization Theory and Design
- CMHR 850 Human Resources: Coaching, Facilitation and Internal Consulting

## Note to registered certificate program students

### *Electives*

CMHR 638 deleted.

# LIGHTING DESIGN

This multidisciplinary certificate is designed to provide students with the broad knowledge base and wide range of skills required by professionals in the lighting industry. Changes are taking place in the lighting industry, largely centred around increased legislative acts limiting energy budgets for new construction, retrofitting and the need for designing buildings which are environmentally responsible and ergonomically sound, and with enhanced vision for health and safety. New information is available, new technologies have been developed, new methodologies exist, and new questions are emerging as the building industry works toward an integration of architecture, engineering and resource management, and the concerns for health and safety are moved to the forefront in design.

The Certificate in Lighting Design is of particular interest to those persons who are seeking to enhance their knowledge and skill in the art and science of lighting design and who are degree graduates of one of either Architecture or Landscape Architecture, Engineering, Interior Design, or Theatre Design and Production.

Graduates of other programs such as Business, Fashion, and Radio and Television Arts, or individuals without degrees, but with a satisfactory level of education and experience in the lighting industry, may also be eligible with the approval of the academic coordinator.

For detailed certificate and program information, please visit [ryerson.ca/ce/lxdesign](http://ryerson.ca/ce/lxdesign).

## Admission Criteria

It is recommended that applicants have the following:

Undergraduate degree or mature student status with related professional experience and education.

## Course Prerequisites

Successful completion of all stated prerequisites is required for registration in a course. Students who register in a course without successful completion of the prerequisites will be required to withdraw.

## Certificate Requirements

The completion of seven courses, with a cumulative grade point average of 1.67 or higher, is required for the certificate.

## Required Courses

- CDID 501 Lighting Design: Lighting Fundamentals
- CDID 502 Lighting Design: Human Factors in Lighting
- CDID 503 Lighting Design: Introduction to Lighting Design
- CDID 504 Lighting Design: Lighting Energy Management
- CDID 550 Lighting Design: Introduction to Daylighting Design
- CDID 551 Lighting Design: Advanced Lighting Design

## Electives (select one)

- CDID 552 Lighting Design: Entertainment Lighting Design
- CDID 553 Lighting Design: Lighting Design Practicum
- CDID 554 Lighting Design: Lighting Research Practicum



# LOCAL ECONOMIC DEVELOPMENT

This certificate is designed for entry-level economic development professionals and experienced professionals looking to enhance their skills and knowledge to thrive in public and private local economic development (LED) positions. The certificate will successfully prepare graduates with the skills and competencies to address the current and emerging area of LED in the Canadian context. Graduating students may apply courses towards the educational requirements for their Ec.D. Certification.

## Admission Criteria

It is recommended that applicants have the following:

OSSD with six Grade 12 U or M credits (including English), with a minimum average of 60 percent, or equivalent; or an undergraduate degree; or a college diploma; or mature student status with a combination of relevant work and life experience.

## Required Courses

- CPLE 745 Planning: Selected Topics in Planning
- CPLE 845 Planning: Selected Topics in Planning
- CVUP 155 Planning: LED Applied Research Project
- CVUP 160 Planning: Capstone Project in LED

## Certificate Requirements

The successful completion of four courses, with a cumulative grade point average of 1.67 or higher, is required for the certificate.

# MEDIA WRITING FUNDAMENTALS

Students will receive a thorough overview of all the various forms of writing for the electronic media, including dramatic writing, commercial writing, and writing for factual programs. Practical assignments will be supported by theoretical material that provides fundamental instruction in dramatic theory and marketing theory, and will provide both a context and a critical lens through which students may view their written work.

For detailed certificate and program information, please visit [ryerson.ca/ce/rta](http://ryerson.ca/ce/rta).

## Admission Criteria

It is recommended that applicants have the following:

OSSD with six Grade 12 U or M courses, including OAC English or Grade 12 U English (ENG4U) with a minimum grade of 70 percent or higher, or mature student status.

## Admission Application

Students seeking admission to this program are required to complete an application for pre-approval and submit it to the academic coordinator. To obtain an application visit [ryerson.ca/ce](http://ryerson.ca/ce) and click on Forms and Documents (then the program under Program Pre-Approval Forms), or call 416.979.5035. The completed application, together with transcripts, may be presented to the academic coordinator during the Open House, or mailed to the address on the form.

Students not wishing to complete the Certificate in Media Writing Fundamentals may take individual courses from the certificate program for general interest and the application process is not necessary.

## Certificate Requirements

The successful completion of seven courses (two required courses plus five electives), with a cumulative grade point average of 1.67 or higher, is required for the certificate.

## Required Courses

The order in which the required courses are taken should be considered carefully so as to meet the prerequisites for the desired elective courses.

- CRTA 102 Broadcasting and Media Production: Creative Processes
- CRTA 212 Broadcasting and Media Production: Media Writing

## Electives (select five)

- CDMP 125 Film Studies: Fiction Screenwriting
- CDMP 126 Film Studies: Non-Fiction Screenwriting
- CRTA 941 Broadcasting and Media Production: Dramatic Writing
- CRTA 942 Broadcasting and Media Production: Advertising Copywriting
- CRTA 943 Broadcasting and Media Production: Comedy Writing
- CRTA 944 Broadcasting and Media Production: Writing for Animation
- CRTA 945 Broadcasting and Media Production: Writing for Factual and Reality Programs



# MENTAL HEALTH AND ADDICTIONS

This certificate program provides a comprehensive curriculum in mental health and addictions to individuals requiring knowledge in dealing with employees, clients, family members, and friends through their places of employment, volunteer activities, or personal situations. Building on a foundation of psychological concepts, the curriculum comprising degree-level courses acquaints students with the various perspectives describing and understanding mental health, mental health disorders and addictions, and interventions, including assessment, treatment, and self-help strategies within individual, group, family, and community contexts.

**Academic Coordinator:** Brian Rabinowicz, brabinow@ryerson.ca

## Admission Criteria

It is recommended that applicants have the following:

OSSD with six Grade 12 U or M credits, or equivalent, or three years of experience in business, community service, or industry.

## Certificate Requirements

The successful completion of 10 course credits, with a cumulative grade point average of 1.67 or higher, is required for the certificate.

## Required Courses

- CPSY 102 Psychology: Introduction to Psychology I
- CPSY 202 Psychology: Introduction to Psychology II
- CPSY 215 Psychology: Psychology of Addictions
- CPSY 325 Psychology: Psychological Disorders

## Electives (select a total of six courses)

### *Electives – Group A (select two or three)*

Students may only select one of CPSY 214 or CPSY 607.

- CPSY 214 Psychology: Psychopharmacology
- CPSY 324 Psychology: Biological Psychology
- CPSY 335 Psychology: Clinical Psychology
- CPSY 607 Psychology: Drugs and Human Behaviour

### *Electives – Group B (select three or four)*

- COPS 250 Psychology: Independent Study
- CPSY 300 Psychology: Psychology and Law
- CPSY 302 Psychology: Child Development
- CPSY 412 Psychology: Human Brain Circuitry
- CPSY 602 Psychology: Developmental Psychopathology
- CPSY 605 Psychology: Psychology of Health and Health Care
- CPSY 620 Psychology: Psychology of Immigration
- CPSY 621 Psychology: Psychology of Human Sexuality
- CPSY 802 Psychology: Death, Dying and Bereavement
- CPSY 805 Psychology: Adjustment, Stress and Coping
- CPSY 806 Psychology: Behaviour Modification
- CPSY 808 Psychology: Community Psychology



# MUSIC: GLOBAL AND CULTURAL CONTEXTS

The Certificate in Music: Global and Cultural Contexts explores musical creation in all of its rich diversity. Students will learn about the complexities of music from around the globe, from ancient times until the modern age. Through concrete study of the ways in which music reflects and responds to its shifting cultural, social, political, and historical environments, students will hone skills in critical thinking, analysis, and writing. The program will be well-suited to students with broad interest in the study and practice of music for personal enrichment, academic progress, or professional development.

**Academic Coordinator:** Kristin Force, [kforce@ryerson.ca](mailto:kforce@ryerson.ca)

## Admission Criteria

It is recommended that applicants have the following:

OSSD with six Grade 12 U or M credits (including English) with a minimum grade of 70 percent, or equivalent, or mature student status with relevant work experience.

## Certificate Requirements

The successful completion of six courses, with a cumulative grade point average of 1.67 or higher, is required for the certificate.

## Recommended Sequence

Students are advised to take the courses in the following sequence: CMUS 101 and/or CMUS 106; Electives – Group A (one or two selections); and Electives – Group B (three selections).

## Required Courses

Students may only select one or both of the following courses. If only one course is taken, then two selections must be made from Electives – Group A.

- CMUS 101 Music: Intro to World and Early European Music
- CMUS 106 Music: The Architecture of Music

## Electives – Group A (select one or two)

- CMUS 105 Music: Voices Without Borders: Global Chorus
- CMUS 211 Music: Music Cultures of the City
- CMUS 401 Music: Music, Religion and Spirituality
- CMUS 501 Music: Traditional Musics of the World

## Electives – Group B (select three)

- CMUS 201 Music: Introduction to Classical Music
- CMUS 303 Music: Global Guitar
- CMUS 505 Music: Popular Music and Culture
- CRTA 180 RTA: Media Studies: Music and Film
- CRTA 183 RTA: Media Studies: Rhythm, Beat and Groove
- CRTA 406 RTA: Media Studies: Chinese Instrumental Music
- CRTA 530 RTA: Media Studies: Chinese Music



# NEWS STUDIES

This certificate program is designed to provide students with a thorough understanding of how journalists gather, report, analyze, and explain what is considered “news.” It is of interest to those whose work intersects with journalists, media relations personnel, individuals interested in news and the media, and students interested in pursuing a career in communications.

For detailed certificate and program information, please visit [ryerson.ca/ce/newsstudies](http://ryerson.ca/ce/newsstudies).

## Admission Criteria

It is recommended that applicants have the following:

OSSD with six Grade 12 U or M credits, or equivalent, or mature student status.

## Certificate Requirements

The successful completion of six courses, with a cumulative grade point average of 1.67 or higher, is required for the certificate.

## Required Sequence

Students are required to take the courses in the following sequence:

- CNNS 101
- Electives (five selections)

## Required Course

- CNNS 101 News Studies: Introduction to News Studies

## Electives (select five)

- CJRN 401 Journalism: History of Journalism
- CJRN 404 Journalism: Journalism’s Best
- CJRN 412 Journalism: Documentary Survey
- CNNS 102 News Studies: Understanding Multimedia Journalism
- CNNS 344 News Studies: Making a Difference: How Journalism Matters
- CNNS 500 News Studies: Journalism and the Arts
- CNNS 502 News Studies: Journalism and the World of Business
- CNNS 505 News Studies: Health and Science Journalism
- CNNS 512 News Studies: Reporting Sports

## Note to registered certificate program students

### Electives

- CJRN 123 deleted.
- CNNS 344 added.



# NONPROFIT AND VOLUNTARY SECTOR MANAGEMENT

*NOTE: This certificate program may be completed entirely at a distance. Visit the distance education website at [ryerson.ca/ce/de](http://ryerson.ca/ce/de) for further information.*

Ryerson created this distinctive, interdisciplinary certificate program in response to a growing demand for education that focuses on the specialized needs of the nonprofit and voluntary sector. This program was the first undergraduate university certificate program in nonprofit sector management in Canada. This unique program will provide students with a strong understanding of the nonprofit and voluntary sector as well as knowledge of the tools, processes, relationships, systems, and practices that support a strong sector that includes effective and successful organizations. The certificate offers the following:

- an interdisciplinary curriculum pooling knowledge from two academic disciplines: business management and public administration
- a practical blend of theory and application taught by practitioners
- a wide range of current and relevant courses covering key areas such as marketing, financial management, advocacy, strategic planning, program evaluation, organizational management, organizational change, diversity, key issues in the sector, and international NGOs

Courses are available in a variety of formats including online distance education.

## Who Will Benefit

- directors, managers, staff, practitioners, and volunteers of nonprofit organizations who wish to enhance their skills and knowledge
- those interested in pursuing careers in the nonprofit sector
- those who are involved in the development of a nonprofit and want to ensure it has a solid foundation for success
- those in the public, institutional, and private sectors who are interested in developing relationships and partnerships with nonprofit organizations

For detailed certificate and program information, please visit [ryerson.ca/ce/nonprofit](http://ryerson.ca/ce/nonprofit).

**Academic Coordinator:** Caryl Arundel, [acononprofit@ryerson.ca](mailto:acononprofit@ryerson.ca)

## Admission Criteria

It is recommended that applicants have the following:

OSSD with six Grade 12 U or M credits, or equivalent, or mature student status.

## Certificate Requirements

The successful completion of eight single-term courses (four required courses and four electives), with a cumulative grade point average of 1.67 or higher, is required for the certificate.

## Required Courses

Students may only select one of CINP 902 or CINP 915.

- CINP 900 Nonprofit: Understanding the Nonprofit Sector
- CINP 901 Nonprofit: Developing Effective Organizations
- CINP 902 Nonprofit: Program Evaluation
- CINP 915 Nonprofit: Financial Management
- CINP 920 Nonprofit: Critical Issues in the Third Sector

## Electives (select four not previously taken in Required Courses)

- CINP 902 Nonprofit: Program Evaluation
- CINP 910 Nonprofit: Strategic Planning
- CINP 911 Nonprofit: Advocacy and Governmental Relations
- CINP 912 Nonprofit: Marketing for Nonprofit Organizations
- CINP 913 Nonprofit: Leading Through Change
- CINP 914 Nonprofit: Issues of Diversity
- CINP 915 Nonprofit: Financial Management
- CINP 916 Nonprofit: NGOs in Global Context

# ADVANCED NURSING LEADERSHIP AND MANAGEMENT

*NOTE: This certificate program may be completed entirely at a distance. Visit the distance education website at [ryerson.ca/ce/de](http://ryerson.ca/ce/de) for further information.*

This certificate program is designed to meet the needs of nurses currently employed or aspiring to be employed in leadership and management roles within a health services setting. The program builds on the foundational leadership and management content encompassed by a baccalaureate degree; provides access to courses that will focus on students' main area of leadership and/or management interest; and provides students with the opportunity to apply newly acquired knowledge to a practical leadership and/or management issue.

For detailed certificate and program information, please visit [ryerson.ca/ce/nursingleaders](http://ryerson.ca/ce/nursingleaders).

**Academic Coordinator:** Nancy Purdy, [npurdy@ryerson.ca](mailto:npurdy@ryerson.ca) or 416.979.5000, ext. 2020

## Admission Criteria

Students seeking admission to this certificate program must be Registered Nurses (RN) who are registered with the professional governance body of their jurisdiction. They must hold a Canadian undergraduate degree in Nursing (BScN) or equivalent degree.

## Admission Application

Students seeking admission to this program are required to complete an application for pre-approval and submit it to the academic coordinator before registering in their first course. Complete an application via the online eligibility form available on the Admission and Registration page of the program website at [ryerson.ca/ce/nursingleaders](http://ryerson.ca/ce/nursingleaders). An individual consultation with a program advisor is required in order to assist students in selecting both a focus for the certificate and appropriate electives. Contact the Nursing program advisors at [cenurse@ryerson.ca](mailto:cenurse@ryerson.ca) or 416.979.5000, ext.4775.

## Certificate Requirements

The successful completion of six courses, with a cumulative grade point average of 1.67 or higher, is required for the certificate.

## Recommended Sequence

Students are advised to take the courses in the following sequence:

- CVNU 360
- Electives – Group A (select one)
- Electives – Group B (select one or two)
- Electives – Group C (select one or two)
- CVNU 370

*It is highly recommended that students complete CVNU 360 as their first course. The capstone course, CVNU 370, may only be taken as the last course in the certificate. Students are encouraged to contact the Nursing program advisors in order to plan their capstone registration.*

## Required Courses

- CVNU 360 Nursing: Advanced Leadership and Management
- CVNU 370 Nursing: Change and Innovation

## Electives (select a total of four courses)

*Electives – Group A: Program Planning and Evaluation (select one)*

- CHSM 408 Health Services Management: Program Planning and Evaluation
- CINP 902 Nonprofit: Program Evaluation
- CINT 900 Interdisciplinary Studies: Program Planning and Evaluation Strategies
- CPPA 402 Politics and Public Administration: Program Planning and Evaluation

*Electives – Group B: Leadership (select one or two)*

- CINT 905 Interdisciplinary Studies: Conflict Resolution in Community Services
- CINT 907 Interdisciplinary Studies: Team Work for Community Services
- CINT 911 Interdisciplinary Studies: International Community Development
- CMHR 505 Human Resources: Organizational Behaviour II
- CMHR 741 Human Resources: Managing Interpersonal Dynamics and Teams

**Electives – Group C: Management (select one or two)**

- CHIM 300 Health Information Management: Managing Health Information Services
- CHSM 301 Health Services Management: The Healthcare Systems
- CHSM 305 Health Services Management: The Management Cycle
- CHSM 307 Health Services Management: Principles of Long Term Care Service Del.
- CHSM 437 Health Services Management: Human Resources Management in Healthcare
- CINP 915 Nonprofit: Financial Management
- CINT 920 Interdisciplinary Studies: Community Collaborations
- CKPM 203 Project Management: Planning and Scheduling
- CKPM 209 Project Management: Project Risk and Quality Management
- CLAW 326 Law: Law for Health Managers
- CMHR 650 Human Resources: Management of Change
- CMHR 721 Human Resources: Negotiation and Conflict Resolution
- CMHR 841 Human Resources: Organization Theory and Design
- CSWP 934 Social Work: Community Engagement Foundations
- CSWP 936 Social Work: Community Engagement Practices
- CTEC 210 Technology Studies: Fundamentals of Project Management
- CVNU 321 Nursing: Financial Management

**Note to registered certificate program students****Electives – Group B: Leadership**

CMHR 638 deleted.

**Electives – Group C: Management**

CKPM 202 deleted.

CTEC 210 added.



# OCCUPATIONAL HEALTH AND SAFETY

*NOTE: This certificate program may be completed entirely at a distance. Visit the distance education website at [ryerson.ca/ce/de](http://ryerson.ca/ce/de) for further information.*

This certificate program in Occupational Health and Safety was developed in cooperation with the Ryerson School of Occupational and Public Health ([ryerson.ca/sophe](http://ryerson.ca/sophe)). This unique offering is designed especially for those currently involved in the field who wish to expand their knowledge and improve their skills. The program covers a wide range of perspectives, principles, and issues in the occupational health and safety field, and is applicable to all types of industry.

For detailed certificate and program information, please visit [ryerson.ca/ce/ohs](http://ryerson.ca/ce/ohs).

## Admission Criteria

It is recommended that applicants have the following:

OSSD with six Grade 12 U or M credits, or equivalent, or mature student status.

## Certificate Requirements

The successful completion of eight courses, with a cumulative grade point average of 1.67 or higher, is required for the certificate.

## Required Courses

- CCMN 114 Communication: Short Management Reports
- COHS 208 Occupational Health: Occupational Health and Safety Law
- COHS 508 Occupational Health: Occupational Health
- COHS 608 Occupational Health: Hazard Recognition and Control
- COHS 718 Occupational Health: Systems Management I
- CVOH 217 Occupational Health: Measurement and Analysis
- CVOH 221 Occupational Health: Topics in Occupational Health and Safety

## Electives (select one)

- CMHR 405 Human Resources: Organizational Behaviour
- COHS 477 Occupational Health: Integrated Disability Management
- CPPA 101 Politics and Public Administration: Cdn Public Administration I: Institutions

*Note: Many of the courses are offered in an intensive format. See course descriptions for additional information.*

# PHOTOGRAPHY STUDIES

Photography has become an important medium of communication in industry, sales and advertising, government, education, the press, and the arts; consequently, there has been a rise in the demand for properly trained and qualified personnel to work in these fields. This certificate program addresses these needs by offering a basic professional program of study in photography for those who wish to upgrade their present level of expertise, retrain or make a career change, establish their own business, improve opportunities for advancement or job placement in photography-related fields, or prepare for entrance into the degree program at an advanced level.

The courses in the certificate program are usually equivalent to one-half or one-quarter of similar courses in the undergraduate degree program. In some cases full credit for an undergraduate degree course may be granted by completing specific certificate courses (see course descriptions). Transfer Credit students will not be considered unless they have already taken the Image History, Image Theory, and Visual Studies courses.

For detailed certificate and program information, including the Photography Studies Intensive (CDFP 999), please visit [ryerson.ca/ce/photography](http://ryerson.ca/ce/photography).

## Individual Courses

Students not wishing to complete the Certificate in Photography Studies may take individual courses from the certificate program for general interest.

## Admission Criteria

It is recommended that applicants have the following:

OSSD with six Grade 12 U or M credits (including English), with a minimum average of 60 percent, or equivalent, or mature student status with relevant professional experience.

## Advanced Standing

Mature students may be eligible on the basis of work experience in a relevant field. Applicants possessing higher qualifications will be considered for advanced standing on individual merits.

## Certificate Requirements

The successful completion of eight single-term courses, with a cumulative grade point average of 1.67 or higher, is required for the certificate.

## Equipment/Facilities Use

Please note that equipment and facilities use outside of class time will not be provided. Extra time may be purchased.

## Required Courses

- CDFP 328 Photography: Photography Production I
- CDFP 329 Photography: Photography Production II
- CDFP 391 Photography: History of Photography I

**Electives (select 39-hour courses. Two 19.5-hour courses may be completed as the equivalent of one 39-hour course.)**

### 39-Hour Courses

- CDFP 320 Photography: Analog Photography
- CDFP 322 Photography: Photography for Ad Agencies
- CDFP 332 Photography: Digital Printing
- CDFP 333 Photography: Photography and Digital Imaging

- CDFP 353 Photography: From Still to Motion
- CDFP 358 Photography: Photography and the Web
- CDFP 367 Photography: Photoshop for Photographers
- CDFP 378 Photography: 20th Century Photography
- CDFP 381 Photography: Advanced Fashion Photography
- CDFP 382 Photography: Advanced Portrait Photography
- CDFP 389 Photography: Studio Lighting I
- CDFP 390 Photography: Studio Lighting II
- CDFP 392 Photography: Documentary Photography
- CDFP 398 Photography: History of Photography II
- CDFP 403 Photography: Creative Wedding Photography
- CDFP 404 Photography: Magazine/Editorial Photography
- CDFP 405 Photography: Architectural Photography
- CDFP 415 Photography: Studio Lighting III
- CDFP 905 Photography: Contemporary Photographic Art
- CDFP 918 Photography: Photojournalism
- CFPN 532 Photography: Advanced Studio Lighting
- CFPN 536 Photography: Media Business Studies
- CFPN 539 Photography: The Human Figure
- CFPN 543 Photography: Historical Processes Workshops

### 19.5-Hour Courses

- CDFP 414 Photography: Intro to Silver Photography
- CDFP 432 Photography: Digital Printing Workshop
- CDFP 907 Photography: Using a 4X5 View Camera

## Note to registered certificate program students

Effective Fall 2017, the Certificate in Photography Studies has been revised. Students who formally registered in the certificate prior to July 2, 2017, must complete the program requirements in effect at the time they registered.

### Electives

19.5-Hour Elective group added; students must complete five 39-hour electives or equivalent combination of electives totaling 195 hours.

### 39-Hour Courses

CDFP 353, CDFP 905, and CDFP 918 added.

### 19.5-Hour Courses

CDFP 414, CDFP 432, and CDFP 907 added.



# PREPARATION FOR PRACTICE IN CANADA FOR INTERNATIONALLY EDUCATED PROFESSIONALS IN NUTRITION

This certificate is designed to provide internationally educated professionals in nutrition (IEPNs) with a Canadian university certificate to supplement their international credentials, enabling enhanced opportunities for employment. It is also designed to assist IEPNs to be academically prepared for practice-based training, a required component to become a Registered Dietitian (RD) in Ontario. Graduates from this certificate will have demonstrated entry level academic competencies in dietetics, as defined by the Partnership for Dietetic Education and Practice's (PDEP's) Integrated Competencies in Dietetic Education and Practice (ICDEP).

For detailed certificate and program information, please visit [ryerson.ca/ce/iepn](http://ryerson.ca/ce/iepn).

**Program Coordinator:** Tammy Fansabedian, [ied@ryerson.ca](mailto:ied@ryerson.ca)

## Admission Criteria

Eligible applicants must have the following:

An assessment completed by the College of Dietitians of Ontario (CDO) and proof of English proficiency at the required level.

## Admission Application

An admission application is required for this program. A two-step pre-approval process will be conducted by the program coordinator including submission of an application package and an in-person assessment for qualifying applicants. For more information, contact [ied@ryerson.ca](mailto:ied@ryerson.ca).

## Certificate Requirements

The successful completion of the 10 required courses, with a cumulative grade point average of 1.67 or higher, is required for the certificate.

## Required Courses

- CFNN 202 Nutrition: Public Health Nutrition
- CFNN 301 Nutrition: Intro to Nutrition Management of Human Disease
- CFNN 400 Nutrition: Advanced Nutrition and Health
- CFNN 401 Nutrition: Advanced Nutrition Management of Human Disease
- CFNP 100 Professional Practice: Introduction to Professional Practice
- CFNP 350 Nutrition: Interpersonal Comm/Counselling Nutrition
- CFNP 550 Professional Practice: Introduction to Dietetics Practice
- CFNR 201 Research Methods: Research Methods and Statistics
- CFNS 200 Food Management: Quantity Food Management
- CFNS 400 Food Management: Food Service Systems Management

## Note to registered certificate program students

CFNP 200 deleted.

CFNP 350 added.



# PRIVACY, ACCESS, AND INFORMATION MANAGEMENT

*Note: Many of the courses in this program are available by distance education; visit the distance education website at [ryerson.ca/ce/de](http://ryerson.ca/ce/de) for further information.*

Rapid technological innovation is creating an urgent demand for privacy professionals across sectors who can effectively navigate the complex and unpredictable landscape of privacy and access. The Certificate in Privacy, Access, and Information Management is for those interested in moving into the profession. The certificate emphasizes the Privacy by Design approach and develops knowledge and skills in three key areas:

- Privacy governance and policy
- Information technology
- “21st century skills” such as creativity, innovation, and critical thinking

For detailed certificate and program information, please visit [ryerson.ca/ce/privacyaccess](http://ryerson.ca/ce/privacyaccess).

## Admission Criteria

It is recommended that applicants have the following:

OSSD with six Grade 12 U or M credits, including a credit in English with a minimum grade of 60 percent; or equivalent; or mature student status.

## Certificate Requirements

The successful completion of six courses, with a cumulative grade point average of 1.67 or higher, is required for the certificate.

## Required Courses

- CLAW 401 Law: Information Access and Privacy Protection
- CZIT 427 Information Technology Management: Data and Info. Mgmt for Privacy
- CZLW 327 Law: Privacy By Design
- CZLW 527 Law: Applying Privacy and Access

## Electives (select two)

- C DPR 100 Public Relations: Public Relations Principles
- CHIM 305 Health Information Management: Introduction to Health Informatics
- CITM 301 Information Technology Management: IT Infrastructure
- CITM 820 Information Technology Management: Information Systems Security and Privacy
- CLAW 122 Law: Business Law
- CLAW 402 Law: Health Information Access and Privacy
- CMHR 405 Human Resources: Organizational Behaviour
- CMHR 650 Human Resources: Management of Change
- CPPA 403 Politics and Public Administration: e-Government

## Professional Development

You can receive an acknowledgement of professional achievement once you have successfully completed three courses as follows:

**Professional Development Award: Introduction to Privacy, Access, and Information Management** requires completion of CLAW 401, CZIT 427, and CZLW 327.

Refer to page 141 for more information.



# WHAT DOES IT TAKE TO BE A PRIVACY PROFESSIONAL?

BY ANITA FINEBERG

LL.B., CIPP/C, BARRISTER & SOLICITOR, PRESIDENT,  
ANITA FINEBERG & ASSOCIATES INC., ADVISOR, CERTIFICATE  
IN PRIVACY, ACCESS, AND INFORMATION MANAGEMENT

With rapid technological advances making it easier to store and share vast amounts of personal information, people around the world are increasingly concerned about privacy. Responding to that concern, a growing number of specialized privacy professionals are working in various types of organizations to craft privacy policy, implement privacy initiatives, and provide high-level guidance to executives and boards.

Privacy is a career choice filled with opportunity. Globally, new legislation has been enacted – requiring dedicated teams that can ensure their organizations’ compliance. Privacy budgets are expanding, with most of the respondents to a 2016 survey conducted by the International Association of Privacy Professionals (IAPP) expecting an increase next year. And more than nine in 10 of those same respondents are confident that privacy “helps open career doors.” However, many people end up in privacy roles by accident when they’re asked to take charge “because someone has to do it.” Yet for privacy professionals to do their jobs well, they need a thorough grounding in privacy governance and policy and information technology. They also require a cluster of “21st century skills,” including the ability to be creative, innovative, think critically, engage in problem-solving, collaborative, flexible and adaptable, and respond quickly to new challenges.

Because privacy is a complex discipline it’s hard to learn all of this on the job. The Certificate in Privacy, Access, and Information Management delivers a rigorous standard of training to improve privacy protection for Canadians.

The certificate program benefits both privacy professionals and employers. Individuals can leverage educational programs to stay up to date on industry trends and boost their work and personal development goals. Distance education choices make it easier to fit learning into busy lives.

There are clear benefits for employers, too. Organizations are stronger when they can:

- hire new privacy professionals who can get “up to speed” faster because they have been equipped with practical skills they can apply on the job right away
- provide their privacy teams with cross-disciplinary, forward-looking knowledge tailored to the needs of their specific industry
- build an in-house resource that understands how other organizations are dealing with similar issues and that can help manage regulatory, reputational, and legal risk

Enhancing the qualifications of privacy professionals gives businesses, educational institutions, and individuals an opportunity to address a key risk in our interconnected world. With the right training programs in place, we can mitigate threats to sensitive data and continue to leverage the benefits provided by our technology-rich environment.

# PROJECT MANAGEMENT

*NOTE: This certificate program may be completed entirely at a distance. Visit the distance education website at [ryerson.ca/ce/de](http://ryerson.ca/ce/de) for further information.*

This certificate program in Project Management provides adult learners with an opportunity to acquire a level of knowledge and expertise that will permit them to contribute effectively to the management and the control of costs within any project environment. The program was developed in cooperation with the Project Management Institute, Southern Ontario Chapter.

For detailed certificate and program information, please visit [ryerson.ca/ce/pm](http://ryerson.ca/ce/pm).

## Certificate Streams

- Project Management (General)
- Architecture, Engineering, and Construction (AEC)
- Business and Information Management
- Community and Health Services Management

## Admission Criteria

It is recommended that applicants have the following:

OSSD with six Grade 12 U or M credits, or equivalent; persons lacking some of these requirements will be considered on an individual basis taking into account work-related experience.

## Certificate Requirements

The successful completion of eight single-term courses, earned in one of the following ways:

- five required core courses, two courses from three optional streams, and one course from the Elective category

OR

- five required core courses and three courses from the general stream
- Students must achieve a cumulative grade point average of 1.67 or higher to graduate.

## Recommended Sequence

Students are advised to take the Core Program courses in the following sequence: CITM 750 or CTEC 210, CKPM 203, CKPM 211, CKPM 212, CKPM 209. Students in the Business and Information Management stream are advised to take CITM 305 and CITM 410 first.

## Suggested Textbooks and Readings

Visit [ryerson.ca/ce/pm](http://ryerson.ca/ce/pm) for a list of textbooks and readings that may be used for all six Project Management Intensive courses. Please be aware that this list is subject to change. A finalized list will be presented on the first day of class.

## Required Courses (five)

### Core Program, Introductory Required Course

*Note: Students must choose either CITM 750 or CTEC 210. Students who plan to pursue the ITM degree should take CITM 750, as CTEC 210 cannot be used towards the ITM degree.*

- CITM 750 Information Technology Management: IS Project Management
- CTEC 210 Technology Studies: Fundamentals of Project Management

### Core Program, Required Courses

- CKPM 203 Project Management: Planning and Scheduling
- CKPM 209 Project Management: Project Risk and Quality Management
- CKPM 211 Project Management: Leadership in Project Management
- CKPM 212 Project Management: Project Cost and Procurement Management

## Select one option from the following choices.

### Option 1: Project Management General Stream, Required Courses

Select three courses from the list below.

- CCMN 114 Communication: Short Management Reports
- CHSM 306 Health Services Management: Management Leadership and Decision-Making
- CHSM 308 Health Services Management: Project Management - Long Term Care
- CINT 905 Interdisciplinary Studies: Conflict Resolution in Community Services
- CKPM 207 Project Management: Project Management Systems
- CKPM 217 Project Management: Agile Project Management
- CMHR 405 Human Resources: Organizational Behaviour

### Option 2: Architecture, Engineering, and Construction Stream, Required Courses

In addition to the courses below, select one course from 'Electives - All Streams'.

- CKPM 213 Project Management: Management of Projects in the AEC
- CKPM 214 Project Management: Project Development and Control

### Option 3: Business and Information Management Stream, Required Courses

*Note: Students in this stream should take CITM 305 and CITM 410 first, then take CITM 750 or CKPM 202, followed by the required courses in the Core Program.*

In addition to the courses below, select one course from 'Electives - All Streams'.

- CITM 305 Information Technology Management: Systems Analysis and Design
- CITM 410 Information Technology Management: Business Process Design

**Option 4: Community and Health Services Management Stream, Required Courses (select two)**

In addition to the courses below, select one course from 'Electives - All Streams'.

- CHSM 301 Health Services Management: The Healthcare Systems
- CHSM 305 Health Services Management: The Management Cycle
- CHSM 307 Health Services Management: Principles of Long Term Care Service Del.

**Electives – All Streams (select one 39-hour course. Two 19.5-hour courses may be completed as the equivalent of one 39-hour course.)**

**39-Hour Courses**

- CCMN 114 Communication: Short Management Reports
- CDCE 305 Workplace Communication in Canada (WCC): Intro to Intercultural Communication
- CDCE 306 Workplace Communication in Canada (WCC): Managing Workplace Relationships
- CDCE 307 Workplace Communication in Canada (WCC): Working with Culturally Diverse Clients
- CDCE 308 Workplace Communication in Canada (WCC): Cross Cultural Teamwork
- CHSM 306 Health Services Management: Management Leadership and Decision-Making
- CHSM 308 Health Services Management: Project Management - Long Term Care
- CINT 905 Interdisciplinary Studies: Conflict Resolution in Community Services
- CKPM 207 Project Management: Project Management Systems
- CKPM 215 Project Management: Emerging Trends in Project Management

- CKPM 216 Project Management: Project Management Internship
- CKPM 217 Project Management: Agile Project Management
- CKPM 218 Project Management: Enterprise Project Management
- CKPM 219 Project Management: Mobile Project Management
- CMHR 405 Human Resources: Organizational Behaviour

**19.5-Hour Courses**

- CKPP 110 Program and Portfolio Management: Overview of Program Management
- CKPP 120 Program and Portfolio Management: Overview of Portfolio Management

**Note to registered certificate program students**

**Core Program, Introductory Required Course**

CKPM 202 deleted.

CTEC 210 added.

**Project Management General Stream, Required Courses**

CITM 505 deleted.

**Electives – All Streams (39-Hour Courses)**

CITM 505 deleted.

CKPM 219 added.

**Professional Development**

You can receive an acknowledgement of professional achievement once you have successfully completed three courses as follows:

**Professional Development Award: Project Management** requires completion of any three of the following courses: CKPM 203, CKPM 207, CKPM 209, CKPM 211, CKPM 215, CKPM 217, and/or CTEC 210.

Refer to page 143 for more information.



“Taking courses at The Chang School has been a great help in my career. In 2016, I decided to make a career move from an engineering position to a more managerial role. I knew I had to prepare myself academically for this change, and I chose to enrol in the Certificate in Project Management because the flexibility of choosing both online and in-class courses, as well as being able to adjust the course schedule as per my needs, helped me a lot. The Chang School has been a great partner in my career advancement and it is one of the reasons I intend to continue my studies and enrol in the Certificate in Project Management for Technical Professionals upon completion of my current program.”

**ADEILTON RIBEIRO**  
LEARNER, CERTIFICATE IN  
PROJECT MANAGEMENT

# PROJECT MANAGEMENT FOR TECHNICAL PROFESSIONALS

*NOTE: This certificate program may be completed entirely at a distance. Visit the distance education website at [ryerson.ca/ce/de](http://ryerson.ca/ce/de) for further information.*

This certificate program will prepare professionals with technical backgrounds such as engineers, information technology professionals, scientists, environmentalists, and other technical professionals to become employed in middle-level management (MLM) positions in the field of project management. Participants will gain knowledge and skills in estimating, scheduling, risk analysis, quality assurance, leadership, problem-solving, and Canadian workplace culture and communication.

Certificate graduates will increase opportunities for career advancement or employability by acquiring a level of knowledge and expertise that will permit them to move into project management roles. This certificate will help prepare students to write the Project Management Professional (PMP)<sup>®</sup> examination offered by the Project Management Institute (PMI). Certificate graduates will be eligible to continue on to the Certificate in Project Management and/or the Certificate in Program and Portfolio Management, both offered by The Chang School.

For detailed certificate and program information, please visit [ryerson.ca/ce/pmtp](http://ryerson.ca/ce/pmtp).

## Admission Criteria

Eligible applicants must have the following:

### *Internationally Educated Professionals*

- An undergraduate degree and a minimum of two years of professional experience in a related field
- Be an accepted and registered participant in the Gateway for International Professionals' Middle-level Managers (MLM) with Technical Background Bridging Program
- Be a legal resident of Ontario at the time of application, and be eligible to work in Canada
- Have resided in Canada for no more than 10 years
- Be an internationally educated professional in a suitable technical discipline
- Demonstrate English language proficiency through any of Ryerson University's approved English language proficiency test scores

OR

### *All Other Applicants*

OSSD with six Grade 12 U or M credits, or equivalent; persons lacking some of these requirements will be considered on an individual basis taking into account work-related experience and maturity.

## Admission Application

An admission application is required for this program. A pre-approval process will be conducted by the program manager, including an orientation/information session, a one-on-one interview, and a language assessment. For more information, contact [mlm@ryerson.ca](mailto:mlm@ryerson.ca) or 416.979.5000, ext. 2713.

## Certificate Requirements

The successful completion of six courses, with a cumulative grade point average of 1.67 or higher, is required for the certificate.

## Required Course

- CTEC 210 Technology Studies: Fundamentals of Project Management

## Electives (select a total of five courses)

### *Electives - Group A (select three)*

- CKPM 123 Project Management: Strategic Project Mgt (Tech Prof)
- CKPM 207 Project Management: Project Management Systems
- CKPM 211 Project Management: Leadership in Project Management
- CKPM 212 Project Management: Project Cost and Procurement Management
- CKPM 216 Project Management: Project Management Internship
- CKPM 456 Project Management: Enterprise Project Mgt (Tech Prof)

### *Electives - Group B (select two)*

- CCMN 114 Communication: Short Management Reports
- CCMN 432 Communication: Communication in the Engineering Professions
- CDCE 330 Workplace Communication in Canada (WCC): Effective Persuasion and Public Speaking
- CDCE 400 Workplace Communication in Canada (WCC): Exploring Leadership Skills
- CDCE 910 Workplace Communication in Canada (WCC): Effective Oral Communication
- CMHR 405 Human Resources: Organizational Behaviour
- CMHR 650 Human Resources: Management of Change

## Note to registered certificate program students

### *Required Course*

- CKPM 202 deleted.
- CTEC 210 added.

# PSYCHOLOGY

This certificate program will appeal to students who wish to enhance their career opportunities and/or personal interests. The program provides the opportunity to study and understand human behaviour in a wide variety of settings. It is designed to familiarize students with the methods, concepts, theories, and applications of psychology.

Students may choose electives from a variety of areas in psychology or they may choose to concentrate on one of the following areas:

- psychological principles of growth and development
- abnormal aspects of human behaviour
- explanations of personality and its development
- the study of social behaviour
- applications of psychology in organizations

**Academic Coordinator:** Brian Rabinowicz, [brabinow@ryerson.ca](mailto:brabinow@ryerson.ca)

## Admission Criteria

It is recommended that applicants have the following:

OSSD with six Grade 12 U or M credits, or equivalent, or three years of experience in business, community service, or industry.

## Transfer Credits

Up to four single-term course credits may be granted on the basis of the successful completion of other Ryerson psychology courses or the completion of psychology courses at other post-secondary institutions meeting Ryerson Faculty of Arts requirements.

## Certificate Requirements

The successful completion of eight course credits, with a cumulative grade point average of 1.67 or higher, is required for the certificate. Three courses are compulsory: a foundation course, a research methodology course, and an independent study course. A foundation course must be taken as the first course. The independent study course may be taken only after the foundation course, the research methodology course, and three other courses chosen from the electives have been completed.

## Required Courses

Students may only select one of COPS 601 or CPSY 411.

Students may only select one of CPSY 102 or CPSY 105.

- COPS 250 Psychology: Independent Study
- COPS 601 Psychology: Research Methodology
- CPSY 102 Psychology: Introduction to Psychology I
- CPSY 105 Psychology: Perspectives in Psychology
- CPSY 411 Psychology: Research Methods and Statistics I

*Students planning to enrol in the Independent Study course should contact the Academic Coordinator, Department of Psychology, at 416.979.5000, ext. 6195, in the first week of September or January, to be assigned a faculty advisor from the Department of Psychology.*

## Electives (select five)

- CPSY 202 Psychology: Introduction to Psychology II
- CPSY 214 Psychology: Psychopharmacology
- CPSY 215 Psychology: Psychology of Addictions
- CPSY 300 Psychology: Psychology and Law
- CPSY 302 Psychology: Child Development
- CPSY 304 Psychology: Psychology of Gender
- CPSY 308 Psychology: Psychology of Thinking
- CPSY 324 Psychology: Biological Psychology
- CPSY 325 Psychology: Psychological Disorders
- CPSY 402 Psychology: Adult Development
- CPSY 412 Psychology: Human Brain Circuitry
- CPSY 504 Psychology: Social Psychology
- CPSY 505 Psychology: Personality Theory
- CPSY 518 Psychology: Environmental Psychology
- CPSY 602 Psychology: Developmental Psychopathology
- CPSY 606 Psychology: Abnormal Psychology
- CPSY 607 Psychology: Drugs and Human Behaviour
- CPSY 614 Psychology: Psychology of Sport
- CPSY 620 Psychology: Psychology of Immigration
- CPSY 621 Psychology: Psychology of Human Sexuality
- CPSY 706 Psychology: Personal Growth and Positive Psychology
- CPSY 707 Psychology: Models of Stress and Adaptation
- CPSY 802 Psychology: Death, Dying and Bereavement
- CPSY 805 Psychology: Adjustment, Stress and Coping
- CPSY 806 Psychology: Behaviour Modification
- CPSY 807 Psychology: Psychology of Prejudice
- CPSY 808 Psychology: Community Psychology
- CPSY 941 Psychology: Cross Cultural Psychology

## Suggested Elective Groupings

Students may choose electives from a variety of areas in psychology, or they may choose to focus on a specific area to achieve their individual goals. The electives may be grouped as follows:

**Abnormal Behaviour:** CPSY 215, CPSY 325, CPSY 602, CPSY 606, CPSY 607, CPSY 805, CPSY 806

**Biology and Behaviour:** CPSY 214, CPSY 215, CPSY 324, CPSY 412, CPSY 607, CPSY 621

**Growth and Development:** CPSY 302, CPSY 402, CPSY 602, CPSY 802

**Personality:** CPSY 505, CPSY 706, CPSY 805

**Social Behaviour:** CPSY 304, CPSY 504, CPSY 518, CPSY 614, CPSY 807, CPSY 808

**Social Issues:** CPSY 300, CPSY 518, CPSY 607, CPSY 620, CPSY 808, CPSY 941





# PUBLIC ADMINISTRATION AND GOVERNANCE

*NOTE: This certificate program may be completed entirely at a distance. Visit the distance education website at [ryerson.ca/ce/de](http://ryerson.ca/ce/de) for further information.*

Students who wish to obtain their Certificate in Public Administration and Governance or the Advanced Certificate in Public Administration and Governance, must apply through the Office of Undergraduate Admissions for admission to the Public Administration and Governance program. Do not use the standard continuing education certificate application. Upon completing these certificates, students may continue their studies to earn a degree in Public Administration and Governance. Please contact Viola Ing, Department of Politics and Public Administration: [ving@ryerson.ca](mailto:ving@ryerson.ca).

The Certificate and Advanced Certificate in Public Administration and Governance are designed for working public sector employees, students aspiring to careers in the public service, and those interested in gaining knowledge about public administration and public policy in Canada.

These certificates will provide students with the following:

- a better understanding of organizations and operations in the public sector
- the attainment of analytic, administrative, communication, and management skills necessary for career development in the public sector and organizations that deal with it
- an awareness of the political forces that shape public administration and policy

These certificates fulfill Levels 1 and 2 of the Public Administration and Governance degree program.

**Program Information:** Department of Politics and Public Administration: [ving@ryerson.ca](mailto:ving@ryerson.ca).

## Admission Criteria

It is recommended that applicants have the following:

OSSD with six Grade 12 U or M credits (including English) with a minimum of 60 percent, or mature student status.

Grade 13 subjects/OSSHGD may be combined/substituted with OACs/OSSD. Students who present credits from the OSSHGD (Grade 13 stream) or in combination with credits from the OSSD (OAC stream) should ensure that the credits satisfy the requirements.

## Certificate Requirements

The successful completion of eight single-term courses, with a cumulative grade point average of 1.67 or higher, is required. Students working toward a certificate must formally register in the Public Administration and Governance program (see introductory note above).

## Required Courses

- CPPA 101 Politics and Public Administration: Cdn Public Administration I: Institutions
- CPPA 102 Politics and Public Administration: Cdn Public Administration II: Processes
- CPPA 125 Politics and Public Administration: Rights, Equity and the State

## Required Group 1 (select two)

- CPPA 120 Politics and Public Administration: Canadian Politics and Government
- CPPA 121 Politics and Public Administration: Ontario Politics and Government
- CPPA 122 Politics and Public Administration: Local Politics and Government
- CPPA 124 Politics and Public Administration: Indigenous Politics and Governance

## Liberal Studies Elective Group A (One 1-term lower-level course required)

Liberal Studies courses are indicated by a “LL” for Lower Level and “UL” for Upper Level. Consult the undergraduate calendar for the complete list of Liberal Studies courses, and use the Course Search to search for your course by subject, term, time, or instruction mode.

## Professionally Related Elective Group B (Two 1-term courses required from Table I)

Students intending to proceed to further levels of the program should familiarize themselves with prerequisites pertaining to professionally related elective courses at all levels of the program as well as options for obtaining a minor. Consult the undergraduate calendar for a list of courses.

*Note: Upon successful completion of Level 1, students may apply for a Certificate in Public Administration and Governance by completing an Application to Graduate with a Certificate, prior to the appropriate application deadlines.*

# ADVANCED PUBLIC ADMINISTRATION AND GOVERNANCE

*Note: Many of the courses in this program are available by distance education; visit the distance education website at [ryerson.ca/ce/de](http://ryerson.ca/ce/de) for further information.*

Students who wish to obtain their Certificate in Public Administration and Governance or the Advanced Certificate in Public Administration and Governance, must apply through the Office of Undergraduate Admissions for admission to the Public Administration and Governance program. Do not use the standard continuing education certificate application. Upon completing these certificates, students may continue their studies to earn a degree in Public Administration and Governance. Please contact Viola Ing, Department of Politics and Public Administration: [ving@ryerson.ca](mailto:ving@ryerson.ca).

The Certificate and Advanced Certificate in Public Administration and Governance are designed for working public sector employees, students aspiring to careers in the public service, and those interested in gaining knowledge about public administration and public policy in Canada.

These certificates will provide students with the following:

- a better understanding of organizations and operations in the public sector
- the attainment of analytic, administrative, communication, and management skills necessary for career development in the public sector and organizations that deal with it
- an awareness of the political forces that shape public administration and policy

These certificates fulfill Levels 1 and 2 of the Public Administration and Governance degree program.

**Program Information:** Department of Politics and Public Administration: [ving@ryerson.ca](mailto:ving@ryerson.ca).

## Admission Criteria

Eligible applicants must have the following:

Certificate in Public Administration and Governance.

## Certificate Requirements

The successful completion of eight single-term courses, with a cumulative grade point average of 1.67 or higher, is required. Students working toward a certificate must formally register in the Public Administration and Governance program (see introductory note).

## Required Course

- CPPA 211 Politics and Public Administration: Public Policy

## Required Group 1

**(select three, not previously taken)**

- CPPA 120 Politics and Public Administration: Canadian Politics and Government
- CPPA 121 Politics and Public Administration: Ontario Politics and Government
- CPPA 122 Politics and Public Administration: Local Politics and Government
- CPPA 235 Politics and Public Administration: Theories of the State
- CPPA 303 Politics and Public Administration: Financial Management
- CPPA 319 Politics and Public Administration: Politics of Work and Labour

## Liberal Studies Elective Group A

**(One 1-term lower-level course required)**

Liberal Studies courses are indicated by a “L” for Lower Level and “UL” for Upper Level. Consult the undergraduate calendar for the complete list of Liberal Studies courses, and use the Course Search to search for your course by subject, term, time, or instruction mode.

## Professionally Related Elective Group B

**(1 course required)**

- CECN 104 Economics: Introductory Microeconomics
- CECN 204 Economics: Introductory Macroeconomics
- CECN 210 Economics: Understanding Economics
- CECN 220 Economics: Evolution of the Global Economy
- CECN 320 Economics: Introduction to Financial Economics

## Professionally Related Elective Group C

**(Two 1-term courses required)**

Please refer to the Undergraduate Calendar, Professionally Related Electives Table 1 for a complete list of appropriate courses.

Students intending to proceed to Level 3 of the program should familiarize themselves with prerequisites pertaining to professionally related elective courses at all levels of the program as well as options for obtaining a minor.

*Note: Upon successful completion of Level 2, students may apply for an Advanced Certificate in Public Administration and Governance by completing an Application to Graduate with a Certificate, prior to the appropriate application deadlines.*

*Students who have successfully completed the requirements for the Certificate and Advanced Certificate are eligible to continue to the degree level. For more information, contact the Department of Politics and Public Administration, 416.979.5057.*

# PUBLIC ADMINISTRATION AND LEADERSHIP

This program is designed for individuals who have already completed a degree and who wish to deepen their understanding of the key aspects of public sector management. The curriculum is focused on key areas of policy development, public sector finance, collaborative governance, intergovernmental affairs, program evaluation, e-government, and administrative law. A special capstone course focuses on the nature and style of leadership in the public sector.

**Academic Coordinator:** Patrice Dutil, [pdutil@ryerson.ca](mailto:pdutil@ryerson.ca)

## Admission Criteria

Eligible applicants must have the following:

An undergraduate degree in any field. Applicants who do not have a background in politics or public administration and/or no experience in the public sector are encouraged to successfully complete COPA 103 prior to admission in the certificate.

## Admission Application

Students seeking admission to this program are required to complete an application for pre-approval and submit it to the academic coordinator. To obtain an application visit [ryerson.ca/ce](http://ryerson.ca/ce) and click on Forms and Documents (then the program under Program Pre-Approval Forms), or call 416.979.5035. The completed application, together with transcripts, may be presented to the academic coordinator during the Open House, or mailed to the address on the form.

## Certificate Requirements

The successful completion of six courses (three required courses and three electives), with a cumulative grade point average of 1.67 or higher, is required for the certificate.

## Required Courses

- CPPA 211 Politics and Public Administration: Public Policy
- CPPA 404 Politics and Public Administration: Issues in Public Administration
- CPPA 501 Politics and Public Administration: Public Sector Leadership

## Electives (select three)

- CPPA 301 Politics and Public Administration: Administrative Law
- CPPA 303 Politics and Public Administration: Financial Management
- CPPA 335 Politics and Public Administration: Theories of Bureaucracy
- CPPA 401 Politics and Public Administration: Collaborative Governance
- CPPA 402 Politics and Public Administration: Program Planning and Evaluation
- CPPA 403 Politics and Public Administration: e-Government
- CPPA 414 Politics and Public Administration: Comparative Public Policy
- CPPA 425 Politics and Public Administration: Intergovernmental Relations



# PUBLIC RELATIONS

*NOTE: This certificate program may be completed entirely at a distance. Visit the distance education website at [ryerson.ca/ce/de](http://ryerson.ca/ce/de) for further information.*

If a challenging career consulting with professional businesses, community organizations, or government agencies sounds appealing, then public relations may be for you. Public relations practitioners work with a variety of leaders and other professionals to protect and enhance organizational reputation; manage issues and crises; conduct media relations; develop internal and external communication programs; develop and manage communication budgets; and write supporting communication materials such as plans, reports, news releases, business presentations, newsletters, website content, and much more.

Recognized by the International Association of Business Communicators (IABC), the Certificate in Public Relations provides a curriculum that will hone your practical, analytical, and theoretical skills to prepare you for a career in public relations.

For detailed information regarding the Public Relations Intensive, please visit [ryerson.ca/ce/intensivepr](http://ryerson.ca/ce/intensivepr).

## Admission Criteria

It is recommended that applicants have the following:

An undergraduate degree or three-year community college diploma; mature students must have, at least, a high school diploma and four years of progressive work experience in public relations practice, or in a business, professional, or technical field.

## Course Prerequisites

Successful completion of all stated prerequisites is required for registration in a course. Students who register in a course without successful completion of the prerequisites will be required to withdraw.

## Certificate Requirements

The successful completion of the equivalent of eight 39-hour courses with a cumulative grade point average of 1.67 or higher, is required for the certificate.

## Recommended Sequence

- CDPR 100
- CDPR 111
- Electives – three 39-hour courses (or equivalent combination of electives totalling 117 hours)
- CDPR 104
- CDPR 105
- CDPR 107

## Required Courses

- CDPR 100 Public Relations: Public Relations Principles
- CDPR 104 Public Relations: Planning Programming and Budgeting
- CDPR 105 Public Relations: Research and Program Evaluation
- CDPR 107 Public Relations: Public Relations Project
- CDPR 111 Public Relations: Writing for Public Relations

## Electives (three 39-hour courses. Two 19.5-hour courses may be completed as the equivalent of one 39-hour course.)

### 39-Hour Courses

- CDPR 106 Public Relations: Media Relations
- CDPR 108 Public Relations: Social Media in Public Relations
- CDPR 113 Public Relations: Internal Communications Management

### 19.5-Hour Courses

- CDPR 102 Public Relations: Business Presentations
- CDPR 103 Public Relations: Advanced PR Writing
- CDPR 110 Public Relations: Reputation Management
- CDPR 115 Public Relations: Corporate Social Responsibility

## Professional Development

You can receive an acknowledgement of professional achievement once you have successfully completed three courses as follows:

**Professional Development Award: Social Media Practices and Reputation Management** requires completion of CDPR 100, CDPR 108, and CDPR 110.

Refer to page 148 for more information.

# PUBLISHING

*NOTE: This certificate program may be completed entirely at a distance. Visit the distance education website at [ryerson.ca/ce/de](http://ryerson.ca/ce/de) for further information.*

This program teaches the skills necessary to publish books successfully. The program will be of interest to the following:

- those who want to enter the publishing industry
- those who are employed in the publishing industry or in areas where publishing skills are required
- those who are working as freelancers in publishing-related fields
- those who wish to upgrade their credentials with a view to career change

For detailed certificate and program information, including the Publishing Intensive (CDPB 999), please visit [ryerson.ca/ce/publishing](http://ryerson.ca/ce/publishing).

## Instructors

Our instructors are respected industry experts. They all work in publishing and bring up-to-date, applied knowledge to every course. Visit [ryerson.ca/ce/publishinginstructors](http://ryerson.ca/ce/publishinginstructors) for current instructor biographies.

## Awards

Students registered in the certificate program may apply for the program's awards and bursary; visit [ryerson.ca/ce/publishingawards](http://ryerson.ca/ce/publishingawards) for more details.

## Internships

We have an extensive network of industry partnerships that provide direct links between classroom experience and a career. Visit [ryerson.ca/ce/publishinginternships](http://ryerson.ca/ce/publishinginternships) to see the companies that may be offering industry internships to students in the program.

## Admission Criteria

It is recommended that applicants have the following:

Undergraduate degree, or mature student status with related professional experience and education.

## Notice to Students

Correct use of the English language is essential in the publishing industry. It is therefore an element in the evaluation and grading of assignments.

Students with no background in publishing are strongly advised to begin by taking either overview course (CDPB 100 or CDPB 200). Students with full-time positions are advised to register in no more than two credits per term. Specialized half-credit courses require some knowledge of subject or industry. In general, comfort with computers and a knowledge of appropriate software are an asset.

## Certificate Requirements

The successful completion of eight 39-hour courses or the equivalent, with a cumulative grade point average of 1.67 or higher, is required for the certificate.

### Required Courses

- CDPB 100 Publishing: Publishing Overview: Trade
- CDPB 200 Publishing: Publishing Overview: Education

**Electives (six 39-hour courses. Two 19.5-hour courses may be completed as the equivalent of one 39-hour course.)**

### 39-Hour Courses

- CDPB 101 Publishing: The Business of Book Publishing
- CDPB 102 Publishing: Copy Editing for Books, Journals, and Reports
- CDPB 103 Publishing: Production for Books, Journals, and Reports
- CDPB 104 Publishing: Introduction to Book Design
- CDPB 105 Publishing: Sales and Marketing for Book Publishers
- CDPB 110 Publishing: Publicity for Book Publishers
- CDPB 201 Publishing: Literary Rights Management
- CDPB 202 Publishing: Substantive and Stylistic Editing
- CDPB 212 Publishing: Visual Skills for Publishing
- CDPB 312 Publishing: Practical Grammar and Punctuation
- CDPB 803 Publishing: Digital Publishing and Production

### 19.5-Hour Courses

- CDPB 300 Publishing: Children's Classics in the 21st C
- CDPB 301 Publishing: Publishing for Children
- CDPB 302 Publishing: Government Reports
- CDPB 304 Publishing: Scholarly and Reference Publishing
- CDPB 306 Publishing: Trade Books: Fiction
- CDPB 309 Publishing: Editing Books for Children and Teens
- CDPB 310 Publishing: Proofreading for Books, Journals, and Reports
- CDPB 311 Publishing: Indexing for Books, Journals, and Reports
- CDPB 313 Publishing: Mktg Books for Children and Teens

### Professional Development

You can receive an acknowledgement of professional achievement once you have successfully completed four courses as follows:

**Professional Development Award: Children's Publishing** requires completion of CDPB 300, CDPB 301, CDPB 309, and CDPB 313.

Refer to page 123 for more information.



# RETAIL MANAGEMENT

*NOTE: This certificate program may be completed entirely at a distance. Visit the distance education website at [ryerson.ca/ce/de](http://ryerson.ca/ce/de) for further information.*

This certificate is designed for students seeking employment in or currently employed in retail, the largest employment sector in Canada. The program will focus on fundamental retail topics and provides students with the ability to choose electives based on broad interests or specific areas such as buying, operations, or management.

For detailed certificate and program information, please visit [ryerson.ca/ce/retail](http://ryerson.ca/ce/retail).

## Admission Criteria

It is recommended that applicants have the following:

OSSD with six Grade 12 U or M credits, or equivalent, AND one of the following:

Mature student status

OR

A recent college diploma or undergraduate degree

OR

A minimum of one year of related professional experience in the retail industry

## Certificate Requirements

The successful completion of six courses (two required courses and four electives), with a cumulative grade point average of 1.67 or higher, is required for the certificate.

## Required Courses

Students who demonstrate the requisite combination of education and work experience may apply to the academic coordinator to waive CRMG 200. Students granted this waiver must complete five elective courses instead of four.

- CRMG 200 Retail Management: Intro to Retail and Services Management
- CRMG 302 Retail Management: Retail Consumer Insight

## Electives (select four or five)

- CENT 500 Entrepreneurship: New Venture Startup
- CGMS 200 Global Management: Introduction to Global Management
- CMHR 405 Human Resources: Organizational Behaviour
- CMHR 523 Human Resources: Human Resources Management
- CMKT 100 Marketing: Principles of Marketing
- CQMS 102 Quantitative Methods: Business Statistics I
- CRMG 301 Retail Management: Retail Operations Management
- CRMG 303 Retail Management: Service Quality Management
- CRMG 400 Retail Management: Buying Process I
- CRMG 434 Retail Management: Intro to Logistics and Supply Chain Mgmt
- CRMG 452 Retail Management: Visual Merchandising and Space Planning
- CRMG 806 Retail Management: Retailer Perspectives on Category Management
- CRMG 902 Retail Management: Franchising
- CRMG 907 Retail Management: Relationship Marketing
- CRMG 909 Retail Management: Advanced Buying Process II
- CRMG 910 Retail Management: Omni-Channel Retailing
- CRMG 911 Retail Management: Retail Sales Management
- CRMG 916 Retail Management: Managing B2B Channels
- CRMG 919 Retail Management: Visualizing Data for Decisions
- CRMG 925 Retail Management: Leading in Retail Service Organizations

## Note to registered certificate program students

### Electives

CZRM 100 deleted.

CRMG 806 added.

## Professional Development

You can receive an acknowledgement of professional achievement once you have successfully completed three courses as follows:

**Professional Development Award: Retail Buying** requires completion of CRMG 400, CRMG 452, and (CRMG 806 or CRMG 909).

**Professional Development Award: Retail Operations** requires completion of CRMG 301, CRMG 303, and CRMG 925.

Refer to pages 144-145 for more information.

# ROBOTICS AND EMBEDDED SYSTEMS

*NOTE: This certificate program may be completed entirely at a distance. Visit the distance education website at [ryerson.ca/ce/de](http://ryerson.ca/ce/de) for further information.*

This certificate program provides adult learners with hands-on opportunities to acquire knowledge and skills that will permit them to contribute and respond effectively to our collective societal need to provide innovation through advances in robotics and embedded systems product and device development. Topics covered will range from microprocessor-based control systems to systems-on-chip (SoC) design to device software development for the purposes of consumer and commercial product development in any number of fields. Participants will build as they learn, producing robotic and embedded systems throughout the duration of the program.

For detailed certificate and program information, including the Robotics and Embedded Systems Fast Track (CKRE 999), please visit [ryerson.ca/ce/robotics](http://ryerson.ca/ce/robotics).

## Admission Criteria

It is recommended that applicants have the following:

Mature student status and evidence of relevant college or university level coursework, or equivalent

OR

Mature student status together with relevant industrial or professional experience

## Certificate Requirements

The successful completion of six courses, with a cumulative grade point average of 1.67 or higher, is required for the certificate.

## Recommended Sequence

Students are advised to take the courses in the following sequence:

- CSCI 130
- CKRE 110
- CKRE 120
- CKRE 130
- CKRE 140
- CKRE 150

## Required Courses

- CKRE 110 Robotics and Embedded Systems: Digital Logic and Hardware Architecture
- CKRE 120 Robotics and Embedded Systems: Programming Robotics Systems
- CKRE 130 Robotics and Embedded Systems: Embedded Systems Hardware Architecture and Implementation
- CKRE 140 Robotics and Embedded Systems: Real-Time Embedded Systems Programming
- CKRE 150 Robotics and Embedded Systems: Emerging Issues in Robotics and Embedded Systems
- CSCI 130 Science: Mobile Robotic Devices Embedded Systems





# SOCIAL SCIENCES AND HUMANITIES FOUNDATIONS

This certificate provides an opportunity to explore areas in social sciences and humanities and develop transferable university-level skills such as critical analysis and problem solving. Courses are based on the common first-year foundation of Ryerson's Faculty of Arts programs and may provide an opportunity for students to strengthen applications for full-time undergraduate degrees. Successfully completed courses may be considered as transfer credits to higher education degree programs, subject to admission and requirements for credit transfer.

**Academic Coordinator:** Dr. Alexandra Orlova, aorlova@ryerson.ca

## Admission Criteria

It is recommended that applicants have the following:

OSSD with six Grade 12 U or M credits, or equivalent, or mature student status.

Students who have not met the above requirements are required to take CENG 110 as one of their four electives.

## Certificate Requirements

The successful completion of six courses, with a cumulative grade point average of 1.67 or higher, is required for the certificate.

## Recommended Sequence

Students are advised to take the courses in the following sequence:

- CSSH 205
- CSSH 105
- Electives (four selections – two from Humanities and two from Social Sciences)

*Students who are planning to pursue an Arts degree and who do not have an English Grade 12 U or M course with a grade of 70% or higher are required to take CENG 110 as one of their four electives. It is recommended that they take CENG 110 immediately following CSSH 205, since both courses will provide a strong foundation in the writing skills needed to complete this certificate successfully.*

## Required Courses

- CSSH 105 Social Sciences and Humanities: Critical Thinking I
- CSSH 205 Social Sciences and Humanities: Academic Writing and Research

## Electives (select a total of four courses)

### *Electives – Humanities (select two)*

CFRE \*\*\* A French course<sup>†</sup>

CSPN \*\*\* A Spanish course<sup>†</sup>

- CACS 100 Contemporary Studies: Ideas That Shape the World I
- CACS 210 Contemporary Studies: Ideas that Shape the World: Antiquity
- CENG 110 English Literature: Literatures Across Borders
- CENG 208 English Literature: Introduction to Non-Fiction
- CHIS 104 History: Ten Days That Shook The World
- CHIS 105 History: Inventing Popular Culture
- CHIS 106 History: Technology, Warfare and Social Change
- CHIS 107 History: Colonization, Colonialism and Independence
- CLIR 100 Languages and Intercultural Relations: Global Models in Intercultural Relations
- CPHL 101 Philosophy: Plato and the Roots of Western Philosophy
- CPHL 201 Philosophy: Problems in Philosophy
- CPHL 333 Philosophy: Philosophy of Human Nature
- CPHL 366 Philosophy: Existentialism and Art and Culture

**Electives - Social Sciences (select two)**

- CCRM 100 Criminal Justice and Criminology: Introduction to Canadian Criminal Justice
- CCRM 102 Criminal Justice and Criminology: Introduction to Criminology
- CECN 104 Economics: Introductory Microeconomics
- CECN 204 Economics: Introductory Macroeconomics
- CEUS 102 Environment and Urban Sustainability: Environment and Sustainability
- CEUS 202 Environment and Urban Sustainability: Sustaining the City's Environments
- CGEO 131 Geography: Energy, Earth and Ecosystems
- CGEO 151 Geography: Location, Location, Location
- CPOG 100 Politics and Public Administration: People, Power and Politics
- CPOG 110 Politics and Public Administration: Power and Influence in Canadian Politics
- CPPA 101 Politics and Public Administration: Cdn Public Administration I: Institutions
- CPPA 102 Politics and Public Administration: Cdn Public Administration II: Processes

- CPSY 102 Psychology: Introduction to Psychology I
- CPSY 202 Psychology: Introduction to Psychology II
- CSOC 105 Sociology: Introduction to Sociology
- CSOC 107 Sociology: Sociology of the Everyday
- CSSH 100 Social Sciences and Humanities: Inquiry and Problem-Solving
- CSSH 102 Social Sciences and Humanities: Learning and Development Strategies
- CSSH 301 Social Sciences and Humanities: Research Design and Qualitative Methods

† An online placement test is required. See the Department's website for details: [ryerson.ca/llc/currentstudents/placement\\_tests.html](http://ryerson.ca/llc/currentstudents/placement_tests.html).

**Note to registered certificate program students****Electives - Humanities**

CACS 200 deleted.

CACS 210 added.



# PROFICIENCY IN SPANISH

This certificate is designed to provide proficiency in oral and written Spanish. It allows students the opportunity to upgrade their professional qualifications and to prepare for business or educational travel in the Spanish speaking world.

For detailed certificate and program information, please visit [ryerson.ca/ce/spanish](http://ryerson.ca/ce/spanish).

**Academic Coordinator:** Mignette Garvida, [mgarvida@ryerson.ca](mailto:mgarvida@ryerson.ca)

## Admission Criteria

It is recommended that applicants have the following:

Completion of Introductory Spanish I (CSPN 101) with a minimum grade of C+, or admission by placement assessment and interview.

## Certificate Requirements

The successful completion of six single-term courses, with a cumulative grade point average of 1.67 or higher, is required for the certificate.

## Advanced Placement

If the student completes four courses at a level higher than CSPN 401, the successful completion of four single-term courses is required for the certificate. All four courses must be at an advanced level (CSPN 501 or higher).

## Required Courses (see Advanced Placement)

- CSPN 201 Spanish: Introductory Spanish II
- CSPN 301 Spanish: Intermediate Spanish I
- CSPN 401 Spanish: Intermediate Spanish II
- CSPN 501 Spanish: Advanced Spanish I
- CSPN 601 Spanish: Advanced Spanish II

## Electives (select one)

- CSPN 402 Spanish: Spanish Conversation and Pronunciation
- CSPN 510 Spanish: Spanish for Native Speakers
- CSPN 515 Spanish: Introduction to Business Spanish
- CSPN 610 Spanish: Spanish Composition for Native Speakers
- CSPN 702 Spanish: Communication in Business Spanish
- CSPN 704 Spanish: Latin American Culture I
- CSPN 705 Spanish: The Boom in Latin American Literature
- CSPN 707 Spanish: Spanish-English Translation
- CSPN 708 Spanish: Contemporary Spanish Fiction
- CSPN 710 Spanish: History of the Spanish Language
- CSPN 804 Spanish: Latin American Culture II
- CSPN 810 Spanish: Cultural Context of Writing



“Although I speak Spanish, I wasn’t proficient at grammar or writing. I work with Spanish-speaking children, so I decided to enrol in The Chang School’s Proficiency in Spanish certificate. It was interactive and skillfully taught. Now I’m more comfortable communicating with anyone who speaks Spanish – including my family!”

**SANDRA MONTESDEOCA**  
GRADUATE, CERTIFICATE IN PROFICIENCY IN SPANISH

# STRATEGIC MARKETING

*Note: Many of the courses in this program are available by distance education; visit the distance education website at [ryerson.ca/ce/de](http://ryerson.ca/ce/de) for further information.*

Why strategic? Because you choose the courses you need to meet your career goals. This certificate is designed to meet the needs of marketing professionals wanting to develop expertise in a specific area or take a variety of courses to address knowledge gaps, as well as career changers wanting the fundamentals of marketing.

For detailed certificate and program information, please visit [ryerson.ca/ce/marketing](http://ryerson.ca/ce/marketing).

## Admission Criteria

It is recommended that applicants have the following:

OSSD with six Grade 12 U or M credits, or its equivalent, or mature student status with experience in business.

## Certificate Requirements

The successful completion of six courses, with a cumulative grade point average of 1.67 or higher, is required for the certificate. In exceptional cases credits may be granted on the basis of courses successfully completed at other institutions. Please note that you must apply for formal Transfer Credit.

## Recommended Sequence

Students are advised that CMKT 100 must be taken before CMKT 300, and both of these courses must be successfully completed prior to enrolment in all other Marketing courses.

## Required Courses

Students who demonstrate the requisite combination of education and work experience may apply to the academic coordinator to waive CMKT 100. Students granted this waiver must complete five Elective courses instead of four.

- CMKT 100 Marketing: Principles of Marketing
- CMKT 300 Marketing: Marketing Metrics and Analysis

## Electives (select four or five)

Students select four or five electives from one or more of the five streams.

### *Marketing Innovation Stream*

- CMKT 400 Marketing: Understanding Consumers and the New Media
- CMKT 500 Marketing: Marketing Research
- CMKT 510 Marketing: Innovations in Marketing
- CMKT 723 Marketing: Marketing in the Service Industry
- CMKT 730 Marketing: Assessing/Managing Market Opportunities
- CMKT 731 Marketing: Competitive Intelligence

### *Marketing Research Stream*

- CMKT 400 Marketing: Understanding Consumers and the New Media
- CMKT 500 Marketing: Marketing Research
- CMKT 600 Marketing: Integrated Case Analysis
- CMKT 700 Marketing: Business Intelligence/Decision Modeling
- CMKT 702 Marketing: Advanced Marketing Management

### *Social Media Stream*

- CITM 350 Information Technology Management: Concepts of e-Business
- CMKT 400 Marketing: Understanding Consumers and the New Media
- CMKT 510 Marketing: Innovations in Marketing
- CMKT 700 Marketing: Business Intelligence/Decision Modeling

### *Sports Marketing Stream*

- CMKT 504 Marketing: Effective Persuasion
- CMKT 600 Marketing: Integrated Case Analysis
- CMKT 702 Marketing: Advanced Marketing Management
- CMKT 828 Marketing: Sport Marketing Concepts and Strategy
- CMKT 829 Marketing: International Sport Marketing

### *General Stream*

- CGMS 522 Global Management: International Marketing
- CITM 350 Information Technology Management: Concepts of e-Business
- CMKT 400 Marketing: Understanding Consumers and the New Media
- CMKT 500 Marketing: Marketing Research
- CMKT 504 Marketing: Effective Persuasion
- CMKT 510 Marketing: Innovations in Marketing
- CMKT 600 Marketing: Integrated Case Analysis
- CMKT 700 Marketing: Business Intelligence/Decision Modeling
- CMKT 702 Marketing: Advanced Marketing Management
- CMKT 723 Marketing: Marketing in the Service Industry
- CMKT 730 Marketing: Assessing/Managing Market Opportunities
- CMKT 731 Marketing: Competitive Intelligence
- CMKT 828 Marketing: Sport Marketing Concepts and Strategy
- CMKT 829 Marketing: International Sport Marketing
- CMKT 850 Marketing: Applied Research Project

## Professional Development

You can receive an acknowledgement of professional achievement once you have successfully completed three or four courses as follows:

**Professional Development Award: Marketing Innovation** requires completion of four courses: CMKT 300, CMKT 400, CMKT 730, and (CMKT 500, or CMKT 510, or CMKT 723, or CMKT 731).

**Professional Development Award: Marketing Research** requires completion of three courses: CMKT 300, CMKT 500, and (CMKT 400 or CMKT 700).

**Professional Development Award: Social Media Marketing** requires completion of three courses: CMKT 300, CMKT 400, and CMKT 510.

**Professional Development Award: Sports Marketing** requires completion of three courses: CMKT 300, (CMKT 504 or CMKT 829), and CMKT 828.

Refer to pages 140, 147, and 148 for more information.



“The quality of the course content, especially in marketing courses, has been exceptional. Instructors are often industry practitioners who bring amazing knowledge and real life examples, as well as bring together a variety of media to support learning.”

**STUDENT COMMENT**  
CHANG SCHOOL STUDENT SURVEY 2013

# SUSTAINABILITY MANAGEMENT AND ENTERPRISE PROCESS EXCELLENCE

*Note: Many of the courses in this program are available by distance education; visit the distance education website at [ryerson.ca/ce/de](http://ryerson.ca/ce/de) for further information.*

Today, we live in challenging times with a fractured, unsustainable society and economy. In response to a growing need to move the world toward sustainable development and sustainable practices, a whole new profession is emerging. Sustainability management is of strategic importance globally in order to enhance and maximize the organizational impacts of the principles of sustainability by addressing the social, economic, and environmental dimensions – also known as the Triple Bottom Line (TBL or 3BL) or People-Planet-Profits (PPP) issues.

This unique certificate provides the competencies identified as being most critical to the successful performance of professionals working in the field of sustainability management by applying high demand tools and techniques of Lean Six Sigma quality assurance to further address management challenges, problem solving, and solution execution. The students will have the ability to leverage Lean Six Sigma processes and decision making in order to achieve business, economic, and sustainability goals at their places of work.

## Admission Criteria

It is recommended that applicants have the following:

Undergraduate degree in a relevant field with a GPA of 2.0, or equivalent

OR

A post-secondary diploma with a GPA of 2.0, or equivalent, AND three years of full-time relevant employment, subject to approval of the certificate's academic coordinator

OR

A total equivalent of four years of relevant full-time employment, subject to the approval of the certificate's academic coordinator

## Transfer Credits

Up to three transfer credits may be granted for previous studies similar to the courses listed in the elective streams. If an appropriate equivalency is established, a specific credit will be granted; however, a generic transfer credit (CKSS GEN) will be considered if a direct course equivalency cannot be established, but the course falls within one of the four elective streams of the certificate.

The primary requirements for a course to be considered for the CKSS GEN credit is as follows:

It must connect to and/or fall within one of the General, Architecture and Landscape Design, Environmental Management, or Socioeconomics of Sustainability Forces and Progress elective streams

OR

It must cover, in varying degrees, all of the social, economic, and environmental dimensions of sustainability/sustainable development

## Certificate Requirements

The successful completion of six single-term courses, with a cumulative grade point average of 1.67 or higher, is required for the certificate.

## Required Courses

- CKSS 100 Sustainability Management: Fundamentals in Sustainability I
- CKSS 101 Sustainability Management: Fundamentals in Sustainability II
- CKSS 210 Sustainability Management: Lean Six Sigma Contin Improvement
- CKSS 211 Sustainability Management: Lean Six Sigma Sust Bus Enterprise

## Electives (select two)

*Students select a total of two electives from one or more of the four streams.*

### General

- CHTT 510 Hospitality and Tourism: Sustainable Tourism: the Golden Goose?
- CKSS 102 Sustainability Management: Designing a Sust-Enterprise
- CKSS 212 Sustainability Management: Lean Six Sigma Quality Assurance
- CTEC 210 Technology Studies: Fundamentals of Project Management

### Architecture and Landscape Design

- CKAR 500 Architecture: Sustainable Buildings
- CKAR 601 Architectural Preservation and Conservation: Building Science for Architectural Preservation and Conservation
- CKLA 400 Landscape Design: Ecology and Sustainable Landscapes
- CKLA 450 Landscape Design: Landscape Restoration

### *Environmental Management*

- CKES 160 Environmental Sciences: Waste Management
- CKES 180 Environmental Sciences: Site Assessment
- CKES 190 Environmental Sciences: Renewable Energy and Green Technology
- CKES 210 Environmental Sciences: Applied Environmental Analysis
- CKES 220 Environmental Sciences: Environmental Law and Practice

### *Socioeconomics of Sustainability Forces and Progress*

- CECN 502 Economics: Economics of Energy and Natural Resources
- CECN 510 Economics: Environmental Economics
- CFNY 404 Food Security: Food Policy and Programs for Food Security
- CFNY 407 Food Security: Community Development and Food Security
- CKSS 201 Sustainability Management: Sustainability Topics and Trends
- CTEC 241 Technology Studies: Energy Innovation
- CTEC 264 Technology Studies: Trends in Smart Grid
- CTEC 269 Technology Studies: Trends in Energy Conservation
- CTEC 282 Technology Studies: Public Policy in Energy
- CVFN 410 Food Security: Understanding Urban Agriculture
- CVFN 411 Food Security: Dimensions of Urban Agriculture
- CVFN 412 Food Security: Urban Agriculture Types
- CVFN 413 Food Security: Urban Agriculture Policy-Making
- CZMN 200 Management: CSR Citizenship and Sustainability

### **Note to registered certificate program students**

Effective Fall 2017, the Certificate in Sustainability Management and Enterprise Process Excellence has been revised. Students who formally registered in the certificate prior to July 2, 2017, must complete the program requirements in effect at the time they registered.

#### *Electives – General*

CKPM 202 deleted.

CTEC 210 added.

#### *Electives – Architecture and Landscape Design*

CKAR 610 and CKLA 430 deleted.

#### *Electives – Socioeconomics of Sustainability Forces and Progress*

CKEI 100, CKEI 110, CKEI 120, and CKEI 130 deleted.

CTEC 241, CTEC 264, CTEC 269, CTEC 282, and CZMN 200 added.

### **Professional Development**

You can receive an acknowledgement of professional achievement once you have successfully completed three courses as follows:

**Professional Development Award: Lean Six Sigma and Sustainable Industry Enterprise** requires completion of any three of the following courses: CKSS 100, CKSS 101, CKSS 210, and/or CKSS 211.

Refer to page 139 for more information.

### **Fast Track in Sustainability Management and Enterprise Process Excellence**

This spring, participants in the Sustainability Management Fast Track (CKSS 999) can complete the four required courses plus two electives to earn the Certificate in Sustainability Management and Enterprise Process Excellence in three months. As well, students will have access to specialized material and individualized instructor support.



# COURSES AND PROGRAMS FAQ

## 1. I don't understand some of the terminology used in course descriptions. What does everything mean?

For definitions of Chang School terms, see the Important Terms on the Chang School website at [ryerson.ca/ce](http://ryerson.ca/ce).

## 2. Once I've found the course I want to take, how do I enrol in it?

If you have been actively enrolled at Ryerson within the last 18 months; have an active Ryerson Online Identity account; and a Visa, MasterCard, or American Express to pay your fees, you can enrol online directly from the course description using the 'Shopping Cart'. Refer to 3 Ways to Enrol in the Next Steps section to find out how to enrol online, in person, or by mail. For answers to all of your enrolment-related questions, check the Enrolment FAQ on the Chang School website at [ryerson.ca/ce](http://ryerson.ca/ce).

## 3. What are certificate programs at Ryerson?

Certificate programs consist of four (4) to ten (10) single-term courses that provide post-secondary-level studies in specific career-related areas and result in the awarding of a Ryerson certificate at the successful completion of all courses.

Undergraduate students wishing to pursue a continuing education certificate program should be aware of possible restrictions; please refer to the Curriculum Advising website at [ryerson.ca/currentstudents/curriculumadvising](http://ryerson.ca/currentstudents/curriculumadvising) for complete details.

## 4. In what areas does Ryerson offer certificate programs?

The G. Raymond Chang School of Continuing Education offers over 75 certificate programs and the number grows year by year. Detailed information about certificate programs currently offered is outlined in Courses and Programs on the Chang School website at [ryerson.ca/ce/calendar](http://ryerson.ca/ce/calendar).

## 5. Are there any admission criteria for certificate programs?

Ryerson certificates are offered at the undergraduate level. Normally you must have completed the OSSD with Grade 12 U or M credits, or equivalent, or mature student status (being over 21 years of age and having been away from formal education for at least two years). As a mature student, you do not necessarily have to meet normal secondary school admission requirements, although there is some variation among specific certificate programs. Some certificate programs require an undergraduate degree, an interview, or pre-approval prior to admission to the certificate program. Pre-approval forms are available in Forms and Documents on the Chang School website at [ryerson.ca/ce/calendar](http://ryerson.ca/ce/calendar).

## 6. When and how do I register in a certificate program?

Please refer to Important Dates in the Next Steps section for the application deadlines to register in a certificate program. We recommend applying for the certificate before enrolment in the first course towards the certificate. Registration in a certificate program allows you to take advantage of priority enrolment for your courses.

You can only be registered in one certificate at a time. Review the certificate program to determine if you meet the admission criteria and/or if you require departmental approval prior to registration in your program. Also check the Curriculum Advising website at [ryerson.ca/currentstudents/curriculumadvising](http://ryerson.ca/currentstudents/curriculumadvising) for any registration restrictions.

If you have a Ryerson Student Number and an active Ryerson Online Identity, you may register in a certificate program in your RAMSS Student Centre at [my.ryerson.ca](http://my.ryerson.ca) by clicking "Chang Certificate Reg/Trnsfr".

If you are a new student and need a Ryerson Student Number, visit Request a Student Number on the Chang School website at [ryerson.ca/ce/calendar](http://ryerson.ca/ce/calendar). You are able to register for your certificate program at the same time.

If you can't remember your password, visit [my.ryerson.ca](http://my.ryerson.ca), click "Need help?" and then "Students" to reset your password.

Again, we recommend applying for the certificate before enrolment in the first course towards the certificate. This will allow maximum flexibility in crediting external courses and/or courses previously taken at Ryerson to a maximum of 50 percent of the certificate requirements.

If you choose not to register in the certificate before enrolment of your first course, please note that all applicable certificate courses taken prior to registration will be counted towards your graduation requirements; however, they will not be included in the calculation of your cumulative GPA (grade point average). Refer to questions 5 and 15.

## 7. Can I use Ryerson certificate courses that I took prior to registering in the certificate program?

Yes, in principle; however some limitations apply (e.g., a residency requirement states that at least 50 percent of the courses must be taken after registering in the certificate program). Courses taken prior to registration in the certificate program will not be included in the calculation of your Certificate GPA.

## 8. Can I use any credits earned in a Ryerson degree program toward a certificate program?

Yes, however, 50 percent of the courses used to meet certificate graduation requirements must be completed in your Continuing Education Career (CNEC). Also, the certificate cannot be restricted to students in the undergraduate program (refer to the Curriculum Advising website at [ryerson.ca/currentstudents/curriculumadvising](http://ryerson.ca/currentstudents/curriculumadvising) for complete details).

Undergraduate students may access continuing education courses by 'cross-enrolling' within their Undergraduate (UGRD) career. These courses will be included in the student's Undergraduate GPA.



9. Can I transfer external credits from another accredited post-secondary institution toward a Ryerson certificate program?

Yes; however, it is important to note that a Ryerson residency requirement stipulates that 50 percent of courses in a Ryerson certificate must be Ryerson courses taken after registering in the certificate program and through The G. Raymond Chang School of Continuing Education.

Note: Ryerson courses taken before registering in a certificate (these are courses which students want to credit toward a certificate), as well as courses transferred from other post-secondary institutions may not constitute more than 50 percent of the certificate program requirements. Refer to the Transfer Credits website at [ryerson.ca/currentstudents/transferecredits](http://ryerson.ca/currentstudents/transferecredits) for detailed transfer credit application instructions for Chang School students.

10. When can I apply for a Transfer Credit, course substitution/directive, challenge credit, or letter of permission?

As soon as you receive confirmation of acceptance into a certificate program.

11. Are Transfer Credits included in my grade point average?

No. They are recorded on your academic record as CRT (credit). Transfer Credits will not be used in the calculation of your cumulative GPA. Refer to Grade Point Averages on the Chang School website at [ryerson.ca/ce/calendar](http://ryerson.ca/ce/calendar).

12. Can I register in more than one Ryerson certificate program at the same time?

No. You may be registered in only one certificate program at the same time.

13. Can I register in a Ryerson certificate and a degree at the same time?

Yes. However, all continuing education certificate courses in which you have enrolled will be counted in your Continuing Education Career GPA and subsequently your Certificate GPA. If these courses are part of your degree requirements, they will also be included in the calculation of your program requirements but not in your Undergraduate Career GPA. Students enrolled in a degree program and pursuing a Chang School certificate should ensure that their course enrolments are within the appropriate career.

Some certificates are restricted for some undergraduate programs. Refer refer to the Curriculum Advising website at [ryerson.ca/currentstudents/curriculumadvising](http://ryerson.ca/currentstudents/curriculumadvising) for a restriction listing if you are also in an undergraduate program.

14. Can I register in a Ryerson certificate which is restricted to my undergraduate degree program?

No. You may, however, register if the certificate is restricted to an undergraduate degree program from which you have already graduated. Please contact The Chang School for further assistance.

15. Can I continue my certificate program studies if I have been admitted to an undergraduate degree program?

Yes. In many cases, students will be allowed to continue their certificate studies. However, in the event that the certificate is restricted to your undergraduate degree program, you will automatically be withdrawn from the certificate program and notified accordingly.

16. How do I know which curriculum to follow?

It is the curricula published online at the time you registered in the certificate. It is recommended that you keep a list of the certificate requirements of your program of study. Curriculum may change, in which case requirements must be completed by way of Course Substitution/Directive; refer to the Chang School website at [ryerson.ca/ce](http://ryerson.ca/ce) for more information.

17. Are there any time limits for completing a certificate program?

Yes. To graduate, you must successfully complete the published certificate curricula from the year you registered in the program. Certificate requirements must be completed within six years from the time you were first admitted into the certificate program. Also, you must apply to graduate on RAMSS at [my.ryerson.ca](http://my.ryerson.ca), upon enrolment in or prior to the completion of your final course and within the appropriate application deadlines (refer to Important Dates in the Next Steps section).

18. If I want more information on registration or graduation in a certificate program, where do I go?

See Registration in a Certificate Program and Graduation in the Policies section of the Chang School website at [ryerson.ca/ce](http://ryerson.ca/ce); or call The G. Raymond Chang School of Continuing Education office at 416.979.5035.

19. Do I need a minimum GPA to graduate?

Yes. A CGPA of 1.67 or higher is required to graduate from a certificate program.

20. Can I use any of the credits earned in a Ryerson certificate program to another Ryerson credential such as a degree?

Possibly; applicable courses earned in a Ryerson certificate can be used towards a Ryerson degree provided the courses taken are degree level. These courses will not be included in the calculation of your Undergraduate Career GPA.

21. How do I withdraw from a certificate program?

Students are required to complete and submit a Certificate Program Withdrawal Form (available in Forms and Documents on the Chang School website at [ryerson.ca/ce/calendar](http://ryerson.ca/ce/calendar)) to Registrar's Office Client Services located in the ServiceHub (Podium, 1st floor, 350 Victoria Street). Please note that withdrawing from a course does not withdraw you from a certificate program. As well, withdrawing from a certificate program does not drop you from your enrolled courses. You must officially drop your courses online, by mail, or in person, according to Ryerson's official deadline dates (refer to Important Dates in the Next Steps section).

**22. Since I registered in my certificate program, the number of courses required to graduate has changed. Can I transfer to the new curriculum?**

This varies depending on the certificate program. Contact your academic coordinator to discuss your options.

**23. How do I transfer from one Chang School certificate program to another?**

You can transfer to another certificate program online in your RAMSS Student Centre at [my.ryerson.ca](http://my.ryerson.ca) by clicking “Chang Certificate Reg/Trnsfr”. There is no fee to apply.

**24. What are the certificate program fees?**

The certificate program fees are calculated on a per-course basis. If the course costs an average of \$700 and there are eight (8) courses required for the certificate, then the total course fees would be \$5,600. To find the cost of each course, select each course link.

**25. Does the fee change if I am an international student?**

Yes. The fees for international students are approximately two and a half (2.5) times higher than the listed fees. For international student registration, please contact [ce@ryerson.ca](mailto:ce@ryerson.ca).

**26. What is the schedule of course offerings for this academic year?**

Use the Course Search on the Chang School website at [ryerson.ca/ce](http://ryerson.ca/ce) to find the course you are looking for. Select the course you would like to register for, then click Add to Cart.

Note: Not all courses run every term. Courses, as a rule, fill two (2) weeks before courses start, so enrol and pay for courses early to avoid disappointment.

**27. When do online courses begin?**

Online courses begin their first week on a Monday. Each following week begins on Saturday.

**28. Can I take more than one course in the evening and still hold my full-time job?**

Yes. It is possible to take more than one course in the evenings and still hold on to your full-time job.

**29. Can I substitute one of the courses in this certificate for a different course offered at The Chang School?**

No. There are no course substitutions allowed in the certificate program.

**30. How do I register?**

Step 1: Obtain your Ryerson Student Number.

Step 2: Activate your Ryerson Online Identity.

Step 3: Register in the certificate program via the link in the Student Self-Service Centre in RAMSS. Follow the registration instructions.

Step 4: Enrol in all desired courses. Review course enrolment dates.

**31. Am I able to get financial aid?**

Continuing Education Students' Association of Ryerson (CESAR), your student union, and The G. Raymond Chang School of Continuing Education offer a wide range of awards, bursaries, and scholarships for students who are eligible. For more information, Refer to Awards and Bursaries in the Next Steps section or visit [ryerson.ca/ce/awards](http://ryerson.ca/ce/awards).



# COURSE SERIES

The G. Raymond Chang School of Continuing Education offers course series – a program or grouping of courses in a defined area of knowledge or skill, which, upon successful completion, may result in a recognition of achievement. This year, The Chang School is offering eleven brand new course series!

# COURSE SERIES

3-D Printing, Visualization, and Agile Product Prototyping .....	119	Immigration and Settlement Studies .....	135
Accounting, Introductory .....	119	Intercultural Communication in the Canadian Workplace (ICCW) .....	135
Advanced Make-Up Artistry and Special Effects .....	120	Interdisciplinary Conflict Resolution and Team Building .....	136
Applied Analytics and Statistics for 21st Century Decision-Making ...	120	*Interdisciplinary Studies: Community Partnerships .....	136
*Architectural Preservation .....	121	*Interdisciplinary Studies: Interdisciplinary Program Management .....	137
Architectural Technologists Professional Career Foundations .....	121	Internationally Trained Medical Doctors (ITMD) Bridging Program .....	137
Arts and Entertainment Administration .....	122	*Internet of Things (IoT), The .....	138
Caring Clown .....	122	*iPhone and Android Applications Developer .....	138
CATIA Engineering Design .....	123	Leading and Planning for Patient Experience .....	139
Children's Publishing .....	123	Lean Six Sigma and Sustainable Industry Enterprise .....	139
Computer Applications .....	124	Marketing Innovation .....	140
Computer Programming for Game Developers .....	124	Marketing Research .....	140
*Conservation and Renewal of Urban Buildings .....	125	Patient Safety and Nursing Informatics .....	141
Costume Specialties .....	125	Privacy, Access, and Information Management, Introduction to ...	141
Creative Photography .....	126	Professional Healthcare Careers Foundations .....	142
Creative Writing .....	126	Project Management .....	143
*Drone/UAV Ground School .....	127	*Research Methodologies and Program Evaluation .....	144
*Early Childhood Mental Health and Well-Being .....	127	Retail Buying .....	144
Entering Foreign Markets .....	128	Retail Operations .....	145
Entrepreneurship and Small Business .....	128	Science, Technology, Engineering, and Mathematics (STEM) .....	145
Environmental Sciences .....	130	Scientific Research Policy and Ethics .....	147
Family Supports and Community Engagement .....	130	Social Media Marketing .....	147
Film Production Techniques Using Mobile Devices .....	131	Social Media Practices and Reputation Management .....	148
*Financial Predictive Data Analytics .....	131	Sports Marketing .....	148
*Hadoop, Python, and Tableau Big Data Tools .....	132	Survival in Urban Disasters and Emergencies .....	149
Health Data Analytics, Introduction to .....	132	Urban Agriculture .....	149
Health Ethics .....	133	Workplace Communication in Canada (WCC) .....	150
Health Informatics .....	133		
Health Services Management .....	134		
Human Body, The .....	134		

\*New course series launched for the 2017-2018 academic year.

# 3-D PRINTING, VISUALIZATION, AND AGILE PRODUCT PROTOTYPING

This program focuses on mastering agile product design, product sculpture, and prototyping with 3-D printers. Participants are taken through a series of hands-on in-class activities to familiarize them with the process of product ideation, realization of their designs digitally, 3-D animations of their designs, and the 3-D production of product prototypes using 3-D printers.

**Supplies to be purchased by the student:** Students are required to purchase (or already own) the following software: Pixologic ZBrush and ZSpheres, Autodesk Mudbox, SOLIDWORKS, DynaMesh, and 3-D computer graphics software that saves objects in the STL (stereolithography) format. As well, students must own or have access to a laptop, a tablet, tablet pen, and an external hard drive.

**Important Note:** The 3-D printing of student product design is available for an additional fee.

For more information, contact Alex Ferworn, Academic Coordinator, at [afeworn@ryerson.ca](mailto:afeworn@ryerson.ca).

Those who successfully complete this course series are eligible to earn a Professional Development Award from The G. Raymond Chang School of Continuing Education.

## Recommended Sequence

Students are advised to take the courses in the following sequence: CKCS 233; CKCS 230; and CKCS 231. CKCS 232 and CKCS 234 may be taken without reference to the aforementioned recommendation.

## Required Courses (select four)

- CKCS 230 Computer Science: Intro to SOLIDWORKS for 3-D Printing
- CKCS 231 Computer Science: Product 3-D Animation/ Rendering
- CKCS 232 Computer Science: 3-D Printing: Agile Prototyping
- CKCS 233 Computer Science: Product Design for 3-D Printing
- CKCS 234 Computer Science: Product Drawing for 3-D Printing

Once you have successfully completed the courses, email The Chang School at [ce@ryerson.ca](mailto:ce@ryerson.ca) with your name, student number, and the course series you have completed. Upon verification, you will receive your Professional Development Award.

## Fast Track in 3-D Printing, Visualization, and Agile Product Prototyping

This spring, participants in the 3-D Printing Fast Track (CKCS 995) can complete all four courses in the program and access specialized material and individualized instructor support.

# INTRODUCTORY ACCOUNTING

This course series provides students interested in developing accounting skills with essential introductory accounting knowledge.

For more information, contact Melissa Johnson, Program Coordinator, at [m1johnso@ryerson.ca](mailto:m1johnso@ryerson.ca).

Those who successfully complete this course series are eligible to earn a Professional Development Award from The G. Raymond Chang School of Continuing Education.

## Required Courses

The Professional Development Award may be achieved in one of the following ways:

### Option 1:

- CACC 110 Accounting: Financial Accounting
- CACC 410 Accounting: Management Accounting

OR

### Option 2:

- CACC 100 Accounting: Introductory Financial Accounting
- CACC 333 Accounting: Core Concepts of Accounting
- CACC 406 Accounting: Introductory Management Accounting

The courses in Option 1 may be applied to the Accounting – Finance certificate (see page 22 for more information). Once you have successfully completed the courses, email The Chang School at [ce@ryerson.ca](mailto:ce@ryerson.ca) with your name, student number, and the course series you have completed. Upon verification, you will receive your Professional Development Award.



## ADVANCED MAKE-UP ARTISTRY AND SPECIAL EFFECTS

This course series focuses on make-up artistry in film, TV, theatre, and photography; you'll learn the latest techniques and receive professional advice about succeeding in the business.

For more information, visit [ryerson.ca/ce/makeup](http://ryerson.ca/ce/makeup) or contact Jane Stevenson, Instructor, at [jstevenson@ryerson.ca](mailto:jstevenson@ryerson.ca).

Those who successfully complete this course series are eligible to earn a Professional Development Award from The G. Raymond Chang School of Continuing Education.

### Required Courses

- CDTH 431 Make-up Techniques: Make-Up Artistry for Film Video and TV
- CDTH 435 Make-up Techniques: Special Effects Make-Up for Stage and Screen
- CDTH 448 Make-up Techniques: Introduction to Make-Up Techniques for Theatre and Film

Once you have successfully completed the courses, email The Chang School at [ce@ryerson.ca](mailto:ce@ryerson.ca) with your name, student number, and the course series you have completed. Upon verification, you will receive your Professional Development Award.

## APPLIED ANALYTICS AND STATISTICS FOR 21ST CENTURY DECISION-MAKING

This program offers a focused grounding in 21st century applied statistical and analytical skills in the most up-to-date techniques in statistical analysis that are sought after in today's workplace. It is open to anyone who is interested in a professional career in business, industry, government, or research. At the end of the program, students are proficient in analyzing, forecasting, and carrying out real-world, applied statistical analysis projects (including using SAS) and in providing evidence-based recommendations for sound decision-making.

For more information, contact Marcos Escobar, Academic Coordinator, at [escobar@ryerson.ca](mailto:escobar@ryerson.ca).

Those who successfully complete this course series are eligible to earn a Professional Development Award from The G. Raymond Chang School of Continuing Education.

### Required Courses

Students must select either ((CMTH 304 or CMTH 380) and CMTH 404) OR (CQMS 102 and CQMS 202). Course selections may not be combined from both groups. The Professional Development Award may be achieved in one of the following ways:

#### Option 1:

Students may only select one of CMTH 304 or CMTH 380.

- CIND 123 Industrial Engineering: Data Analytics: Basic Methods
- CMTH 304 Mathematics: Probability and Statistics I
- CMTH 380 Mathematics: Probability and Statistics I
- CMTH 404 Mathematics: Probability and Statistics II

OR

#### Option 2:

- CIND 123 Industrial Engineering: Data Analytics: Basic Methods
- CQMS 102 Quantitative Methods: Business Statistics I
- CQMS 202 Quantitative Methods: Business Statistics II

### Note to course series students

CQMS 102 and CQMS 202 added.

Once you have successfully completed the courses, email The Chang School at [ce@ryerson.ca](mailto:ce@ryerson.ca) with your name, student number, and the course series you have completed. Upon verification, you will receive your Professional Development Award.



# ARCHITECTURAL PRESERVATION

This is a highly technical program consisting of courses focused on subjects related to building renovation, restoration and rehabilitation, and historical preservation and conservation. The program is designed to provide graduates with specific knowledge and skills in architectural preservation and conservation.

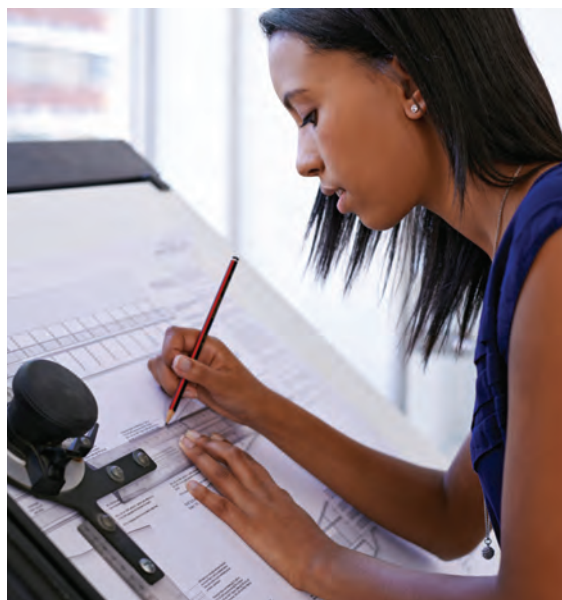
For more information, contact The Chang School at [ce@ryerson.ca](mailto:ce@ryerson.ca) or 416.979.5035.

Those who successfully complete this course series are eligible to earn a Professional Development Award from The G. Raymond Chang School of Continuing Education.

## Required Courses

- CKAR 205 Architecture: Building Codes and Regulations
- CKAR 310 Architecture: Materials and Methods
- CKAR 601 Architectural Preservation and Conservation: Building Science for Architectural Preservation and Conservation

Once you have successfully completed the courses, email The Chang School at [ce@ryerson.ca](mailto:ce@ryerson.ca) with your name, student number, and the course series you have completed. Upon verification, you will receive your Professional Development Award.



# ARCHITECTURAL TECHNOLOGISTS PROFESSIONAL CAREER FOUNDATIONS

This program offers the solid foundational educational requirements and skills sets necessary to commence preparation toward accreditation as an architectural technologist. It is intended for those aspiring to be architectural technologist professionals who are currently in high demand with employers in architectural firms, governments, and construction companies. Upon completion, students will be proficient in AutoCAD, the latest Canadian building codes and regulations, Canadian best practices and standards for materials and methods, and for mechanical and electrical systems.

For more information, contact Yew-Thong Leong, Academic Coordinator, at [ytleong@ryerson.ca](mailto:ytleong@ryerson.ca).

Those who successfully complete this course series are eligible to earn a Professional Development Award from The G. Raymond Chang School of Continuing Education.

## Recommended Sequence

Students are advised to take the courses in the following sequence: CKAR 205, CKAR 310, CKAR 500, and CKAR 215.

## Required Courses

- CKAR 205 Architecture: Building Codes and Regulations
- CKAR 215 Architecture: Computer-Aided Architectural Drawing
- CKAR 310 Architecture: Materials and Methods
- CKAR 500 Architecture: Sustainable Buildings

## Note to course series students

CKAR 201 deleted.

CKAR 500 added.

Once you have successfully completed the courses, email The Chang School at [ce@ryerson.ca](mailto:ce@ryerson.ca) with your name, student number, and the course series you have completed. Upon verification, you will receive your Professional Development Award.

## ARTS AND ENTERTAINMENT ADMINISTRATION

If you work in the cultural sector as an individual or as a group, Ryerson University's G. Raymond Chang School of Continuing Education can help you develop entrepreneurial skills to support your creative work through a course series in Arts and Entertainment Administration. The course series provides learners with a blend of practical and theoretical instruction in a format that arts managers, potential arts managers, and individual artists will find suitable for their experience. The instruction addresses issues for both the for-profit and not-for-profit sectors.

Each course is taught by a seasoned professional who works in the cultural industry and who can help you develop confidence in learning to build your business.

For more information, visit [ryerson.ca/ce/aeadmin](http://ryerson.ca/ce/aeadmin) or contact Sholem Dolgoy, Academic Coordinator, at [a.e.a@ryerson.ca](mailto:a.e.a@ryerson.ca).

Those who successfully complete this course series are eligible to earn a Professional Development Award from The G. Raymond Chang School of Continuing Education.

### Required Courses

- CDAM 100 Arts and Entertainment Administration: Making a Living in the Arts
- CDAM 102 Arts and Entertainment Administration: Audience Outreach and Engagement
- CDAM 103 Arts and Entertainment Administration: Programmatic Mktng for Arts and Ent
- CDAM 104 Arts and Entertainment Administration: Social Media Mktng Arts and Ent

Once you have successfully completed the courses, email The Chang School at [ce@ryerson.ca](mailto:ce@ryerson.ca) with your name, student number, and the course series you have completed. Upon verification, you will receive your Professional Development Award.



## CARING CLOWN

This program is for adults 50+ who want to make a difference by bringing joy, laughter, and fun into the lives of long-term care residents. This unique, hands-on program trains volunteers to bring cheer to residents in long-term care homes. Caring Clown courses offer playful exercises, informative discussions, and skill-building activities that develop imagination, spontaneity, and musicality. In addition, working closely with long-term care homes, a practicum provides an opportunity for the Caring Clown to gain experience.

For further information about this course series, please visit [ryerson.ca/ce/caringclown](http://ryerson.ca/ce/caringclown). For general information, contact [mena.carravetta@ryerson.ca](mailto:mena.carravetta@ryerson.ca) or 416.979.5000, ext. 3850.

Those who successfully complete this course series are eligible to earn a Recognition of Completion from The G. Raymond Chang School of Continuing Education.

### Required Courses

- CSCC 900 Caring Clown: Caring Clown I
- CSCC 910 Caring Clown: Caring Clown II
- CSCC 911 Caring Clown: Caring Clown Practicum

### Supplementary Workshops

These courses give experienced Caring Clowns the opportunity to further develop their learning and professional skills; however, they are not required for the Caring Clown Recognition of Completion. Please be aware that not all courses are scheduled every academic year; check the individual courses for up-to-date scheduling.

- CSCC 200 Caring Clown: Strengthen Your Clown Character
- CSCC 201 Caring Clown: Clowning Into the World of the Other
- CSCC 202 Caring Clown: Music Therapy and Caring Clown
- CSCC 203 Caring Clown: The Joy of Dance
- CSCC 204 Caring Clown: Opening to the Expressive Body
- CSCC 205 Caring Clown: The Joy of Failure
- CSCC 206 Caring Clown: Awakening New Possibilities



## CATIA ENGINEERING DESIGN

This program provides students with foundational, applied, and academic knowledge and skill sets in CATIA design. The courses offer students a comprehensive picture of current best practices in CATIA design and real-life industry applied case studies. They allow students to meet their individual interests in extending their knowledge and skills needed to support engineering design and product development. This knowledge and applicable skill set will be useful for technical digital practitioners whether they are serving on commercial, para-public, national defense, municipal, provincial, and national or international structural design projects or product development projects.

For more information, contact Anne-Marie Brinsmead, Program Director, Engineering, Architecture, and Science, at [a2brinsm@ryerson.ca](mailto:a2brinsm@ryerson.ca).

Those who successfully complete this course series are eligible to earn a Professional Development Award from The G. Raymond Chang School of Continuing Education.

### Required Courses

- CKAE 100 Aerospace: CATIA Engineering Design I
- CKAE 101 Aerospace: CATIA Engineering Design II
- CKAE 102 Aerospace: CATIA Engineering Design III

Once you have successfully completed the courses, email The Chang School at [ce@ryerson.ca](mailto:ce@ryerson.ca) with your name, student number, and the course series you have completed. Upon verification, you will receive your Professional Development Award.

## CHILDREN'S PUBLISHING

This course series is intended for individuals who wish to specialize in this dynamic and growing sector within the book publishing industry. Toronto is the centre for children's publishing in Canada, and Canada is a recognized leader in children's publishing worldwide. In-depth training in children's publishing will prepare our students for entry into this vibrant sector.

For more information, visit [ryerson.ca/ce/publishing](http://ryerson.ca/ce/publishing) or contact Brad Horning and Meg Taylor, Academic Coordinators, at [publish@ryerson.ca](mailto:publish@ryerson.ca).

Those who successfully complete this course series are eligible to earn a Professional Development Award from The G. Raymond Chang School of Continuing Education.

### Required Courses

- CDPB 300 Publishing: Children's Classics in the 21st C
- CDPB 301 Publishing: Publishing for Children
- CDPB 309 Publishing: Editing Books for Children and Teens
- CDPB 313 Publishing: Mktg Books for Children and Teens

These courses may be applied to the Publishing certificate (see page 103 for more information). Once you have successfully completed the courses, email The Chang School at [ce@ryerson.ca](mailto:ce@ryerson.ca) with your name, student number, and the course series you have completed. Upon verification, you will receive your Professional Development Award.



## COMPUTER APPLICATIONS

This course series is intended for individuals who have an interest in keeping up with the latest and hottest computer-specific applications, technology, and software. Students may take any combination of three courses in the series, in any order.

For more information, contact The Chang School at [ce@ryerson.ca](mailto:ce@ryerson.ca) or call 416.979.5035.

Those who successfully complete this course series are eligible to earn a Professional Development Award from The G. Raymond Chang School of Continuing Education.

### Required Courses (select three)

- CIND 108 Industrial Engineering: Data Analytics for Non-Data Analysts
- CKCS 900 Computer Science: Introduction to C++
- CKCS 901 Computer Science: Introduction to Cloud Computing
- CKCS 902 Computer Science: Digital Speech Processing
- CKCS 903 Computer Science: Fundamentals of Speech Recognition
- CKCS 904 Computer Science: Introduction to Eye Tracking
- CKCS 905 Computer Science: Contracting for Cloud Computing
- CKCS 910 Computer Science: Fast Track in SEO

Once you have successfully completed the courses, email The Chang School at [ce@ryerson.ca](mailto:ce@ryerson.ca) with your name, student number, and the course series you have completed. Upon verification, you will receive your Professional Development Award.

## COMPUTER PROGRAMMING FOR GAME DEVELOPERS

This program teaches 3-D Unity and Autodesk's Maya (in a computer lab) to equip students with the programming and scripting skills set to develop, on server-based and mobile devices, a range of commercial and serious games such as video games, learning games, "training interactive", and augmented reality simulations and applications. The project-centred approach provides hands-on engaging computer programming application and game development that are closely analogous to work projects that the students will experience in their real-world work as game developers.

For more information, contact Alex Ferworn, Academic Coordinator, at [aferworn@ryerson.ca](mailto:aferworn@ryerson.ca).

Those who successfully complete this course series are eligible to earn a Professional Development Award from The G. Raymond Chang School of Continuing Education.

### Required Courses

- CKCS 170 Computer Science: C++ and CSharp.net for Game Dev
- CKCS 171 Computer Science: Math for Game Dev Design
- CKCS 172 Computer Science: Game Mechanics for Game Dev

Once you have successfully completed the courses, email The Chang School at [ce@ryerson.ca](mailto:ce@ryerson.ca) with your name, student number, and the course series you have completed. Upon verification, you will receive your Professional Development Award.

### Fast Track in Computer Programming for Game Developers

This spring, participants in the Computer Programming Fast Track (CKCS 999) can complete all three courses in the program and access specialized material and individualized instructor support.



# CONSERVATION AND RENEWAL OF URBAN BUILDINGS

In this program, students master solutions associated with existing asset evaluation of damage and deterioration; preservation and rehabilitation of existing assets and urban spaces; repair and re-use of materials associated with cost control; and best practices in adaptive re-use and sustainability. Topics include management and renewal of public and private physical assets, including built infrastructure, and fixed plants such as urban buildings, airports, hospitals, broadband networks, and interior and open-air private and public spaces.

For more information, contact Lamy Amleh, Academic Coordinator, at [lamleh@ryerson.ca](mailto:lamleh@ryerson.ca).

Those who successfully complete this course series are eligible to earn a Professional Development Award from The G. Raymond Chang School of Continuing Education.

## Required Courses

- CKAM 160 Infrastructure Asset Management: Infrastructure Repair
- CKAM 170 Infrastructure Asset Management: Sustainable Building Design
- CKAM 180 Infrastructure Asset Management: Preservation and Future Assets

Once you have successfully completed the courses, email The Chang School at [ce@ryerson.ca](mailto:ce@ryerson.ca) with your name, student number, and the course series you have completed. Upon verification, you will receive your Professional Development Award.

# COSTUME SPECIALTIES

Theatrical costumes are created to meet the aesthetic and physical needs of a production, using specialized techniques and methods to achieve the custom designs created for the fantastical world of performance. This course series offers classes in the theatrical approach to costume dyeing, painting breakdown, surface design, embellishment, and specialty building. The practical studio approach offers designers, artists, and artisans alternative practices that they can incorporate into their own work.

For more information, visit [ryerson.ca/ce/costume](http://ryerson.ca/ce/costume) or contact Jennifer Triemstra-Johnston, Instructor, at [jtriemst@ryerson.ca](mailto:jtriemst@ryerson.ca).

Those who successfully complete this course series are eligible to earn a Professional Development Award from The G. Raymond Chang School of Continuing Education.

## Required Courses

- CDTH 460 Theatre: Costume Painting and Dyeing
- CDTH 461 Theatre: Costume Specialty Building
- CDTH 462 Theatre: Costume Surface Design

Once you have successfully completed the courses, email The Chang School at [ce@ryerson.ca](mailto:ce@ryerson.ca) with your name, student number, and the course series you have completed. Upon verification, you will receive your Professional Development Award.



Pavel L. Photo and Video / Shutterstock.com

## CREATIVE PHOTOGRAPHY

If you have a passion for photography, welcome to the course series in Creative Photography. Short-term courses between 12 and 24 hours in the evenings, and/or weekends, will test your creative abilities. Landscape, documentary, websites, portfolio development, portraits, and even pinhole digital imaging are some of the courses offered. Courses will be taught by professional photographers who work in the industry and who will help you create your ideas.

For more information, visit [ryerson.ca/ce/creativephotography](http://ryerson.ca/ce/creativephotography) or contact Dennis Miles, Academic Coordinator, at [dmiles@ryerson.ca](mailto:dmiles@ryerson.ca).

Those who successfully complete this course series are eligible to earn a Professional Development Award from The G. Raymond Chang School of Continuing Education.

### Required Courses (select a minimum of three courses, totalling a minimum of 60 hours)

- CDFP 318 Photography: Photographing in the Field
- CDFP 319 Photography: Documentary Project
- CDFP 355 Photography: Digital B&W Photography
- CDFP 388 Photography: Pinhole Digital Images
- CDFP 414 Photography: Intro to Silver Photography
- CDFP 416 Photography: Street Photography
- CDFP 417 Photography: Night Photography
- CDFP 418 Photography: Landscape Photography
- CDFP 419 Photography: Exploring Toronto Landscapes
- CDFP 420 Photography: Making a Photographic Book
- CDFP 421 Photography: The Interpretive Portrait
- CDFP 422 Photography: Commercial Portraits
- CDFP 423 Photography: The Portable Portrait Flash
- CDFP 424 Photography: Introduction to Lightroom
- CDFP 425 Photography: Lightroom Advanced
- CDFP 432 Photography: Digital Printing Workshop
- CDFP 907 Photography: Using a 4X5 View Camera
- CDFP 924 Photography: Gallery Hopping
- CDFP 925 Photography: Smartphones as a Fine Art Tool
- CDFP 926 Photography: Building a Portfolio
- CDFP 927 Photography: Your Portfolio and Website
- CDFP 928 Photography: Building a Photography Website
- CDFP 929 Photography: The Photo Business Starter Kit

### Note to course series students

CDFP 350 and CDFP 373 deleted.

CDFP 414, CDFP 432, and CDFP 907 added.

Once you have successfully completed the courses, email The Chang School at [ce@ryerson.ca](mailto:ce@ryerson.ca) with your name, student number, and the course series you have completed. Upon verification, you will receive your Professional Development Award.

## CREATIVE WRITING

Creative writing is both a craft and an art. This course series will allow students to dip a toe into the world of imaginative writing and then continue with more advanced courses in a variety of genres. We welcome beginners and advanced writers, and everyone in between.

For more information, visit [ryerson.ca/ce/writing](http://ryerson.ca/ce/writing) or contact Ann Ireland, Academic Coordinator, at [aireland@ryerson.ca](mailto:aireland@ryerson.ca).

Those who successfully complete this course series are eligible to earn a Professional Development Award from The G. Raymond Chang School of Continuing Education.

### Required Courses (select a minimum of three courses, totalling a minimum of 60 hours)

- CWWR 298 Genre and Specialty Writing: Writing for The Children's Market
- CWWR 305 Genre and Specialty Writing: Beyond Writing Romance Novels
- CWWR 336 Autobiographical Writing: True to Life: Writing Your Own Story
- CWWR 367 Genre and Specialty Writing: The Art of Promotional Writing
- CWWR 369 Writing: Writers and the New Media
- CWWR 410 Writing: Short Fiction Writing - Level I
- CWWR 411 Writing: Short Fiction Writing - Level II
- CWWR 415 Writing: Fiction and Non-Fiction Writing
- CWWR 420 Writing: Novel Writing - Level I
- CWWR 421 Writing: Novel Writing - Level II
- CWWR 425 Writing: Short Fiction and Novel Writing - Level III
- CWWR 430 Writing: Writing Poetry: Rapping, Reading, Revising
- CWWR 436 Autobiographical Writing: True to Life: Writing Your Own Story - Level II
- CWWR 446 Genre and Specialty Writing: Writing Television Situation Comedy
- CWWR 450 Writing: From The Horse's Mouth - Getting Published
- CWWR 514 Writing: Works in Progress: Writing Workshop
- CWWR 952 Autobiographical Writing: Creative Travel Writing

Once you have successfully completed the courses, email The Chang School at [ce@ryerson.ca](mailto:ce@ryerson.ca) with your name, student number, and the course series you have completed. Upon verification, you will receive your Professional Development Award.

# DRONE/UAV GROUND SCHOOL

This program prepares students for Transport Canada's Pilot Knowledge Requirements and Special Drone/UAV Flight Operation Permit. Students complete the Special Flight Operation Permit (SFOC) application and learn Transport Canada compliant operations, drone/UAV technologies, best practices, risk and crisis management, drone equipment maintenance and repairs, flight planning, remote sensing applications, and standard operation procedures and post-flight image/video processing. Topics include air law, navigation, meteorology, aeronautics, and radiotelephony.

For more information, contact Alex Ferworn, Academic Coordinator, at [aferworn@ryerson.ca](mailto:aferworn@ryerson.ca).

Those who successfully complete this course series are eligible to earn a Professional Development Award from The G. Raymond Chang School of Continuing Education.

## Required Courses

- CKCS 175 Computer Science: Drone/UAV Pilot Ground School
- CKCS 176 Computer Science: Drone/UAV Operations
- CKCS 177 Computer Science: UAV Remote Sensing Apps

Once you have successfully completed the courses, email The Chang School at [ce@ryerson.ca](mailto:ce@ryerson.ca) with your name, student number, and the course series you have completed. Upon verification, you will receive your Professional Development Award.

## Drone/UAV Ground School Fast Track

This spring, participants in the Fast Track in Drone/UAV Ground School (CKCS 997) can complete all three courses in the program and access specialized material and individualized instructor support.



# EARLY CHILDHOOD MENTAL HEALTH AND WELL-BEING

This program offers professionals in the field of early learning and care the opportunity to enhance professional practice skills related to child and family health, well-being, early intervention, and inclusive practices. Students will critically explore frameworks, theories, and practices – both current and evolving – as they relate to the children and families with whom they work.

For more information, contact Jennifer Butterly, Program Manager, at [jennifer.butterly@ryerson.ca](mailto:jennifer.butterly@ryerson.ca).

Those who successfully complete this course series are eligible to earn a Professional Development Award from The G. Raymond Chang School of Continuing Education.

## Required Course

- CCLD 342 Early Childhood Studies: Assessment for Programming

## Electives (select two)

### Health and Well-Being

- CCLD 444 Early Childhood Studies: Therapies for Young Children
- CCLD 446 Early Childhood Studies: Children and Chronic Illness

### Professional Practice

- CCLD 442 Early Childhood Studies: Infant Mental Health
- CCLD 445 Early Childhood Studies: Inclusion and Consultation

Once you have successfully completed the courses, email The Chang School at [ce@ryerson.ca](mailto:ce@ryerson.ca) with your name, student number, and the course series you have completed. Upon verification, you will receive your Professional Development Award.

## ENTERING FOREIGN MARKETS

This course series is designed for students who wish to build on their existing cultural knowledge, language capabilities, or Canadian business experience in order to develop skills in entering foreign markets. Completion of this course series will provide students with the tools to analyze foreign market opportunities and select appropriate entry mode strategies. Students will also develop the knowledge and skills required to design and implement foreign market strategies, organize overseas market operations, and develop strategies for multinational corporations. This course series will also equip students with a solid understanding of the role of the Canadian government in the regulation of international trade and the competencies required to establish an export-import operation.

For more information, contact Michael Manjuris, Academic Coordinator, at [manjuris@ryerson.ca](mailto:manjuris@ryerson.ca).

Those who successfully complete this course series are eligible to earn a Professional Development Award from The G. Raymond Chang School of Continuing Education.

### Required Courses

- CGMS 522 Global Management: International Marketing
- CGMS 723 Global Management: International Trade
- CGMS 724 Global Management: Management of International Enterprise

These courses may be applied to the Global Management Studies certificate (see page 68 for more information) or to an applicable certificate. Once you have successfully completed the courses, email The Chang School at [ce@ryerson.ca](mailto:ce@ryerson.ca) with your name, student number, and the course series you have completed. Upon verification, you will receive your Professional Development Award.

## ENTREPRENEURSHIP AND SMALL BUSINESS

The three courses required for this course series will provide an essential body of knowledge needed to start and/or grow a business venture within a multicultural context.

For more information, contact Dr. Phil Walsh, Academic Coordinator, at [prwalsh@ryerson.ca](mailto:prwalsh@ryerson.ca).

Those who successfully complete this course series are eligible to earn a Professional Development Award from The G. Raymond Chang School of Continuing Education.

### Required Courses

Students may only select one of CENT 526 or CENT 601.

- CENT 500 Entrepreneurship: New Venture Startup
- CENT 505 Entrepreneurship: Small-Business Management
- CENT 526 Entrepreneurship: Entrepreneurial Behaviour and Strategy
- CENT 601 Entrepreneurship: Identifying Opportunities

The courses may be applied to the Entrepreneurship and Small Business certificate (see page 52 for more information). Once you have successfully completed the courses, email The Chang School at [ce@ryerson.ca](mailto:ce@ryerson.ca) with your name, student number, and the course series you have completed. Upon verification, you will receive your Professional Development Award.





**Aileen Crowne,  
Graduate, Public Administration and  
Governance (BA)**

*“I returned to school because I wanted to expand my knowledge and skills, and had heard great things about The Chang School.”*

Ryerson University has a reputation as a leader in innovative career-focused education and The Chang School is recognized for its high-quality, career-related, and professional education learning.

## AMBITION MEETS PROFESSIONALISM

When asked the key traits of an entrepreneur, Aileen Crowne ticks off the obvious ones: determination and perseverance. But she also notes the importance of being aware of your shortcomings. “It’s the ability to somehow be humble, to know what you know and what you don’t know,” she says.

Perhaps it’s that trait that prompted Aileen to enrol in Entrepreneurial Behaviour and Strategy (CENT 526) at The Chang School last fall. After all, she had already started a business back in 2001 when she became an executive coach.

But having success doesn’t mean you stop trying to learn, and Aileen saw value in re-entering a classroom, as her business involves coaching clients who are entrepreneurs and 20-somethings aiming to start their own businesses.

“I returned to school because I wanted to expand my knowledge and skills, and had heard great things about The Chang School,” she says.

But returning to school after 30 years in the workforce can be a bit daunting: “The first night I remember walking into the classroom, the teacher walked in, and I thought ‘Okay, I’m the oldest one here.’”

Any apprehension quickly disappeared, however, as she found her expertise was helpful to the younger students and they provided Aileen with insights of their experiences.

Aileen also found her instructor to be very helpful by providing a wide-variety of entrepreneurial examples. “The instructor made (the course) very relevant by illustrating key people in Canada who have different models of doing entrepreneurship,” she says.

Now Aileen uses course elements as part of her coaching and she says it’s always a good idea to keep learning, no matter what stage in your career.

“Just for the sheer pleasure of growing, learning, and strengthening core competencies that I bring to my business, I think that’s a good thing to do.”

*Story by Cameron French, Learner, Writing Workshops / Photo by Yiqing Wang, Graduate, Certificate in Photography Studies*

## ENVIRONMENTAL SCIENCES

This course series provides individuals the opportunity to enhance their knowledge in a number of specific areas related to environmental sciences. Students receive a grounding in air, water, and soil processes and contamination, instrumentation, and experiment design. Human impact on the environment requires effective management practices to protect the environment. Environmental sciences offer an increasing number of career opportunities in fields as varied as ecology, occupational health and safety, physical science, bioremediation, engineering, law, and management.

For more information, contact Anne-Marie Brinsmead, Program Director, Engineering, Architecture, and Science, at [a2brinsm@ryerson.ca](mailto:a2brinsm@ryerson.ca).

Those who successfully complete this course series are eligible to earn a Professional Development Award from The G. Raymond Chang School of Continuing Education.

### Required Courses (select three)

- CKES 120 Environmental Sciences: Environmental and Atmospheric Processes
- CKES 160 Environmental Sciences: Waste Management
- CKES 170 Environmental Sciences: Water Treatment
- CKES 180 Environmental Sciences: Site Assessment
- CKES 190 Environmental Sciences: Renewable Energy and Green Technology
- CKES 210 Environmental Sciences: Applied Environmental Analysis
- CKES 220 Environmental Sciences: Environmental Law and Practice

The courses may be applied to the Environmental Sciences certificate (see page 53 for more information). Once you have successfully completed the courses, email The Chang School at [ce@ryerson.ca](mailto:ce@ryerson.ca) with your name, student number, and the course series you have completed. Upon verification, you will receive your Professional Development Award.

## FAMILY SUPPORTS AND COMMUNITY ENGAGEMENT

This course series addresses the growing demand for skills that expand and integrate knowledge for practitioners in the fields of early learning, family support, community engagement, and health-related sectors. It will also support learners working in diverse community-based programs.

Students will gain knowledge and competencies to address challenges experienced by contemporary families while promoting healthy child development. This course series also focuses on specific strategies to engage families in effective planning, problem-solving, and decision-making processes that will improve conditions of family and community well-being.

For more information, contact Catherine Moher, Academic Coordinator, at [cmoher@ryerson.ca](mailto:cmoher@ryerson.ca) or 416.979.5000, ext. 2535.

Those who successfully complete this course series are eligible to earn a Professional Development Award from The G. Raymond Chang School of Continuing Education.

### Required Courses

- CSWP 936 Social Work: Community Engagement Practices
- CVFS 403 Family Supports: Family Supports Theory and Practice

### Electives (select one)

- CINT 905 Interdisciplinary Studies: Conflict Resolution in Community Services
- CSWP 935 Social Work: Engaging Diverse Communities
- CVFS 401 Family Supports: Contemporary Family Issues
- CVFS 406 Family Supports: Guiding Children's Development

Once you have successfully completed the courses, email The Chang School at [ce@ryerson.ca](mailto:ce@ryerson.ca) with your name, student number, and the course series you have completed. Upon verification, you will receive your Professional Development Award.





# FILM PRODUCTION TECHNIQUES USING MOBILE DEVICES

The current trends in mobile devices have provided consumers and media professionals alike with the tools to capture imagery and audio in ways that have never existed before with such immediacy. Instruction will include topics such as visual story telling, techniques for fiction and documentary filmmaking, video production techniques for social and informal media, editing and advanced postproduction techniques, and video publishing techniques for distribution to various media.

For more information, contact James Warrack, Academic Coordinator, at [jwarrack@ryerson.ca](mailto:jwarrack@ryerson.ca).

Those who successfully complete this course series are eligible to earn a Professional Development Award from The G. Raymond Chang School of Continuing Education.

## Required Courses (select four)

- CDMP 350 Film Studies: Visual Story Telling
- CDMP 351 Film Studies: Filmmaking Techniques
- CDMP 352 Film Studies: Video Productions Techniques
- CDMP 353 Film Studies: Film Editing Techniques
- CDMP 354 Film Studies: Advanced Post-Production
- CDMP 355 Film Studies: Video Publishing Techniques

Once you have successfully completed the courses, email The Chang School at [ce@ryerson.ca](mailto:ce@ryerson.ca) with your name, student number, and the course series you have completed. Upon verification, you will receive your Professional Development Award.

# FINANCIAL PREDICTIVE DATA ANALYTICS

This program is intended to provide professionals with advanced mathematical knowledge to conduct financial predictive data analytics including how to utilize big data analytics methods to analyze financial data. Participants will attain a mastery of financial mathematics, especially in probability, statistics, and numerical analysis, together with an understanding of the highly complex analytics of financial markets and world economies.

For more information, contact Chul Kim, Academic Coordinator, at [chulkim@ryerson.ca](mailto:chulkim@ryerson.ca).

Those who successfully complete this course series are eligible to earn a Professional Development Award from The G. Raymond Chang School of Continuing Education.

## Required Course

- CMTH 501 Mathematics: Numerical Analysis I

## Electives (select two)

Students may only select one of CIND 123, CMTH 304, or CMTH 380.

Students may only select one of CMTH 404 or CMTH 480.

- CIND 123 Industrial Engineering: Data Analytics: Basic Methods
- CMTH 304 Mathematics: Probability and Statistics I
- CMTH 380 Mathematics: Probability and Statistics I
- CMTH 404 Mathematics: Probability and Statistics II
- CMTH 480 Mathematics: Probability and Statistics II

Once you have successfully completed the courses, email The Chang School at [ce@ryerson.ca](mailto:ce@ryerson.ca) with your name, student number, and the course series you have completed. Upon verification, you will receive your Professional Development Award.



# HADOOP, PYTHON, AND TABLEAU BIG DATA TOOLS

This program builds hands-on technical skills in Hadoop, Python, and Tableau Big Data Tools Administration. Students program and administer, within Hadoop, Python, and Tableau dedicated administrative platform environments, big data analytics queries on unstructured data, visual data, and social media data. The most industry-adopted big data tools, applications, and administrative platform environments are Hortonworks, Hadoop, Python, and Tableau which are covered in depth.

For more information, contact Alex Ferworn, Academic Coordinator, at [aferworn@ryerson.ca](mailto:aferworn@ryerson.ca).

Those who successfully complete this course series are eligible to earn a Professional Development Award from The G. Raymond Chang School of Continuing Education.

## Required Courses (select two)

- CKCS 107 Computer Science: Data Analytics Through Excel
- CKCS 150 Computer Science: Introduction to Programming in Python
- CKCS 155 Computer Science: Intro to Hadoop and Tableau

Once you have successfully completed the courses, email The Chang School at [ce@ryerson.ca](mailto:ce@ryerson.ca) with your name, student number, and the course series you have completed. Upon verification, you will receive your Professional Development Award.

## Fast Track in Hadoop, Python, and Tableau Big Data Tools

This spring, participants in the Big Data Tools Fast Track (CKCS 996) can complete two of the courses in the program and access specialized material and individualized instructor support.

# INTRODUCTION TO HEALTH DATA ANALYTICS

This program is designed for students who want to fill gaps in their professional health background to achieve greater professional development and/or transition careers into the health field. The demand for healthcare professionals with data analytical skills is growing in both health-specific and health-related fields, especially with the increase in accountability policies and the requirement of many health graduate programs that students have courses in this area to be admitted.

For more information, contact Pria Nippak, Academic Coordinator, at [pnippak@ryerson.ca](mailto:pnippak@ryerson.ca).

Those who successfully complete this course series are eligible to earn a Professional Development Award from The G. Raymond Chang School of Continuing Education.

## Required Courses

- CHIM 301 Health Information Management: Healthcare Information Analysis
- CHIM 408 Health Information Management: Statistics for Health Services Managers
- CHSM 301 Health Services Management: The Healthcare Systems

The courses may be applied to the Health Studies certificate (see page 72 for more information) or to an applicable health-related certificate. Once you have successfully completed the courses, email The Chang School at [ce@ryerson.ca](mailto:ce@ryerson.ca) with your name, student number, and the course series you have completed. Upon verification, you will receive your Professional Development Award.



## HEALTH ETHICS

Students will be provided with opportunities for exploring and examining ethical considerations in health and healthcare systems.

For more information, contact Pria Nippak, Academic Coordinator, at [pnippak@ryerson.ca](mailto:pnippak@ryerson.ca).

Those who successfully complete this course series are eligible to earn a Professional Development Award from The G. Raymond Chang School of Continuing Education.

### Required Courses

Students may only select one of CPHL 302 or CPHL 509.

- CPHL 302 Philosophy: Ethics and Health Care
- CPHL 444 Philosophy: Ethics in Health Services Management
- CPHL 509 Philosophy: Bioethics
- CPHL 602 Philosophy: Health Policy: Ethics and Justice

The courses may be applied to the Health Studies certificate (see page 72 for more information) or to an applicable health-related certificate. Once you have successfully completed the courses, email The Chang School at [ce@ryerson.ca](mailto:ce@ryerson.ca) with your name, student number, and the courses series you have completed. Upon verification, you will receive your Professional Development Award.

## HEALTH INFORMATICS

Students will be introduced to the basic concepts of health informatics from both the information technology and health systems perspectives.

For more information, contact Pria Nippak, Academic Coordinator, at [pnippak@ryerson.ca](mailto:pnippak@ryerson.ca).

Those who successfully complete this course series are eligible to earn a Professional Development Award from The G. Raymond Chang School of Continuing Education.

### Required Courses (select three)

- CHIM 305 Health Information Management: Introduction to Health Informatics
- CHIM 306 Health Information Management: Healthcare Interoperability
- CHIM 307 Health Information Management: Human-Computer Interfaces in Healthcare
- CLAW 402 Law: Health Information Access and Privacy

The courses may be applied to the Health Studies certificate (see page 72 for more information) or to an applicable health-related certificate. Once you have successfully completed the courses, email The Chang School at [ce@ryerson.ca](mailto:ce@ryerson.ca) with your name, student number, and the course series you have completed. Upon verification, you will receive your Professional Development Award.



# HEALTH SERVICES MANAGEMENT

Students will be introduced to the basic principles of health services management.

For more information, contact Jim Tiessen, Academic Coordinator, at [jhtiessen@ryerson.ca](mailto:jhtiessen@ryerson.ca).

Those who successfully complete this course series are eligible to earn a Professional Development Award from The G. Raymond Chang School of Continuing Education.

## Required Courses

- CHSM 305 Health Services Management: The Management Cycle
- CHSM 306 Health Services Management: Management Leadership and Decision-Making
- CHSM 437 Health Services Management: Human Resources Management in Healthcare

The courses may be applied to the Health Studies certificate (see page 72 for more information) or to an applicable health-related certificate. Once you have successfully completed the courses, email The Chang School at [ce@ryerson.ca](mailto:ce@ryerson.ca) with your name, student number, and the course series you have completed. Upon verification, you will receive your Professional Development Award.

# THE HUMAN BODY

Mature working and non-working adults are increasingly aware of their need to learn, based on scientific evidence, how to transform their habits and lifestyles to meet the needs of their age and health situations when it comes to the human body. This course series provides the opportunity to educate adults about the human body and impacts to it, including the biology-based and chemistry-based science of food.

Each course in this series will explore the science underlying the human body and how to use the science to make informed life choices.

For more information, visit [ryerson.ca/ce/humanbody](http://ryerson.ca/ce/humanbody) or contact Costin Antonescu, Academic Coordinator, Biology, at [cantonescu@ryerson.ca](mailto:cantonescu@ryerson.ca), or Noel George, Academic Coordinator, Chemistry, at [n3george@ryerson.ca](mailto:n3george@ryerson.ca). You may also contact Anne-Marie Brinsmead, Program Director, Engineering, Architecture, and Science, at [a2brinsm@ryerson.ca](mailto:a2brinsm@ryerson.ca).

Those who successfully complete this course series are eligible to earn a Professional Development Award from The G. Raymond Chang School of Continuing Education.

## Required Courses

- CBLG 10A/B Biology: Anatomy and Physiology
- CKBG 100 Biology: Human Body Health Tools
- CKBG 110 Biology: The Science of Food Foundations
- CKBG 115 Biology: The Science of Supplements

Once you have successfully completed the courses, email The Chang School at [ce@ryerson.ca](mailto:ce@ryerson.ca) with your name, student number, and the course series you have completed. Upon verification, you will receive your Professional Development Award.



## IMMIGRATION AND SETTLEMENT STUDIES

This course series provides students with the knowledge and skills needed to serve immigrants and their families directly, create policy related to that service, or create a supportive workplace environment for diverse populations.

For more information about the Course Series in Immigration and Settlement Studies, please contact Amy Clements-Cortes, Academic Coordinator, Interdisciplinary Studies, at [cortesam@ryerson.ca](mailto:cortesam@ryerson.ca).

Those who successfully complete this course series are eligible to earn a Professional Development Award from The G. Raymond Chang School of Continuing Education.

### Required Courses (all available online via distance education)

- CINT 913 Interdisciplinary Studies: Issues of Migration
- CINT 914 Interdisciplinary Studies: Settlement Experiences
- CINT 915 Interdisciplinary Studies: Responses to Migration

### Electives (select one)

- CECN 640 Economics: The Economics of Immigration
- CGEO 691 Geography: Canadian Immigration: Patterns and Place
- CINT 905 Interdisciplinary Studies: Conflict Resolution in Community Services
- CMHR 600 Human Resources: Diversity and Inclusion in the Workplace
- CMHR 700 Human Resources: Cross-Cultural Dimensions of Organizational Behaviour
- CPSY 620 Psychology: Psychology of Immigration
- CPSY 941 Psychology: Cross Cultural Psychology
- CSOC 474 Sociology: Immigration, Borders and Belonging

Once you have successfully completed the courses, email The Chang School at [ce@ryerson.ca](mailto:ce@ryerson.ca) with your name, student number, and the course series you have completed. Upon verification, you will receive your Professional Development Award.

## INTERCULTURAL COMMUNICATION IN THE CANADIAN WORKPLACE (ICCW)

The Intercultural Communication in the Canadian Workplace (ICCW) course series is offered by the Workplace Communication in Canada (WCC) Program. The WCC Program offers on- and off-campus courses designed to help internationally and Canadian-trained individuals develop the intercultural communication and soft skills necessary for meaningful employment and career mobility in the Canadian labour market.

For further information and admission requirements, visit [ryerson.ca/ce/wcc](http://ryerson.ca/ce/wcc) or email [wcc@ryerson.ca](mailto:wcc@ryerson.ca).

Those who successfully complete this course series are eligible to earn a Professional Development Award from The G. Raymond Chang School of Continuing Education.

### Required Courses

- CDCE 305 Workplace Communication in Canada (WCC): Intro to Intercultural Communication
- CDCE 306 Workplace Communication in Canada (WCC): Managing Workplace Relationships
- CDCE 307 Workplace Communication in Canada (WCC): Working with Culturally Diverse Clients
- CDCE 308 Workplace Communication in Canada (WCC): Cross Cultural Teamwork

Once you have successfully completed the courses, email The Chang School at [ce@ryerson.ca](mailto:ce@ryerson.ca) with your name, student number, and the course series you have completed. Upon verification, you will receive your Professional Development Award.



## INTERDISCIPLINARY CONFLICT RESOLUTION AND TEAM BUILDING

This course series provides health and community services professionals and students with the knowledge and skills to work in interdisciplinary teams with a specific focus on understanding the nature of conflict and its root causes as well as team building. Students will explore a range of conflict resolution methods, approaches, and strategies. The relationship between conflict, conflict resolution, and issues of diversity will be addressed. The interpersonal skills and personal and professional values that impact on working in teams and the dynamics of an effective team will also be considered.

For more information, contact Amy Clements-Cortes, Academic Coordinator, at [cortesam@ryerson.ca](mailto:cortesam@ryerson.ca).

Those who successfully complete this course series are eligible to earn a Professional Development Award from The G. Raymond Chang School of Continuing Education.

### Required Courses

- CINT 905 Interdisciplinary Studies: Conflict Resolution in Community Services
- CINT 907 Interdisciplinary Studies: Team Work for Community Services

### Electives (select one)

- CINT 920 Interdisciplinary Studies: Community Collaborations
- CINT 921 Interdisciplinary Studies: Writing for Disability Activism
- CSWP 935 Social Work: Engaging Diverse Communities

Once you have successfully completed the courses, email The Chang School at [ce@ryerson.ca](mailto:ce@ryerson.ca) with your name, student number, and the course series you have completed. Upon verification, you will receive your Professional Development Award.



## INTERDISCIPLINARY STUDIES: COMMUNITY PARTNERSHIPS

This program provides health and community services professionals and students with the knowledge and skills to build interdisciplinary community partnerships and to understand the challenges of developing and sustaining partnerships. Through practical examples and case studies, students will develop community facilitation skills.

For more information, contact Amy Clements-Cortes, Academic Coordinator, at [cortesam@ryerson.ca](mailto:cortesam@ryerson.ca).

Those who successfully complete this course series are eligible to earn a Professional Development Award from The G. Raymond Chang School of Continuing Education.

### Required Courses

- CINT 917 Interdisciplinary Studies: Community Development
- CINT 920 Interdisciplinary Studies: Community Collaborations

Once you have successfully completed the courses, email The Chang School at [ce@ryerson.ca](mailto:ce@ryerson.ca) with your name, student number, and the course series you have completed. Upon verification, you will receive your Professional Development Award.

# INTERDISCIPLINARY STUDIES: INTERDISCIPLINARY PROGRAM MANAGEMENT

This program provides health and community services professionals and students with the knowledge and skills to plan and/or fundraise in various interdisciplinary team roles with a specific focus on healthcare managerial skills.

For more information, contact Amy Clements-Cortes, Academic Coordinator, at [cortesam@ryerson.ca](mailto:cortesam@ryerson.ca).

Those who successfully complete this course series are eligible to earn a Professional Development Award from The G. Raymond Chang School of Continuing Education.

## Required Courses

Students may only select one of CINT 904 or CINT 916.

- CINT 900 Interdisciplinary Studies: Program Planning and Evaluation Strategies
- CINT 904 Interdisciplinary Studies: Health Promotion and Community Development
- CINT 916 Interdisciplinary Studies: Introduction to Fundraising

Once you have successfully completed the courses, email The Chang School at [ce@ryerson.ca](mailto:ce@ryerson.ca) with your name, student number, and the course series you have completed. Upon verification, you will receive your Professional Development Award.

# INTERNATIONALLY TRAINED MEDICAL DOCTORS (ITMD) BRIDGING PROGRAM

The goal of this unique learning opportunity is to successfully integrate highly qualified, skilled, and experienced internationally trained medical doctors (ITMDs) into non-licensed healthcare employment. The program provides additional skills needed for participants to gain employment in health research, health informatics, data analysis, and health management positions in Canada as an alternative to medical doctor licensing.

For more information regarding the admission requirements and applying to the program, visit [ryerson.ca/ce/itmd](http://ryerson.ca/ce/itmd).

Those who successfully complete this course series are eligible to earn a Professional Development Award from The G. Raymond Chang School of Continuing Education.

## Required Courses

- CKHS 100 Internationally Trained Medical Doctors (ITMD): Health Research Methodology
- CKHS 110 Internationally Trained Medical Doctors (ITMD): Health Informatics and Data Management
- CKHS 120 Internationally Trained Medical Doctors (ITMD): Fund of PM for Health Professionals
- CKHS 140 Internationally Trained Medical Doctors (ITMD): Health Pro Comm and Ldshp Skills

Once you have successfully completed the courses, email The Chang School at [ce@ryerson.ca](mailto:ce@ryerson.ca) with your name, student number, and the course series you have completed. Upon verification, you will receive your Professional Development Award.

## Supplementary Course

The following course gives ITMDs the opportunity to further develop their learning and professional skills; however, it is not required for the Professional Development Award.

- CKHS 130 Internationally Trained Medical Doctors (ITMD): Practicum Placement



# THE INTERNET OF THINGS (IOT)

This program explores the technologies, architectures, and strategies for the streaming of IoT and how “always-on” data streams are managed, scaled, secured, and monetized around services, and solutions, and specifically on future connected cars, SMART cities, wearables, SMART home architectures and the Cloud, IoT analytics, IoT Open Source, connected virtual and augmented reality. Topics include emerging IoT technologies and monetization and value creation of IoT for economic prosperity and the social good.

For more information, contact Alex Ferworn, Academic Coordinator, at [aferworn@ryerson.ca](mailto:aferworn@ryerson.ca).

Those who successfully complete this course series are eligible to earn a Professional Development Award from The G. Raymond Chang School of Continuing Education.

## Required Courses

- CKCS 180 Computer Science: IoT 360 Connectivity to the World
- CKCS 181 Computer Science: Emerging IoT Technologies
- CKCS 182 Computer Science: IoT Monetization and Value Creation

Once you have successfully completed the courses, email The Chang School at [ce@ryerson.ca](mailto:ce@ryerson.ca) with your name, student number, and the course series you have completed. Upon verification, you will receive your Professional Development Award.

# IPHONE AND ANDROID APPLICATIONS DEVELOPER

In this program, the student will gain hands-on, experiential learning developing apps for Android cell phones and the iPhone, the two most popular and prominent mobile development platforms. The course series will teach Java programming for Android cell phones and Object-Oriented programming for iPhones for developing apps. There is no previous background required.

For more information, contact Alex Ferworn, Academic Coordinator, at [aferworn@ryerson.ca](mailto:aferworn@ryerson.ca).

Those who successfully complete this course series are eligible to earn a Professional Development Award from The G. Raymond Chang School of Continuing Education.

## Required Courses

- CKCS 185 Computer Science: Intro to Android Apps Development
- CKCS 186 Computer Science: Intro to iPhone Apps Development

Once you have successfully completed the courses, email The Chang School at [ce@ryerson.ca](mailto:ce@ryerson.ca) with your name, student number, and the course series you have completed. Upon verification, you will receive your Professional Development Award.





## LEADING AND PLANNING FOR PATIENT EXPERIENCE

This program is designed for healthcare practitioners who are committed to advancing patient experience in their organizational setting, while at the same time, optimizing their leadership and planning capacities. Participants will also practice and acquire a range of skills related to the healthcare system, patient experience, project management, and conflict resolution.

For more information, contact [cenurse@ryerson.ca](mailto:cenurse@ryerson.ca) or visit [ryerson.ca/ce/nursing](http://ryerson.ca/ce/nursing).

Those who successfully complete this course series are eligible to earn a Professional Development Award from The G. Raymond Chang School of Continuing Education.

### Required Course

- CVIN 150 Interdisciplinary Studies: Advancing the Patient Experience

### Electives (select two)

- CHSM 301 Health Services Management: The Healthcare Systems
- CINT 905 Interdisciplinary Studies: Conflict Resolution in Community Services
- CTEC 210 Technology Studies: Fundamentals of Project Management
- CVNU 360 Nursing: Advanced Leadership and Management

### Note to course series students

#### Required Courses

CVNU 361 deleted.

CVIN 150 added.

#### Electives

CKPM 202 deleted.

CTEC 210 added.

Once you have successfully completed the courses, email The Chang School at [ce@ryerson.ca](mailto:ce@ryerson.ca) with your name, student number, and the course series you have completed. Upon verification, you will receive your Professional Development Award.

## LEAN SIX SIGMA AND SUSTAINABLE INDUSTRY ENTERPRISE

### Formerly: Sustainability Management and Enterprise Process Excellence

This course series provides individuals the competencies to promote sustainability by prioritizing, deploying, and implementing best practices with proven techniques, including Lean Six Sigma, to execute vital strategic plans in private and public enterprise. Individuals will come away with the ability to generate organizational transformation, resulting in eco-efficiency, innovative products and services, and engaged communities, all while gaining competitive advantage globally. They will also possess systems-thinking, decision-making, and consensus-building abilities to maximize their organizations' impacts.

For more information, visit [ryerson.ca/ce/sustain](http://ryerson.ca/ce/sustain) or contact Saeed Nejatian, Academic Coordinator, at [snejatian@ryerson.ca](mailto:snejatian@ryerson.ca).

Those who successfully complete this course series are eligible to earn a Professional Development Award from The G. Raymond Chang School of Continuing Education.

### Required Courses (select three)

- CKSS 100 Sustainability Management: Fundamentals in Sustainability I
- CKSS 101 Sustainability Management: Fundamentals in Sustainability II
- CKSS 210 Sustainability Management: Lean Six Sigma Contin Improvement
- CKSS 211 Sustainability Management: Lean Six Sigma Sust Bus Enterprise

These courses may be applied to the Sustainability Management and Enterprise Process Excellence certificate (see page 112 for more information). Once you have successfully completed the courses, email The Chang School at [ce@ryerson.ca](mailto:ce@ryerson.ca) with your name, student number, and the course series you have completed. Upon verification, you will receive your Professional Development Award.



## MARKETING INNOVATION

Canada's competitiveness in the world depends on the ability to innovate. Having a good idea is not enough to be successful and there are specialized skills required to bring a new product or service to market. This program is for students interested in the development and marketing of new products and services.

For more information, contact Armand Gervais, Academic Coordinator, at [agervais@ryerson.ca](mailto:agervais@ryerson.ca).

Those who successfully complete this course series are eligible to earn a Professional Development Award from The G. Raymond Chang School of Continuing Education.

### Required Courses

- CMKT 300 Marketing: Marketing Metrics and Analysis
- CMKT 400 Marketing: Understanding Consumers and the New Media
- CMKT 730 Marketing: Assessing/Managing Market Opportunities

### Electives (select one)

- CMKT 500 Marketing: Marketing Research
- CMKT 510 Marketing: Innovations in Marketing
- CMKT 723 Marketing: Marketing in the Service Industry
- CMKT 731 Marketing: Competitive Intelligence

The courses may be applied to the Strategic Marketing certificate (see page 110 for more information). Once you have successfully completed the courses, email The Chang School at [ce@ryerson.ca](mailto:ce@ryerson.ca) with your name, student number, and the course series you have completed. Upon verification, you will receive your Professional Development Award.

## MARKETING RESEARCH

This program provides various techniques to measure marketing performance in organizations; it introduces the use of theories of social sciences and metrics to allow marketers to understand, analyze, and respond to consumer needs in the digital age. Students will learn how to effectively prepare, analyze, and interpret large databases and use both qualitative and quantitative tools to make strategic and sound marketing decisions.

For more information, contact Armand Gervais, Academic Coordinator, at [agervais@ryerson.ca](mailto:agervais@ryerson.ca).

Those who successfully complete this course series are eligible to earn a Professional Development Award from The G. Raymond Chang School of Continuing Education.

### Required Courses

Students may only select one of CMKT 400 or CMKT 700.

- CMKT 300 Marketing: Marketing Metrics and Analysis
- CMKT 400 Marketing: Understanding Consumers and the New Media
- CMKT 500 Marketing: Marketing Research
- CMKT 700 Marketing: Business Intelligence/Decision Modeling

The courses may be applied to the Strategic Marketing certificate (see page 110 for more information). Once you have successfully completed the courses, email The Chang School at [ce@ryerson.ca](mailto:ce@ryerson.ca) with your name, student number, and the course series you have completed. Upon verification, you will receive your Professional Development Award.



# PATIENT SAFETY AND NURSING INFORMATICS

This program blends the concepts of nursing informatics as a specialty nursing practice and its impact on promoting safe patient care within the context of clinical information and technology. The program will be of interest to nurses who are seeking to broaden their frontline and leadership experience and expertise in nursing informatics.

For more information, contact [cenurse@ryerson.ca](mailto:cenurse@ryerson.ca) or visit [ryerson.ca/ce/nursing](http://ryerson.ca/ce/nursing).

Those who successfully complete this course series are eligible to earn a Professional Development Award from The G. Raymond Chang School of Continuing Education.

## Required Courses

- CHSM 301 Health Services Management: The Healthcare Systems
- CVNU 322 Nursing: Computer and Information Management in Nursing
- CVNU 325 Nursing: Nursing Inform and Patient Safety

Once you have successfully completed the courses, email The Chang School at [ce@ryerson.ca](mailto:ce@ryerson.ca) with your name, student number, and the course series you have completed. Upon verification, you will receive your Professional Development Award.

# INTRODUCTION TO PRIVACY, ACCESS, AND INFORMATION MANAGEMENT

In our current data-driven economy, the rapid proliferation of emerging technologies poses significant implications with the regard to the protection of personal data and access to information. This program equips learners from all sectors with the foundational knowledge and skills needed to navigate the complex and often unpredictable world of privacy and access.

For more information, contact Melissa Johnson, Program Coordinator, at [m1johnso@ryerson.ca](mailto:m1johnso@ryerson.ca).

Those who successfully complete this course series are eligible to earn a Professional Development Award from The G. Raymond Chang School of Continuing Education.

## Required Courses

- CLAW 401 Law: Information Access and Privacy Protection
- CZIT 427 Information Technology Management: Data and Info. Mgmt for Privacy
- CZLW 327 Law: Privacy By Design

The courses may be applied to the Privacy, Access, and Information Management certificate (see page 92 for more information). Once you have successfully completed the courses, email The Chang School at [ce@ryerson.ca](mailto:ce@ryerson.ca) with your name, student number, and the course series you have completed. Upon verification, you will receive your Professional Development Award.



# PROFESSIONAL HEALTHCARE CAREERS FOUNDATIONS

This program is designed to assist individuals in meeting their academic degree course requirements in order to apply for entrance to healthcare career professional schools, namely medical school, veterinary school, dentistry school, pharmacy school, midwifery school, physical therapy school, optometry school, osteopathy school, podiatry school, speech pathology, and graduate programs including environmental biology and biomedical sciences/engineering.

For more information, contact Anne-Marie Brinsmead, Program Director, Engineering, Architecture, and Science, at [a2brinsm@ryerson.ca](mailto:a2brinsm@ryerson.ca).

Those who successfully complete this course series are eligible to earn an Academic Achievement Award from The G. Raymond Chang School of Continuing Education.

## Course Prerequisites

Successful completion of all stated prerequisites is required for registration in a course. Students who register in a course without successful completion of the prerequisites will be required to withdraw.

## Required Courses (select three)

### Biology Stream

- CBLG 10A/B Biology: Anatomy and Physiology
- CBLG 143 Biology: Biology I
- CBLG 144 Biology: Biology II
- CBLG 151 Biology: Microbiology I
- CBLG 311 Biology: Cell Biology

### Chemistry Stream

Students who wish to pursue CKCH 113 must also select CKCH 107 as together these courses are equivalent to CHY 113.

Students who wish to pursue CKCH 142 must also select CKCH 143 as together these courses are equivalent to CHY 142.

Students who wish to pursue CKCH 225 must also select CKCH 227 as together these courses are equivalent to BCH 261.

- CCHY 103 Chemistry: General Chemistry I
- CCHY 242 Chemistry: Organic Chemistry II
- CCHY 381 Chemistry: Physical Chemistry I
- CKCH 107 Chemistry: General Chemistry Laboratory
- CKCH 113 Chemistry: General Chemistry II
- CKCH 142 Chemistry: Organic Chemistry I
- CKCH 143 Chemistry: Organic Chemistry Laboratory
- CKCH 225 Chemistry: Biochemistry I
- CKCH 227 Chemistry: Biochemistry Laboratory I

### Math and Physics Stream

- CMTH 125 Mathematics: Mathematics for Professional Programs
- CMTH 131 Mathematics: Modern Mathematics I
- CMTH 207 Mathematics: Calculus and Computational Methods I
- CMTH 231 Mathematics: Modern Mathematics II
- CMTH 304 Mathematics: Probability and Statistics I
- CMTH 310 Mathematics: Calculus and Computational Methods II
- CMTH 404 Mathematics: Probability and Statistics II
- CPCS 110 Physics: Physics
- CPCS 120 Physics: Physics I
- CPCS 130 Physics: Physics II

Once you have successfully completed the courses, email The Chang School at [ce@ryerson.ca](mailto:ce@ryerson.ca) with your name, student number, and the course series you have completed. Upon verification, you will receive your Academic Achievement Award.



# PROJECT MANAGEMENT

This course series will assist students who are interested in starting or transitioning to a project management career and project managers who need professional development units (PDUs) to maintain their professional credentials.

For more information, visit [ryerson.ca/ce/pm](http://ryerson.ca/ce/pm) or contact Anne-Marie Brinsmead, Program Director, Engineering, Architecture, and Science, at [a2brinsm@ryerson.ca](mailto:a2brinsm@ryerson.ca).

Those who successfully complete this course series are eligible to earn a Professional Development Award from The G. Raymond Chang School of Continuing Education.

## Required Courses (select three)

Students select a total of three courses from one or more of the three streams.

### *Project Management Foundation Stream*

These courses cover the fundamentals of project management, planning and scheduling, and project management systems (Microsoft Project).

- CKPM 203 Project Management: Planning and Scheduling
- CKPM 207 Project Management: Project Management Systems
- CTEC 210 Technology Studies: Fundamentals of Project Management

### *Project Management Practitioner Stream*

These courses focus on managing risk and quality, as well as leading teams.

- CKPM 209 Project Management: Project Risk and Quality Management
- CKPM 211 Project Management: Leadership in Project Management
- CTEC 210 Technology Studies: Fundamentals of Project Management

### *Agile Project Management Stream*

To cater to entrepreneurial and digital environments, these courses present agile and emerging trends in project management.

- CKPM 215 Project Management: Emerging Trends in Project Management
- CKPM 217 Project Management: Agile Project Management
- CTEC 210 Technology Studies: Fundamentals of Project Management

## Note to course series students

### *Project Management Foundation Stream*

CKPM 202 deleted.  
CTEC 210 added.

### *Project Management Practitioner Stream*

CKPM 202 deleted.  
CTEC 210 added.

### *Agile Project Management Stream*

CKPM 202 deleted.  
CTEC 210 added.

The courses may be applied to the Project Management certificate (see page 94 for more information). Once you have successfully completed the courses, email The Chang School at [ce@ryerson.ca](mailto:ce@ryerson.ca) with your name, student number, and the course series you have completed. Upon verification, you will receive your Professional Development Award.

## RESEARCH METHODOLOGIES AND PROGRAM EVALUATION

This program offers an introduction to quantitative and qualitative research methodologies from anti-oppression, anti-colonial, and anti-racism perspectives to social work students and community practitioners. Using these perspectives, participants will also acquire the skills necessary to design and evaluate social programs and their own practice.

For more information, contact Dalia Hanna, Program Director, Community Services, at [dhanna@ryerson.ca](mailto:dhanna@ryerson.ca).

Those who successfully complete this course series are eligible to earn a Professional Development Award from The G. Raymond Chang School of Continuing Education.

### Required Courses

- CSWP 538 Social Work: Social Work Research: Part I
- CSWP 638 Social Work: Social Work Research: Part II
- CSWP 932 Social Work: Evaluating Social Work Practices

Once you have successfully completed the courses, email The Chang School at [ce@ryerson.ca](mailto:ce@ryerson.ca) with your name, student number, and the course series you have completed. Upon verification, you will receive your Professional Development Award.

## RETAIL BUYING

Students will examine the role of the buyer, the procurement process, and merchandise management. An exploration of in-store design, layout, and display options using space planning software will also be covered.

For more information, visit [ryerson.ca/ce/retail](http://ryerson.ca/ce/retail) or contact Sean Sedlezky, Academic Coordinator, at [ssedlezk@ryerson.ca](mailto:ssedlezk@ryerson.ca).

Those who successfully complete this course series are eligible to earn a Professional Development Award from The G. Raymond Chang School of Continuing Education.

### Required Courses

Students may only select one of CRMG 806 or CRMG 909.

- CRMG 400 Retail Management: Buying Process I
- CRMG 452 Retail Management: Visual Merchandising and Space Planning
- CRMG 806 Retail Management: Retailer Perspectives on Category Management
- CRMG 909 Retail Management: Advanced Buying Process II

### Note to course series students

CRMG 806 added.

These courses may be applied to the Retail Management certificate (see page 105 for more information). Once you have successfully completed the courses, email The Chang School at [ce@ryerson.ca](mailto:ce@ryerson.ca) with your name, student number, and the course series you have completed. Upon verification, you will receive your Professional Development Award.



## RETAIL OPERATIONS

Students will examine a variety of systems relevant to the retail environment through case studies and online discussions. Other topics will include teamwork, employee motivation, retail metrics, and meeting consumers' needs.

For more information, contact [ryerson.ca/ce/retail](http://ryerson.ca/ce/retail) or contact Sean Sedlezky, Academic Coordinator, at [ssedlezk@ryerson.ca](mailto:ssedlezk@ryerson.ca).

Those who successfully complete this course series are eligible to earn a Professional Development Award from The G. Raymond Chang School of Continuing Education.

### Required Courses

- CRMG 301 Retail Management: Retail Operations Management
- CRMG 303 Retail Management: Service Quality Management
- CRMG 925 Retail Management: Leading in Retail Service Organizations

These courses may be applied to the Retail Management certificate (see page 105 for more information). Once you have successfully completed the courses, email The Chang School at [ce@ryerson.ca](mailto:ce@ryerson.ca) with your name, student number, and the course series you have completed. Upon verification, you will receive your Professional Development Award.

## SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS (STEM)

In today's world, if aspiring and existing professionals in Science, Technology, Engineering, and Mathematics (STEM) wish to survive and thrive, they must continually redefine themselves and invest in their professional longevity by becoming more career-ready, more responsive to the demands of STEM employers and the rapidly changing labour market needs, more current and resilient, and more flexible and dynamic. In doing so, they will, in turn, benefit any STEM organization where they work, be it in business, government, government-business enterprise, or in research and not-for-profit.

For more information, contact Anne-Marie Brinsmead, Program Director, Engineering, Architecture, and Science, at [a2brinsm@ryerson.ca](mailto:a2brinsm@ryerson.ca).

**This course series is composed of three courses: one required course and two electives (from any of the seven elective streams).**

Those who successfully complete this course series are eligible to earn a Professional Development Award from The G. Raymond Chang School of Continuing Education.

### Required Courses (select one)

- CDCE 305 Workplace Communication in Canada (WCC): Intro to Intercultural Communication
- CDCE 306 Workplace Communication in Canada (WCC): Managing Workplace Relationships
- CDCE 307 Workplace Communication in Canada (WCC): Wking with Culturally Diverse Clients
- CDCE 308 Workplace Communication in Canada (WCC): Cross Cultural Teamwork
- CENT 500 Entrepreneurship: New Venture Startup
- CENT 526 Entrepreneurship: Entrepreneurial Behaviour and Strategy
- CENT 601 Entrepreneurship: Identifying Opportunities

### Electives (select two)

#### *Emergency Management*

- CSCI 232 Science: Incident and Operations Management
- CSCI 241 Science: Planning for Emergency Management

#### *Environmental Science Management and Science*

- CKES 120 Environmental Sciences: Environmental and Atmospheric Processes
- CKES 170 Environmental Sciences: Water Treatment
- CKES 180 Environmental Sciences: Site Assessment
- CKES 210 Environmental Sciences: Applied Environmental Analysis
- CKES 220 Environmental Sciences: Environmental Law and Practice

**Information Technology**

- CCPS 109 Computer Science: Computer Science I
- CCPS 305 Computer Science: Data Structures
- CCPS 311 Computer Science: Object Oriented Programming and Design
- CCPS 393 Computer Science: Introduction to C and UNIX
- CKCS 160 Computer Science: CEH and CCE Comp Sec Exam Prep
- CKCS 230 Computer Science: Intro to SOLIDWORKS for 3-D Printing
- CKCS 231 Computer Science: Product 3-D Animation/Rendering
- CKCS 232 Computer Science: 3-D Printing: Agile Prototyping
- CKCS 233 Computer Science: Product Design for 3-D Printing
- CKCS 234 Computer Science: Product Drawing for 3-D Printing
- CKDF 110 Computer Security and Digital Forensics: Computer Network Security
- CKDF 120 Computer Security and Digital Forensics: Computer Cryptography and Digital Steganography
- CKDF 130 Computer Security and Digital Forensics: Digital Forensics Systems
- CKDF 140 Computer Security and Digital Forensics: Security Architecture and Design
- CKDF 145 Computer Security and Digital Forensics: Certified Information Systems Security Professional (CISSP)
- CKRE 110 Robotics and Embedded Systems: Digital Logic and Hardware Architecture
- CKRE 120 Robotics and Embedded Systems: Programming Robotics Systems
- CKRE 130 Robotics and Embedded Systems: Embedded Systems Hardware Architecture and Implementation
- CMTH 304 Mathematics: Probability and Statistics I
- CMTH 404 Mathematics: Probability and Statistics II
- CMTH 642 Mathematics: Data Analytics: Advanced Methods
- CSCI 130 Science: Mobile Robotic Devices Embedded Systems
- CSCI 230 Science: Emergency Management Practice
- CSCI 243 Science: Continuity and Risk Management
- CZLW 120 Law: Law for Forensics Professionals

**Lean Six Sigma Enterprise Continuity and Excellence and Sustainability**

- CKSS 100 Sustainability Management: Fundamentals in Sustainability I
- CKSS 101 Sustainability Management: Fundamentals in Sustainability II
- CKSS 210 Sustainability Management: Lean Six Sigma Contin Improvement
- CKSS 211 Sustainability Management: Lean Six Sigma Sust Bus Enterprise
- CKSS 212 Sustainability Management: Lean Six Sigma Quality Assurance

**Mathematics**

- CMTH 500 Mathematics: Introduction to Stochastic Processes
- CMTH 501 Mathematics: Numerical Analysis I
- CMTH 600 Mathematics: Computational Methods In Mathematics
- CMTH 700 Mathematics: Financial Mathematics I
- CMTH 800 Mathematics: Financial Mathematics II

**Organization Operations**

- CKMT 104 Mathematics: FRM Level I Exam Prep
- CSCI 234 Science: Analysis of Critical Incidents

**Science**

- CBLG 143 Biology: Biology I
- CBLG 144 Biology: Biology II
- CBLG 151 Biology: Microbiology I
- CBLG 699 Biology: Social Factors in Drug Development
- CCHY 103 Chemistry: General Chemistry I
- CCHY 183 Chemistry: Introduction to Forensic Sciences
- CCHY 242 Chemistry: Organic Chemistry II
- CCHY 381 Chemistry: Physical Chemistry I
- CCHY 583 Chemistry: Alternative Energies
- CKCH 107 Chemistry: General Chemistry Laboratory
- CKCH 113 Chemistry: General Chemistry II
- CKCH 142 Chemistry: Organic Chemistry I
- CKCH 143 Chemistry: Organic Chemistry Laboratory
- CKCH 216 Chemistry: Analytical Chemistry I
- CKCH 217 Chemistry: Analytical Chemistry Laboratory I
- CKCH 223 Chemistry: Analytical Chemistry II
- CKCH 224 Chemistry: Analytical Chemistry Laboratory II
- CKCH 227 Chemistry: Biochemistry Laboratory I
- CKES 190 Environmental Sciences: Renewable Energy and Green Technology
- CPCS 111 Physics: Physics in the News
- CPCS 120 Physics: Physics I
- CPCS 130 Physics: Physics II
- CPCS 181 Physics: Introduction to Astronomy
- CPCS 182 Physics: Life in the Milky Way Galaxy
- CPCS 581 Physics: Advanced Topics in Astronomy

**Note to course series students****Electives – Emergency Management**

CKDM 120 and CKDM 140 deleted.  
CSCI 232 and CSCI 241 added.

**Electives – Information Technology**

CKDM 100 and CKDM 150 deleted.  
CSCI 230 and CSCI 243 added.

**Electives – Organization Operations**

CKDM 130 and CKME 700 deleted.  
CSCI 234 added.

Once you have successfully completed the courses, email The Chang School at [ce@ryerson.ca](mailto:ce@ryerson.ca) with your name, student number, and the course series you have completed. Upon verification, you will receive your Professional Development Award.



## SCIENTIFIC RESEARCH POLICY AND ETHICS

This program will provide adult professionals in the scientific, professional, and technical sector and recent MSc and PhD graduates of science-based programs with the foundational and functional knowledge of science policy drug development regulation, clinical trials practice, scientific project oversight, intellectual property, and/or scientific and medical ethics required in order to advance to a professional leadership position. This course series will have open admissions, in consultation with the academic coordinator, and will attract a range of working professionals who wish to meet the needs of employers across the private, public, and nonprofit sectors.

For more information, contact Constin Antonescu, Academic Coordinator, at [cantonescu@ryerson.ca](mailto:cantonescu@ryerson.ca).

Those who successfully complete this course series are eligible to earn a Professional Development Award from The G. Raymond Chang School of Continuing Education.

### Required Courses (select three)

- CIND 123 Industrial Engineering: Data Analytics: Basic Methods
- CKBG 120 Biology: Drug Development Regulations
- CKBG 125 Biology: Science and Gov Policy Dev
- CKBG 130 Biology: Clinical Research and Trials
- CKBG 135 Biology: Pharma Project Best Practices
- CKBG 140 Biology: Intellectual Property in Science
- CPHL 509 Philosophy: Bioethics

Once you have successfully completed the courses, email The Chang School at [ce@ryerson.ca](mailto:ce@ryerson.ca) with your name, student number, and the course series you have completed. Upon verification, you will receive your Professional Development Award.



## SOCIAL MEDIA MARKETING

Marketing communications is in a state of transformation. This program is for students who want to learn more about how marketers can incorporate social media into their marketing plans and measure its impact; it integrates marketing metrics, marketing communications, and consumer behaviour.

For more information, contact Armand Gervais, Academic Coordinator, at [agervais@ryerson.ca](mailto:agervais@ryerson.ca).

Those who successfully complete this course series are eligible to earn a Professional Development Award from The G. Raymond Chang School of Continuing Education.

### Required Courses

- CMKT 300 Marketing: Marketing Metrics and Analysis
- CMKT 400 Marketing: Understanding Consumers and the New Media
- CMKT 510 Marketing: Innovations in Marketing

The courses may be applied to the Strategic Marketing certificate (see page 110 for more information). Once you have successfully completed the courses, email The Chang School at [ce@ryerson.ca](mailto:ce@ryerson.ca) with your name, student number, and the course series you have completed. Upon verification, you will receive your Professional Development Award.

## SOCIAL MEDIA PRACTICES AND REPUTATION MANAGEMENT

A social media presence enables senior management to share their perspectives with wider audiences, both external and internal, and garner reputational benefits from being online. Preparation for social media participation includes identifying the goals of social participation, selecting the right social platform, minimizing the risk of participation, and guiding the social conversation.

For more information, contact Nick Douloff, Academic Coordinator, Public Relations, at [ndouloff@ryerson.ca](mailto:ndouloff@ryerson.ca).

Those who successfully complete this course series are eligible to earn a Professional Development Award from The G. Raymond Chang School of Continuing Education.

### Required Courses

- CDPR 100 Public Relations: Public Relations Principles
- CDPR 108 Public Relations: Social Media in Public Relations
- CDPR 110 Public Relations: Reputation Management

These courses may be applied to the Public Relations certificate (see page 102 for more information). Once you have successfully completed the courses, email The Chang School at [ce@ryerson.ca](mailto:ce@ryerson.ca) with your name, student number, and the course series you have completed. Upon verification, you will receive your Professional Development Award.

## SPORTS MARKETING

This program is for students who wish to build an understanding in the sports marketing industry. While equipping students with metrics and analytical tools to effectively analyze the sport market, the program also adopts an applied approach of marketing theories and principles in the sports industry. Topics covered will include national and/or international sports sponsorship, branding, promotional events, media distribution, and financial management.

For more information, contact Armand Gervais, Academic Coordinator, at [agervais@ryerson.ca](mailto:agervais@ryerson.ca).

Those who successfully complete this course series are eligible to earn a Professional Development Award from The G. Raymond Chang School of Continuing Education.

### Required Courses

Students may only select one of CMKT 504 or CMKT 829.

- CMKT 300 Marketing: Marketing Metrics and Analysis
- CMKT 504 Marketing: Effective Persuasion
- CMKT 828 Marketing: Sport Marketing Concepts and Strategy
- CMKT 829 Marketing: International Sport Marketing

The courses may be applied to the Strategic Marketing certificate (see page 110 for more information). Once you have successfully completed the courses, email The Chang School at [ce@ryerson.ca](mailto:ce@ryerson.ca) with your name, student number, and the course series you have completed. Upon verification, you will receive your Professional Development Award.



# SURVIVAL IN URBAN DISASTERS AND EMERGENCIES

This course series provides individuals the opportunity to attain functional proficiency in responding to and aiding workers and citizens in urban settings compromised by a disaster or emergency where support systems are limited or are non-existent. Competencies acquired in-class and through survival simulation activities include, but are not limited to, planning for urban survival, long-term survival strategies, expedient shelters, water, fire, heat, light and food access, safety, security and protection, navigating by day/night, hazards and threats, recovery on-the-ground, and the psychology of survival.

For more information, contact Alex Ferworn, Academic Coordinator, at [aferworn@ryerson.ca](mailto:aferworn@ryerson.ca).

Those who successfully complete this course series are eligible to earn a Professional Development Award from The G. Raymond Chang School of Continuing Education.

## Required Courses (select three)

- CSCI 230 Science: Emergency Management Practice
- CSCI 232 Science: Incident and Operations Management
- CSCI 234 Science: Analysis of Critical Incidents
- CSCI 243 Science: Continuity and Risk Management

## Note to course series students

Effective Fall 2017, the Course Series in Survival in Urban Disasters and Emergencies has been revised.

These courses may be applied to the Disaster and Emergency Management certificate (see page 46 for more information). Once you have successfully completed the courses, email The Chang School at [ce@ryerson.ca](mailto:ce@ryerson.ca) with your name, student number, and the course series you have completed. Upon verification, you will receive your Professional Development Award.



# URBAN AGRICULTURE

In order to help students develop their skills and capacity to address global problems, specifically those related to the current global food crisis and climate change, an urban agriculture course series has been developed as part of the elective offerings of The Chang School's Certificate in Food Security.

Students who complete this course series will gain in-depth knowledge of the technical aspects of urban agriculture as well as the policy dimensions and governance issues that must be taken into account in the development of effective urban agriculture systems.

For more information about the Urban Agriculture course series, contact Reg Noble, Academic Coordinator, Food Security, at [food@ryerson.ca](mailto:food@ryerson.ca).

Those who successfully complete this course series are eligible to earn a Professional Development Award from The G. Raymond Chang School of Continuing Education.

## Required Courses

(all available via distance education)

- CVFN 410 Food Security: Understanding Urban Agriculture
- CVFN 411 Food Security: Dimensions of Urban Agriculture
- CVFN 412 Food Security: Urban Agriculture Types
- CVFN 413 Food Security: Urban Agriculture Policy-Making

Once you have successfully completed the courses, email The Chang School at [ce@ryerson.ca](mailto:ce@ryerson.ca) with your name, student number, and the course series you have completed. Upon verification, you will receive your Professional Development Award.

*Note: These courses have been developed in partnership with ETC-Urban Agriculture (ETC-UA) and the international network of Resource Centres on Urban Agriculture and Food Security (RUAf).*

# WORKPLACE COMMUNICATION IN CANADA (WCC)

The Workplace Communication in Canada (WCC) Program's goal is to maximize the employability and leverage preparedness for professional bridging programs of internationally educated professionals by implementing the following:

- a competency-based curriculum (using detailed performance indicators)
- a workplace-focused curriculum (materials developed in partnership with pan-professional and subject-matter experts)
- an experiential curriculum (using role plays, simulations with actors, workplace scenarios, debate clubs, and group work)

For further information and admission requirements, visit [ryerson.ca/ce/wcc](http://ryerson.ca/ce/wcc) or email [wcc@ryerson.ca](mailto:wcc@ryerson.ca).

Those who successfully complete this course series are eligible to earn a Professional Development Award from The G. Raymond Chang School of Continuing Education.

## Required Courses (select four)

- CDCE 310 Workplace Communication in Canada (WCC): Formal and Informal Communication in the Workplace
- CDCE 320 Workplace Communication in Canada (WCC): Advanced Customer Focused Applications
- CDCE 330 Workplace Communication in Canada (WCC): Effective Persuasion and Public Speaking
- CDCE 340 Workplace Communication in Canada (WCC): Teamwork and Organizational Behaviour
- CDCE 910 Workplace Communication in Canada (WCC): Effective Oral Communication

Once you have successfully completed the courses, email The Chang School at [ce@ryerson.ca](mailto:ce@ryerson.ca) with your name, student number, and the course series you have completed. Upon verification, you will receive your Professional Development Award.

