

## COMPUTER PROGRAMMER ANALYST PROGRAM (T127)

<b>PROGRAM NAME</b>	Computer Programmer Analyst	<b>TUITION</b>	\$3,859.00 *
<b>COURSE CODE</b>	T127	<b>ADDITIONAL COST</b>	
<b>SCHOOL</b>	School of Computer Technology	*Amounts listed are the total of tuition, materials, student service and ancillary fees for the first two semesters of programs starting in fall 2015. Fees are subject to change for programs starting in fall 2016 and at later dates.	
<b>CENTRE</b>	Arts, Design and Information Technology	<b>International students:</b> Visit the International Fees and Related Costs <sup>2</sup> page for more information.	
<b>LOCATION</b>	Casa Loma Campus		
<b>DURATION</b>	3 years (6 semesters)		
<b>STARTING MONTH</b>	September, January		
<b>CREDENTIAL</b>	Ontario College Advanced Diploma		
<b>YEAR OF STUDY</b>	2016-2017		
<b>METHOD OF STUDY</b>	FT		
<b>APPLY TO</b>	Ontario Colleges <sup>1</sup>		

Today, few organizations make any major plans without thoroughly understanding the IT implications. IT professionals are a key part of decision-making business teams. George Brown College answers this need with its three-year (six-semester) Computer Programmer Analyst program. The broad education in programming and IT analysis that it offers can provide you with a stable platform for career growth in the rapidly expanding and ever-changing world of information technology.

During the first two years of the program you will develop the skills and techniques required for software application development and testing. The industry tells us they are looking for “the total package.” So the third year includes advanced technical skills in areas such as systems analysis and design techniques – and continues to develop communications, teamwork and other client service skills such as needs assessment, sales and presentation methods.

George Brown offers other distinct advantages:

- Students are involved in project-based and experiential learning.
- In the third year, students are exposed to the fast-growing game development sector.
- Students are also exposed to mobile application development using the latest mobile devices.

\*If you enrol in January, you must complete semester 2 in the summer, May to August, in the same year.

Note: In this rapidly changing industry, program improvements are being made on an ongoing basis, which may result in course changes. Changes are made in consultation with our Program Advisory Committee, which is composed of academic staff and industry representatives from small, medium-sized and large corporations.

### PROGRAM STANDARDS AND LEARNING OUTCOMES

Each George Brown College certificate, diploma, advanced diploma and graduate certificate program is expected to deliver specific program learning outcomes. Program learning outcomes are statements that describe the knowledge and skills that students are expected to demonstrate by the end of their program of study. Programs are designed to deliver both vocation or discipline-specific learning outcomes and more generic essential employability skills (including communication, numeracy, critical thinking and problem solving, information management, interpersonal and personal skills).

In addition to the aforementioned learning outcome requirements, College programs are required to provide students with exposure to a breadth of learning beyond their vocational field, to increase their awareness of the society and culture in which they live and work. This breadth requirement is addressed through additional mandatory General Education courses in the program curriculum.

To see the relevant program learning outcomes for your specific program of study, please visit [georgebrown.ca/programs/learning-standards-and-outcomes](http://georgebrown.ca/programs/learning-standards-and-outcomes)

### REQUIRED COURSES

#### SEMESTER 1

Code	Course name
COMP1151	IT Essentials
COMP1176	Introduction to Networks - CCNA I
COMP1223	Web Development Fundamentals
GSSC1045	Business Applications for Information Technology
MATH1162	Mathematics for Computer Technology I
COMM1007	College English**

#### SEMESTER 2

Code	Course name
COMP1168	Database Management
COMP1202	Object-Oriented Programming
COMP1231	Web Programming
COMP1232	Operating System Installation and Support
MATH1172	Mathematics for Computer Technology II
GSSC1027	Personal Finance

#### SEMESTER 3

Code	Course name
COMP1230	Advanced Web Programming
COMP2129	Advanced Object-Oriented Programming
COMP2130	Application Development using Java
COMP2147	Systems Analysis, Design and Testing
COMM2148	Technical Writing and Professional Portfolio Development
GNED	General Education Elective

**SEMESTER 4**

Code	Course name
COMP2080	Data Structures and Algorithms
COMP2151	Agile Software Development
COMP2138	Advanced Database Development
COMP2139	Web Application Development
COMP2152	Open Source Development
GNED	General Education Elective

**SEMESTER 5**

Code	Course name
COMP3095	Web Application Development using Java
COMP3059	Capstone Project I
COMP3061	Computer Security Fundamentals
COMP3064	Game Development
COMP3075	Report Design & Implementation
COMP3074	Mobile Application Development I

**SEMESTER 6**

Code	Course name
COMP3060	Linux Fundamentals
COMP3065	Business Intelligence
COMP3078	Capstone Project II
COMP3097	Mobile Application Development II
COMP3080	Emerging Technologies

\*\*Based on the results of your placement test, you may be required to take COMM1003 (English Skills) or CESL1003 (English Skills – ESL) before progressing to COMM1007. COMM1003/CESL1003 does not count as a course required for graduation, and you will be charged for this extra course. Please visit <http://assessment.georgebrown.ca> for more information.

**YOUR CAREER**

Graduates can look forward to career opportunities such as:

- Database administration
- Systems analysis and design
- Consulting
- Application design and development
- Internet application design and development
- And many others

Opportunities exist for systems development for both corporate clients and smaller contract companies.

As programmer analysts, graduates will work in project teams responsible for the development of new applications and the maintenance of existing business systems.

**FUTURE STUDY OPTIONS**

Students who successfully complete this program may qualify for entry into Ontario college graduate certificates and university degree programs at institutions such as McMaster University, University of Guelph and Northern Alberta Institution of Technology.

For further information, see [georgebrown.ca/transferguide](http://georgebrown.ca/transferguide)

**ADMISSION REQUIREMENTS**

Applicants are selected on the basis of their academic achievement, including the required courses, and any other selection criteria outlined below.

- Ontario Secondary School Diploma or equivalent\*\*
- Grade 12 English (C or U)
- Grade 11 Math (M or U) or Grade 12 (C or U)

\*\* Mature Student status (19 years of age or older and no OSSD)

Please note that George Brown is committed to ensuring that applicants will succeed in their program of choice and meeting the minimum requirements does not guarantee admission to the program. Applicants may be required to have grades higher than the minimum requirements stated.

**Course Exemptions:**

College or university credits may qualify you for course exemptions. Please visit [www.georgebrown.ca/transferguide](http://www.georgebrown.ca/transferguide) for more information.

**International students:** Visit the International Admissions<sup>3</sup> page for more information.

**CONTACT US****School of Computer Technology**

Phone: 416-415-5000, ext. 4287

Email: [computertechnology@georgebrown.ca](mailto:computertechnology@georgebrown.ca)

The office hours are 8 a.m. – 4 p.m.

For more information about George Brown College, you may also call the Contact Centre at 416-415-2000 (TTY 1-877-515-5559) or long distance 1-800-265-2002.

**LINKS REFERENCE**

<sup>1</sup>[http://www.georgebrown.ca/admissions/how\\_to\\_apply/](http://www.georgebrown.ca/admissions/how_to_apply/)

<sup>2</sup><http://www.georgebrown.ca/international/futurestudents/tuitionfees/>

<sup>3</sup><http://www.georgebrown.ca/international/futurestudents/applynow/>

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## COMPUTER SYSTEMS TECHNICIAN PROGRAM (T141)

<b>PROGRAM NAME</b>	Computer Systems Technician	<b>TUITION</b>	
<b>COURSE CODE</b>	T141	<b>ADDITIONAL COST</b>	
<b>SCHOOL</b>	School of Computer Technology		
<b>CENTRE</b>	Arts, Design and Information Technology		
<b>LOCATION</b>	Casa Loma Campus		
<b>DURATION</b>	2 years (4 semesters)		
<b>STARTING MONTH</b>	September, January		
<b>CREDENTIAL</b>	Ontario College Diploma		
<b>YEAR OF STUDY</b>	2016-2017		
<b>METHOD OF STUDY</b>	FT		
<b>APPLY TO</b>	Ontario Colleges <sup>1</sup>		

\* Amounts listed are the total of tuition, materials, student service and ancillary fees for the first two semesters of programs starting in fall 2015. Fees are subject to change for programs starting in fall 2016 and at later dates.

**International students:** Visit the International Fees and Related Costs<sup>2</sup> page for more information.

Information technology jobs are forecast to more than double in Toronto in the next 10 years and our industry partners tell us they are facing skills shortages. George Brown College is helping meet this demand by educating expert technicians who understand computer networks through its well-respected two-year Computer Systems Technician program.

This program provides a broad technical base, including courses in the high-demand areas of server and network support and security that gives you a valuable foundation, wherever your career path leads you.



George Brown continues to invest in up-to-date networking, wireless, radio frequency, VoIP and security lab equipment, so that all students gain hands-on experience in installation and configuration of equipment ranging from small offices

all the way to enterprise-class hardware and software. This investment, along with the hands-on teaching environment, was recognized by Cisco when the college was designated an Area Support Centre and Instructor Training Centre, and became part of a very select group of Cisco Networking Academies in Canada.

The Computer Systems Technician program is a stable platform for your career development in the IT industry. In the program, students cover all four courses of the official Cisco CCNA Routing & Switching curriculum. In addition to CCNA, students will also be prepared to write other industry certification exams that are in-demand by employers.

\*If you enrol in January, you must complete semester 2 in the summer, May to August, in the same year.

### PROGRAM STANDARDS AND LEARNING OUTCOMES

Each George Brown College certificate, diploma, advanced diploma and graduate certificate program is expected to deliver specific program learning outcomes. Program learning outcomes are statements that describe the knowledge and skills that students are expected to demonstrate by the end of their program of study. Programs are designed to deliver both vocation or discipline-specific learning outcomes and more generic essential employability skills (including communication, numeracy, critical thinking and problem solving, information management, interpersonal and personal skills).

In addition to the aforementioned learning outcome requirements, College programs are required to provide students with exposure to a breadth of learning beyond their vocational field, to increase their awareness of the society and culture in which they live and work. This breadth requirement is addressed through additional mandatory General Education courses in the program curriculum.

To see the relevant program learning outcomes for your specific program of study, please visit [georgebrown.ca/programs/learning-standards-and-outcomes](http://georgebrown.ca/programs/learning-standards-and-outcomes)

### REQUIRED COURSES

#### SEMESTER 1

Code	Course name
COMP1151	IT Essentials
COMP1176	Introduction to Networks - CCNA 1
COMP1223	Web Development Fundamentals
GSSC1045	Business Applications for Information Technology
MATH1062	Mathematics for Computer Technology I
COMM1007	College English**

#### SEMESTER 2

Code	Course name
COMP1203	Routing and Switching Essentials - CCNA 2
COMP3044	UNIX Essentials
COMP1231	Web Programming
COMP1232	Operating System Installation and Support
MATH1172	Mathematics for Computer Technology II
GSSC1027	Personal Finance

**SEMESTER 3**

Code	Course name
COMP1196	Scaling Networks - CCNA 3
COMP2064	Windows Servers Active Directory Configuration
COMP2144	Web Server Administration
COMP3066	UNIX System Administration
COMM2148	Technical Writing and Professional Portfolio Development
GNED	General Education Elective

**SEMESTER 4**

Code	Course name
COMP1197	Connecting Networks - CCNA 4
COMP2102	Wireless Technology Fundamentals
COMP2141	Windows Server Network Infrastructure
COMP3061	Computer Security Fundamentals
COMP2149	Open System Technologies
GNED	General Education Elective

\*\*Based on the results of your placement test, you may be required to take COMM1003 (English Skills) or CESL1003 (English Skills – ESL) before progressing to COMM1007. COMM1003/CESL1003 does not count as a course required for graduation, and you will be charged for this extra course. Please visit <http://assessment.georgebrown.ca> for more information.

**YOUR CAREER**

Graduates can provide client support and network technical support in a wide variety of job situations and industries. Opportunities exist in companies that provide computer support services to other businesses, and in organizations that specialize in the sale and installation of computer systems and networks. Graduates may also find employment working directly with business clients, providing training services and ongoing support to assist them in using computer applications effectively.

The curriculum also prepares students to, after graduating from the program, write several of the examinations leading to industry certification in Network Administration and Support.

**FUTURE STUDY OPTIONS**

Graduates may continue directly into the third year of the Computer Systems Technology program (T147)<sup>3</sup>, and earn an Ontario College Advanced Diploma in two additional semesters.

Students who successfully complete this program may qualify for entry into university degree programs. This includes credit towards the Athabasca University BSc-CIS (PD).

For further information on future study options, see [georgebrown.ca/transferguide/](http://georgebrown.ca/transferguide/)

**ADMISSION REQUIREMENTS**

Applicants are selected on the basis of their academic achievement, including the required courses, and any other selection criteria outlined below.

- Ontario Secondary School Diploma or equivalent\*\*
- Grade 12 English (C or U)
- Grade 11 Math (M or U) or Grade 12 (C or U)

\*\* Mature Student status (19 years of age or older and no OSSD)

Please note that George Brown is committed to ensuring that applicants will succeed in their program of choice and meeting the minimum requirements does not guarantee admission to the program. Applicants may be required to have grades higher than the minimum requirements stated.

**COURSE EXEMPTIONS:**

College or university credits may qualify you for course exemptions. Please visit [www.georgebrown.ca/transferguide](http://www.georgebrown.ca/transferguide) for more information.

**International students:** Visit the International Admissions<sup>4</sup> page for more information.



"After completing my Bachelor's degree in Mathematics and Physics, I was looking for a hands-on computer science program and enrolled at George Brown College. Besides the IT skills, I learned the importance of teamwork and organizational skills that prepared me for my current role at Gemma."

**Margi Josh** (Graduate 2005, Computer Systems Technician)  
Manager, Software Development, Gemma Communications

**CONTACT US****School of Computer Technology**

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**LINKS REFERENCE**

<sup>1</sup>[http://www.georgebrown.ca/apply\\_now\\_at\\_ontario\\_colleges/](http://www.georgebrown.ca/apply_now_at_ontario_colleges/)

<sup>2</sup><http://www.georgebrown.ca/international/futurestudents/tuitionfees/>

<sup>3</sup><http://www.georgebrown.ca/T147/>

<sup>4</sup><http://www.georgebrown.ca/international/futurestudents/applynow/>

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## COMPUTER SYSTEMS TECHNOLOGY PROGRAM (T147)

<b>PROGRAM NAME</b>	Computer Systems Technology	<b>TUITION</b>	\$3,712.00*
<b>COURSE CODE</b>	T147	<b>ADDITIONAL COST</b>	
<b>SCHOOL</b>	School of Computer Technology	* Amounts listed are the total of tuition, materials, student service and ancillary fees for the first two semesters of programs starting in fall 2015. Fees are subject to change for programs starting in fall 2016 and at later dates.	
<b>CENTRE</b>	Arts, Design and Information Technology	<b>International students:</b> Visit the International Fees and Related Costs <sup>2</sup> page for more information.	
<b>LOCATION</b>	Casa Loma Campus		
<b>DURATION</b>	3 years (6 semesters)		
<b>STARTING MONTH</b>	September, January		
<b>CREDENTIAL</b>	Ontario College Advanced Diploma		
<b>YEAR OF STUDY</b>	2016-2017		
<b>METHOD OF STUDY</b>	FT		
<b>APPLY TO</b>	Ontario Colleges <sup>1</sup>		

The three-year Computer Systems Technology program is designed with extensive industry input and offers two optional specializations in its third year:



1. The Networking specialization focuses on network security, voice-over-IP (VoIP) and wireless LANs.
2. The Systems specialization focuses on mail server administration, content management systems (Collaboration), database administration and computer security.

Both specializations include core courses on infrastructure virtualization (through the VMWare IT Academy), along with best practices in IT.

George Brown College continues to invest in up-to-date networking, wireless, radio frequency, VoIP and security lab equipment, so that all students gain hands-on experience in installation and configuration of equipment ranging from small offices all the way to enterprise-class hardware and software. This investment, along with the hands-on teaching environment, was recognized by Cisco when the college was designated an Area Support Centre and Instructor Training Centre, and became part of a very select group of Cisco Networking Academies in Canada.

In the third year of the program, students will be involved, hands-on, in real-life projects or case studies. These may be completed independently, in conjunction with an industry partner, or the George Brown Research and Innovation Department and may include developing proposals and working in teams to plan, set schedules and achieve specific goals in the field of IT. Through some of these projects, George Brown students have recently helped develop IT solutions for hospitals, large corporations and major IT and telecommunications service providers, including Bell Mobility, Rogers Communications, Cogeco Data Systems and many other well-known companies in the Greater Toronto Area.

This program covers all four courses of the official Cisco CCNA Routing & Switching curriculum. The curriculum also prepares students to write several other examinations leading to industry certifications, such as the Certified Wireless Network Administrator (CWNA) and Cisco's CCNA Security.

\*If you enrol in January, you must complete semester 2 in the summer, May to August, in the same year.

### PROGRAM STANDARDS AND LEARNING OUTCOMES

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To see the relevant program learning outcomes for your specific program of study, please visit [georgebrown.ca/programs/learning-standards-and-outcomes](http://georgebrown.ca/programs/learning-standards-and-outcomes)

### REQUIRED COURSES

#### SEMESTER 1

Code	Course name
COMP1151	IT Essentials
COMP1176	Introduction to Networks - CCNA 1
COMP1223	Web Development Fundamentals
GSSC1045	Business Applications for Information Technology
MATH162	Mathematics for Computer Technology I
COMM1007	College English**

**SEMESTER 2**

Code	Course name
COMP1203	Routing and Switching Essentials - CCNA 2
COMP3044	UNIX Essentials
COMP1231	Web Programming
COMP1232	Operating System Installation and Support
MATH1172	Mathematics for Computer Technology II
GSSC1027	Personal Finance

**SEMESTER 3**

Code	Course name
COMP1196	Scaling Networks - CCNA 3
COMP2064	Windows Servers Active Directory Configuration
COMP2144	Web Server Administration
COMP3066	UNIX System Administration
COMP2148	Technical Writing and Professional Portfolio Development
GNED	General Education Elective

**SEMESTER 4**

Code	Course name
COMP1197	Connecting Networks - CCNA 4
COMP2102	Wireless Technology Fundamentals
COMP2141	Windows Server Network Infrastructure
COMP3061	Computer Security Fundamentals
COMP2149	Open System Technologies
GNED	General Education Elective

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**PROGRAM SPECIALIZATION****CHOOSE ONE SET OF COURSES**

Students are to pick a specialization in semester 5 and will be registered in the corresponding courses. Please note that once your specialization is picked in semester 5, you will not be able to change in semester 6.

**NETWORKING SPECIALIZATION****SEMESTER 5**

Code	Course name
COMP3093	Infrastructure Virtualization
COMP3098	Enterprise Network and System Design
COMP3115	Information Systems Project Management
COMP3049	WLAN Administration
COMP3076	Network Infrastructure Security
COMP3112	Network Convergence Technologies

**SEMESTER 6**

Code	Course name
COMP3094	ITIL Foundation
COMP3099	Capstone Project
COMP3108	Cloud Computing Infrastructure
COMP3107	Enterprise Network Management
COMP3111	Broadband and Data Communications

**SYSTEMS SPECIALIZATION****SEMESTER 5**

Code	Course name
COMP3093	Infrastructure Virtualization
COMP3098	Enterprise Network and System Design
COMP3115	Information Systems Project Management
COMP3114	Database Administration
COMP3102	Mail Server Administration
COMP3103	Power Shell Scripting

**SEMESTER 6**

Code	Course name
COMP3094	ITIL Foundation
COMP3099	Capstone Project
COMP3108	Cloud Computing Infrastructure
COMP3113	Advanced Computer System Security
COMP3121	System Data Collaboration

**YOUR CAREER**

This program prepares graduates for jobs in a wide variety of positions, including systems administrators connected with wireless LAN support, wireless service providers and cellular and broadband providers. Opportunities also exist in companies that provide computer support services to other businesses, and in organizations that specialize in the sale and installation of computer systems and networks.

Graduates may also find employment working directly with business clients, providing training services and ongoing support to assist them in using computer applications effectively. Graduates will be prepared to write several of the examinations leading to industry certification in Network Administration and Support.

**FUTURE STUDY OPTIONS**

Students who successfully complete this program may qualify for entry into Ontario college graduate certificate and university degree programs. George Brown currently has articulation agreements with various other post-secondary institutions such as the University of Ontario Institute of Technology, McMaster University and the Northern Alberta Institute of Technology. For further information on future study options, see [georgebrown.ca/transferguide/](http://georgebrown.ca/transferguide/)

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**International students:** Visit the International Admissions<sup>3</sup> page for more information.

### **CONTACT US**

#### **SCHOOL OF COMPUTER TECHNOLOGY**

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## GAME PROGRAMMING PROGRAM (T163)

<b>PROGRAM NAME</b>	Game Programming
<b>COURSE CODE</b>	T163
<b>SCHOOL</b>	School of Computer Technology
<b>CENTRE</b>	Arts, Design and Information Technology
<b>LOCATION</b>	Casa Loma Campus
<b>DURATION</b>	3 years (6 semesters)
<b>STARTING MONTH</b>	September, January
<b>CREDENTIAL</b>	Ontario College Advanced Diploma
<b>YEAR OF STUDY</b>	2016-2017
<b>METHOD OF STUDY</b>	FT
<b>APPLY TO</b>	Ontario Colleges <sup>1</sup>

### TUITION

\$4,014.00 \*

### ADDITIONAL COST

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**International students:** Visit the International Fees and Related Costs<sup>2</sup> page for more information.

Whether it's online or console, cell phone or PC-based, the game industry in Canada is large and growing rapidly. In the Greater Toronto Area, developers and publishers of games range in size from small specialized units to mid-sized companies to Microsoft, Nintendo and other industry leaders.

Computer programmers are the fundamental resource for companies that develop, produce, distribute and market computer-based games. In fact, our industry advisors tell us it is the technical skills that are most in demand, a demand this George Brown program is focused on filling.

Students in George Brown's three-year Game Programming advanced diploma program will learn the technical skills they need to be successful in the job market by learning "the language of gaming" (C and C++), as well as artificial intelligence, 3D graphics and much more.

The added advantage of this program is that students will also be taught by George Brown's School of Design faculty throughout the program, working closely with design students to create games, explore all aspects of the game industry, and learn to work in teams, just as they will in industry. Classes take place at George Brown's Casa Loma and St. James campuses. Some courses are offered online, and in some semesters evening courses may be required.

\*If you enrol in the program in January, you must complete semester 2 in the summer (May to August) of the same year.



### THE INDUSTRY

"Canada is the globe's third-largest video-game producing country with hundreds of world-class companies continuing to benefit from the Canadian advantage. In 2009, Canada's video-game industry accounted

for more than \$2 billion in retail sales of entertainment software and hardware, generating \$1.7 billion in direct economic activity for the Canadian economy. The Canadian industry employs over 14,000 people and is continuing to grow at a record pace."

**Entertainment Software Association of Canada**

### PROGRAM STANDARDS AND LEARNING OUTCOMES

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### REQUIRED COURSES

#### SEMESTER 1

Code	Course name
GAME1001	Introduction to Programming
GAME1003	Web Game Development
GAME1005	Game Production I
GSSC1045	Business Applications for Information Technology
MATH1162	Mathematics for Computer Technology I
COMM1007	College English†



**SEMESTER 2**

Code	Course name
GAME1011	Object-Oriented Programming
GAME1012	Game Engine Scripting
GAME1013	Graphical User Interface Development
GAME1014	Game Production II
MATH1107	Linear Algebra and Geometry
GSSC1027	Personal Finance

**SEMESTER 3**

Code	Course name
DESN2013**	Game Project Development I
GAME2001	Data Structures and Algorithms
GAME2005	Game Physics
GAME2013	Game Engine Fundamentals
GAME2016	Graphics Programming Fundamentals
GAME3001	Artificial Intelligence
GNED	General Education Elective

**SEMESTER 4**

Code	Course name
DESN2017**	Game Project Development II
GAME2002	Multimedia Systems Development
GAME2011	Mobile Game Fundamentals
GAME2012	3D Graphics Programming
GAME2015	Virtual Reality Development
COMP2148	Technical Writing and Professional Portfolio Development
GNED	General Education Elective

**SEMESTER 5**

Code	Course name
DESN3010**	Game Project Development III
GAME2014	Android Game Development
GAME3002	Physics Engines
GAME3003	Console Game Development I
GAME3111	Advanced Graphics Programming
GAME3121	Game Engine Development I

**SEMESTER 6**

Code	Course name
DESN3012**	Game Project Development IV
GAME3004	iOS Game Development
GAME3011	Advanced Game Programming
GAME3015	Game Engine Development II
GAME3110	Multiplayer Systems
GAME3112	Console Game Development II

†Based on the results of your placement test, you may be required to take COMM1003 (English Skills) or CESL1003 (English Skills – ESL) before progressing to COMM1007. COMM1003/CESL1003 does not count as a course required for graduation, and you will be charged for this extra course. Please visit <http://www.georgebrown.ca/assessment> for more information.

\*\*Course delivered at the St. James Campus. All other courses are delivered at the Casa Loma Campus.

**ELECTIVES****ALTERNATIVE STUDY OPTIONS**

Students looking to focus more on the art/asset development aspect of game development may be more interested in our Game Development advanced diploma program (G109), which is centred in the George Brown School of Design. Even though several courses are co-delivered in both programs, we encourage you to consider the program that most closely suits your goals prior to making a final decision.

**YOUR CAREER**

Our graduates will be able to work in many areas of the digital game industry, including software or hardware development, publisher, ISP and game portal development and maintenance, website development, distribution, middleware and tool provider, production servicer, or even content/IP owner.

**EDUCATIONAL/DEGREE PATHWAY**

Graduates of Game Programming have the opportunity to apply to the BSc (Honours) Computer Games Design at the University of Gloucestershire, beginning in level 6. For more information about this program, visit

[www.glos.ac.uk/courses/undergraduate/cgs/pages/computer-games-design-bsc.aspx](http://www.glos.ac.uk/courses/undergraduate/cgs/pages/computer-games-design-bsc.aspx)<sup>3</sup>

**ADMISSION REQUIREMENTS**

Applicants are selected on the basis of their academic achievement, including the required courses, and any other selection criteria outlined below.

- Ontario Secondary School Diploma or equivalent\*\*
- Grade 12 English (C or U)
- Grade 11 Math (M or U) or Grade 12 (C or U)

\*\* Mature Student status (19 years of age or older and no OSSD)

Please note that George Brown is committed to ensuring that applicants will succeed in their program of choice and meeting the minimum requirements does not guarantee admission to the program. Applicants may be required to have grades higher than the minimum requirements stated.

Course Exemptions:

College or university credits may qualify you for course exemptions. Please visit [georgebrown.ca/transferguide](http://georgebrown.ca/transferguide) for more information.

**International students:** Visit the International Admissions<sup>4</sup> page for more information.

**CONTACT US****School of Computer Technology**

Phone: 416-415-5000, ext. 4287

Email: [computertechnology@georgebrown.ca](mailto:computertechnology@georgebrown.ca)

The office hours are 8 a.m. – 4 p.m.

For more information about George Brown College, you may also call the Contact Centre at 416-415-2000 (TTY 1-877-515-5559) or long distance 1-800-265-2002.

## LINKS REFERENCE

<sup>1</sup>[http://www.georgebrown.ca/apply\\_now\\_at\\_ontario\\_colleges/](http://www.georgebrown.ca/apply_now_at_ontario_colleges/)

<sup>2</sup><http://www.georgebrown.ca/international/futurestudents/tuitionfees/>

<sup>3</sup><http://www.glos.ac.uk/courses/undergraduate/cgs/pages/computer-games-design-bsc.aspx>

<sup>4</sup><http://www.georgebrown.ca/international/futurestudents/applynow/>

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## HEALTH INFORMATICS PROGRAM (POSTGRADUATE) (T402)

<b>PROGRAM NAME</b>	Health Informatics	<b>TUITION</b>	
<b>COURSE CODE</b>	T402	<b>ADDITIONAL COST</b>	
<b>SCHOOL</b>	School of Computer Technology		
<b>CENTRE</b>	Arts, Design and Information Technology		
<b>LOCATION</b>	Casa Loma Campus		
<b>DURATION</b>	1 year (3 semesters)		
<b>STARTING MONTH</b>	PROGRAM SUSPENDED		
<b>CREDENTIAL</b>	Ontario College Graduate Certificate		
<b>YEAR OF STUDY</b>	2016-2017		
<b>METHOD OF STUDY</b>	FT		
<b>APPLY TO</b>	Ontario Colleges <sup>1</sup>		

\$10,036.00 \*

\* Amounts listed are the total of tuition, materials, student service and ancillary fees for the **three** semesters of programs starting in fall 2015. Fees are subject to change for programs starting in fall 2016 and at later dates.

Health-care and information systems professionals currently employed or with experience in a health-care or technology environment, or who have an interest in the advancement of information technologies in the health-care delivery sector, will be interested in this program.

The evolution of electronic information and communication tools is transforming the health-care system and creating new ways of accessing and exchanging information that will impact the health-care sector.

The Health Informatics graduate certificate program brings together professionals in health-related and information technology sectors to develop specialists in health informatics who can respond to the current and emerging needs of health-care systems. A comprehensive portfolio assessment phase will assist students in developing and mapping their learning plan for initial and ongoing engagement in the program.

- Courses in this program are offered online, plus Fridays and Saturdays, allowing most students to continue working during their studies.
- Three-semester intensive program.
- Multidisciplinary delivery with practical experience.
- Practicums in a health-care environment in semester 3.

Students will interact within a technology-rich setting and be exposed to a variety of co-operative learning environments that include traditional classroom settings, computer laboratories, online learning and simulated learning environments as part of their educational experience.

The Health Informatics program provides breadth and depth of applied knowledge in the field of health-care informatics. Ethical, professional, legal and policy implications of health information systems technologies and health information standards are emphasized throughout the curriculum.

Principles of leadership, project management, and individual and organizational change management are also addressed as themes throughout the program. The program is focused on developing specialists with a "dual" perspective who can integrate computing and managerial knowledge with experience with health-related knowledge and experience. Graduates of the program will have acquired knowledge, skills and competencies relevant to professional certification programs in Health Informatics/Information and Management Systems.

Upon completion, graduates will be able to meet the requirements for positions such as clinical/IT project manager, health technology leader, clinical informatics specialist or health technology education/training specialist.

### PART TIME STUDY OPTIONS

We also offer part-time programs in Health Records and Health Information Management. See the Continuing Education Course Guide at [coned.georgebrown.ca](http://coned.georgebrown.ca).

### PROGRAM STANDARDS AND LEARNING OUTCOMES

Each George Brown College certificate, diploma, advanced diploma and graduate certificate program is expected to deliver specific program learning outcomes. Program learning outcomes are statements that describe the knowledge and skills that students are expected to demonstrate by the end of their program of study. Programs are designed to deliver both vocation or discipline-specific learning outcomes and more generic essential employability skills (including communication, numeracy, critical thinking and problem solving, information management, interpersonal and personal skills).

In addition to the aforementioned learning outcome requirements, College programs are required to provide students with exposure to a breadth of learning beyond their vocational field, to increase their awareness of the society and culture in which they live and work. This breadth requirement is addressed through additional mandatory General Education courses in the program curriculum.

To see the relevant program learning outcomes for your specific program of study, please visit [georgebrown.ca/programs/learning-standards-and-outcomes](http://georgebrown.ca/programs/learning-standards-and-outcomes)

### REQUIRED COURSES

#### SEMESTER 1

Code	Course Name
COMP1180	Portfolio I
COMP4011	Career Preparation
COMP4012	Business Communication
COMP4014	Canadian Health-Care System
COMP4015	Health-Care Information Technology (in class)
COMP4018	Knowledge Management and Clinical Decision-Making
HLTH1101	Leadership and Change Management

**SEMESTER 2**

Code	Course Name
COMP4021	Project Management and Implementation
COMP4022	The Cutting Edge of Health Informatics Technology
COMP4023	Strategic Planning
COMP4024	Health Data Standards
COMP4025	Privacy and Confidentiality

**SEMESTER 3**

Code	Course Name
COMP4031	Online Educational Strategies
COMP4032	Health Informatics Impact on Clinical Practice
COMP4033	Health Informatics System Analysis and Evaluation (in class)
COMP4034	Portfolio II
HLTH1105	Applied Practicum

**YOUR CAREER**

Graduates will be able to:

- Formulate strategies to implement appropriate health information systems technologies (HIST) within the health-care setting
- Evaluate the effectiveness of health information systems technologies within a health-related setting
- Integrate relevant standards and professional, ethical and legislative requirements with the appropriate health information system technologies
- Design training and education for the effective use of HIST

**ADMISSION REQUIREMENTS**

Education:

- Minimum 2-year Diploma or Bachelor's Degree\* in Health Sciences or related field from an accredited institution

**OR**

- Minimum 3-year College Diploma in Information Technology\* or related field from an accredited institution

Work experience (resumé required):

- One year of work experience as a health-care professional or an IT professional, or equivalent.

Candidates will be accepted based on the combination of relevant education and work experience.

\* Please note that Domestic applicants who are submitting International transcripts require a Canadian equivalency evaluation. This can be obtained through ICAS (International Credential Assessment Service) at [icascanada.ca](http://icascanada.ca) or WES (World Education Services) at [www.wes.org/ca](http://www.wes.org/ca)<sup>2</sup>

**ENGLISH PROFICIENCY**

Applicants with international transcripts who do not provide English proficiency test results must test at the College level in the George Brown College English assessment to be considered for admission.

Please visit [www.georgebrown.ca/englishproficiency](http://www.georgebrown.ca/englishproficiency) for more details.

**Course Exemptions:**

College or university credits may qualify you for course exemptions. Please visit [georgebrown.ca/transferguide](http://georgebrown.ca/transferguide) for more information.

**International students:** Visit the International Admissions<sup>3</sup> page for more information.

"I received tremendous guidance and professional support from faculty that encouraged me to go beyond my comfort zone and pursue my dreams. The George Brown College environment was very nurturing both professionally and personally."

**Amrita Tyagi** (Graduate 2007, Health Informatics)

**CONTACT US****School of Computer Technology**

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The office hours are 8 a.m. – 4 p.m.

For more information about George Brown College, you may also call the Contact Centre at 416-415-2000 (TTY 1-877-515-5559) or long distance 1-800-265-2002.

**LINKS REFERENCE**

<sup>1</sup>[http://www.georgebrown.ca/apply\\_now\\_at\\_ontario\\_colleges/](http://www.georgebrown.ca/apply_now_at_ontario_colleges/)

<sup>2</sup><http://www.wes.org/ca/>

<sup>3</sup><http://www.georgebrown.ca/international/futurestudents/applynow/>

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## INFORMATION SYSTEMS BUSINESS ANALYSIS PROGRAM (WITH EXPERIENTIAL LEARNING CAPSTONE) (T405)

<b>PROGRAM NAME</b>	Information Systems Business Analysis	<b>TUITION</b>	\$12,242.00 *
<b>COURSE CODE</b>	T405	<b>ADDITIONAL COST</b>	
<b>SCHOOL</b>	School of Computer Technology		
<b>CENTRE</b>	Arts, Design and Information Technology		
<b>LOCATION</b>	Casa Loma Campus		
<b>DURATION</b>	1 year (3 semesters)		
<b>STARTING MONTH</b>	September, January		
<b>CREDENTIAL</b>	Ontario College Graduate Certificate		
<b>YEAR OF STUDY</b>	2016-2017		
<b>METHOD OF STUDY</b>	FT		
<b>APPLY TO</b>	Ontario Colleges <sup>1</sup>		

\* Amounts listed are the total of tuition, materials, student service and ancillary fees for the first **three** semesters of programs starting in fall **2015**. Fees are subject to change for programs starting in fall 2016 and at later dates.

**International students:** Visit the International Fees and Related Costs<sup>2</sup> page for more information.

The Information Systems Business Analysis graduate certificate program at George Brown College is designed to meet the urgent need for professionals who can be the key liaison between business and information technology functions within an organization. Further, it is the first program of its kind to be recognized by the International Institute of Business Analysis as an Academic Member, and George Brown College is proud to be one of the first institutions globally to offer the IIBA® Academic Diploma.

This intensive program is designed for IT or business professionals who aspire to enter into a business analyst role, or practitioners who wish to enhance their experience with formal education. A deeper level of understanding of the business analyst role will be developed through unique learning techniques and invaluable practical experience. Participants will be engaged and supported by a team of business analyst consultants and faculty in developing critical skills and competencies in the areas of:

- problem identification
- documenting and analyzing user requirements
- process and workflow modelling
- communication and facilitation
- project management
- technical writing
- leadership and management
- decision-making

A key characteristic of this program is the applied nature of the curriculum. Students are immersed in the process of business analysis through case histories of real-world business issues, and are responsible for developing solutions. The uniqueness of this program is in creating a practicing Business Analyst rather than creating someone who knows how to do it. This program creates work-ready graduates who can do, and have done, the business analysis process through applied, hands-on experience.

### DELIVERY

- This full-time program is delivered in a blended format, combining face-to-face sessions with online delivery.
- You will attend one evening per week (Wednesday), plus all day Saturday.
- You will meet every other Friday, while the remaining courses will be delivered online.
- This delivery format accommodates those who wish to remain working, or those who wish to work while taking this program.

### IIBA ACADEMIC MEMBERSHIP

Academic Membership in the International Institute of Business Analysis (IIBA) offers colleges and universities that have Business Analyst curriculums and care about advancing the BA profession within their student population the opportunity to participate in IIBA membership and benefit from IIBA's other products and services. The Academic recognition programs offer the students of BA-related programs the opportunity to receive recognition from the IIBA.

### NEW – GRADUATES RECEIVE THE IIBA ACADEMIC DIPLOMA

Students who successfully graduate from the program will receive a second credential – the IIBA® Academic Diploma. Accredited directly from the International Institute of Business Analysis, this diploma recognizes the student's theoretical understanding of the Business Analyst Body of Knowledge (BABOK), as well as a minimum number of hours of practical experience received through the duration of the program.

### ABOUT THE IIBA ACADEMIC DIPLOMA

The IIBA® Academic Diploma in Business Analysis is designed for students who have chosen business analysis and the role of the business analyst as their desired profession.

The multi-course business analysis diploma program provides both foundational and applied knowledge in business analysis by offering hands-on experience to practice and demonstrate an understanding of the classroom concepts through co-ops, internships or progressive case studies. The business analysis diploma program also provides course work in supporting disciplines to ensure students can interact effectively across an organization.

## FIELD STUDY OPTIONS

### CO-OP INDUSTRY WORK EXPERIENCE

Upon completion of semester 1, students will be eligible to transfer into the co-op stream. This will enable students to engage in industry work experience through their final semester while meeting the program's academic requirements.

Our many industry partners and applied research project partners benefit greatly from this program's non-standard delivery format, which allows our students to engage in authentic, real-world work settings throughout the week – while learning! Students may begin working from the beginning of the second semester, for up to 24 hours per week. These industry opportunities also contribute to students receiving the IIBA® Academic Diploma.

### PROGRAM STANDARDS AND LEARNING OUTCOMES

Each George Brown College certificate, diploma, advanced diploma and graduate certificate program is expected to deliver specific program learning outcomes. Program learning outcomes are statements that describe the knowledge and skills that students are expected to demonstrate by the end of their program of study. Programs are designed to deliver both vocation or discipline-specific learning outcomes and more generic essential employability skills (including communication, numeracy, critical thinking and problem solving, information management, interpersonal and personal skills).

In addition to the aforementioned learning outcome requirements, College programs are required to provide students with exposure to a breadth of learning beyond their vocational field, to increase their awareness of the society and culture in which they live and work. This breadth requirement is addressed through additional mandatory General Education courses in the program curriculum.

To see the relevant program learning outcomes for your specific program of study, please visit [georgebrown.ca/programs/learning-standards-and-outcomes](http://georgebrown.ca/programs/learning-standards-and-outcomes)

### REQUIRED COURSES

This is a three-semester program comprising case studies during which students will be engaged on an increasingly intense and independent basis with material of escalating complexity. Course-oriented delivery supports this learning process.

#### SEMESTER 1

Code	Course Name
BUS4051	Foundations of Business Analysis
BUS4052	Business Analysis Techniques
BUS4053	Business Analyst Competencies I
BUS4065	Advanced Communications
COMP4017	Introduction to Information Systems

#### ANALYSIS AND ANALYTICS SPECIALIZATION

Code	Course Name
BUS4055	Quantitative Research/ Qualitative Research

#### FINANCE SPECIALIZATION

Code	Course Name
FIN1003	Financial Systems in Canada

#### SEMESTER 2

Code	Course Name
BUS4061	Business Analyst Case Study I
BUS4062	Business Analyst Case Study II
BUS4054	I.T. Project Management
BUS4063	Business Analyst Competencies II
BUS4064	Business Analyst Software Tools
BUS4072	Portfolio Development and Work Search Preparation

#### ANALYSIS AND ANALYTICS SPECIALIZATION

Code	Course Name
BUS4066	Introduction to Analytics Systems
BUS4067	User Interface Design/ User Experience

#### FINANCE SPECIALIZATION

Code	Course Name
FIN4015	Canadian Securities I
FIN4016	Canadian Securities II

#### SEMESTER 3

Code	Course Name
BUS4071	Capstone Case Study

## YOUR CAREER

According to the Information and Communications Technology Council (2011), “the most rapidly growing information and communication technology (ICT) occupations are those which combine ICT skills with an understanding of business needs.”

- There are approximately 150,000 BAs and related professionals in Canada.
- BA roles have been the fastest-growing ICT employment occupation in Canada from 2000 to 2010, growing approximately 120 per cent in that time.
- ICTC recognizes “Pervasive Shortages” for Information Systems Analysts and Consultant professionals through and beyond 2016.

Common job titles include:

- Business Analyst
- Business Systems Analyst
- Computer Systems Analyst
- Informatics Consultant
- Information Systems Business Analyst
- Information Systems Quality Assurance Analyst
- Management Information Systems (MIS) Analyst

## ADMISSION REQUIREMENTS

- 2-year or 3-year College Diploma or Bachelor's Degree in Computer Science, Commerce, Engineering or related field from an accredited institution\*.
- Minimum one year of relevant work experience (resumé required).
- Candidates will be accepted based on the combination of relevant education and work experience.

**ENGLISH PROFICIENCY:**

- A TOEFL score of 550 (or equivalent), where applicable (visit [www.georgebrown.ca/englishproficiency](http://www.georgebrown.ca/englishproficiency) for more information).
- Applicants with international transcripts who do not provide English proficiency test results must test at the College level in the George Brown College English assessment to be considered for admission.

**\* PLEASE NOTE THAT DOMESTIC APPLICANTS WHO ARE SUBMITTING INTERNATIONAL TRANSCRIPTS REQUIRE A CANADIAN EQUIVALENCY EVALUATION. THIS CAN BE OBTAINED THROUGH ICAS (INTERNATIONAL CREDENTIAL ASSESSMENT SERVICE) AT [ICASCANADA.CA](http://ICASCANADA.CA) OR WES (WORLD EDUCATION SERVICES) AT [WES.ORG/CA](http://WES.ORG/CA)<sup>3</sup>**

**COURSE EXEMPTIONS:**

College or university credits may qualify you for course exemptions. Please visit [www.georgebrown.ca/transferguide](http://www.georgebrown.ca/transferguide) for more information.

**International students:** Visit the International Admissions<sup>4</sup> page for more information.

**INDUSTRY FEEDBACK**

"I wanted to thank you for sending such great candidates to our attention. The top two people interviewed for our IT analyst position were from George Brown."

**Catherine Commins**

*General Manager, Advanced Chemistry Development, Inc. (ACD/Labs)*

"Porter Airlines has utilized George Brown College's business analyst students within our IT Division for over two years with great success. The Information Systems Business Analysis program's flexibility in allowing its students to work with industry partners, like Porter Airlines, while learning is invaluable for learners, and for industry. The business analysts come to us well trained, are keen to add value to projects, and blend well in our business environment. This year, we even hired one full-time before he graduated! Thank you!"

**Lynda Neil**

*PMP Manager, Project Management Office, Porter Airlines Inc.*

"By having students from the Information Systems Business Analysis program work with us, we were able to ensure quality work was accomplished on a very important project. These students were able to gain significant experience working in the field with a large team, dealing with various employees and stakeholders. Everyone involved was able to walk away having gained important experience and achieved positive results, and we look forward to continuing a relationship with George Brown College."

**Amos Adler**

*President, MEMOTEXT Inc.*

**STUDENT FEEDBACK**

"The Information Systems Business Analysis program taught me business analysis best practices for a variety of industries, which increased my marketability and gave me the experience I needed to successfully fulfill the responsibilities of my current business analyst role. The year-long program let me practice and apply my skills in-depth to a real-life project, while the faculty provided me with excellent support that allowed me to excel as a business analyst."

**Carol Chung** (Graduate 2009, Information Systems Business Analysis)

"The Information Systems Business Analysis postgraduate program has been one of the biggest cornerstones of my career. From this program, I was not only able to learn about business analysis, but also work with industry partners to apply the knowledge and skills I attained in the program. This has opened up more doors and opportunities and challenged me to perform and grow as a business analyst.

Through this program, I have been able to work as a business analyst for CIBC's Wholesale Banking Technology and TD Canada Trust on projects that require extensive knowledge and application of business analysis tools and skills. The program explores very important aspects which include enterprise analysis, business planning and monitoring, and other requirement management techniques, which have helped me apply myself and become a better business analyst. I would definitely recommend this program to anyone who seeks to enter or needs to advance in the field of business analysis."

**Moses Wamambo** (Graduate 2011, Information Systems Business Analysis)

*Business Analyst, TD Canada Trust*

## CONTACT US

### School of Computer Technology

Phone: 416-415-5000, ext. 4287

Email: [computertechnology@georgebrown.ca](mailto:computertechnology@georgebrown.ca)

The office hours are 8 a.m. – 4 p.m.

For more information about George Brown College, you may also call the Contact Centre at 416-415-2000 (TTY 1-877-515-5559) or long distance 1-800-265-2002.

## LINKS REFERENCE

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<sup>2</sup><http://www.georgebrown.ca/international/futurestudents/tuitionfees/>

<sup>3</sup><http://www.wes.org/ca/>

<sup>4</sup><http://www.georgebrown.ca/international/futurestudents/applynow/>

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## INFORMATION SYSTEMS BUSINESS ANALYSIS PROGRAM (WITH CO-OP) (T407)

<b>PROGRAM NAME</b>	Information Systems Business Analysis
<b>COURSE CODE</b>	T407
<b>SCHOOL</b>	School of Computer Technology
<b>CENTRE</b>	Arts, Design and Information Technology
<b>LOCATION</b>	Casa Loma Campus
<b>DURATION</b>	1 year (2 semesters in-class; 1 co-op work term)
<b>FIELD EDUCATION</b>	Required
<b>STARTING MONTH</b>	September, January
<b>CREDENTIAL</b>	Ontario College Graduate Certificate
<b>YEAR OF STUDY</b>	2016-2017
<b>METHOD OF STUDY</b>	FT
<b>APPLY TO</b>	Ontario Colleges <sup>1</sup>

### TUITION

\$8,273.00\* ‡

### ADDITIONAL COST

\* Amounts listed are the total of tuition, materials, student service and ancillary fees for the first **two** semesters of programs starting in fall **2015**. Fees are subject to change for programs starting in fall 2016 and at later dates.

‡ Fees for this program do not include the cost of the co-op work term (\$500.00).

**International students:** Visit the International Fees and Related Costs<sup>2</sup> page for more information.

The Information Systems Business Analysis graduate certificate program at George Brown College is designed to meet the urgent need for professionals who can be the key liaison between business and information technology functions within an organization. Further, it is the first program of its kind to be recognized by the International Institute of Business Analysis as an Academic Member, and George Brown College is proud to be one of the first institutions globally to offer the IIBA® Academic Diploma.

This intensive program is designed for IT or business professionals who aspire to enter into a business analyst role, or practitioners who wish to enhance their experience with formal education. A deeper level of understanding of the business analyst role will be developed through unique learning techniques and invaluable practical experience. Participants will be engaged and supported by a team of business analyst consultants and faculty in developing critical skills and competencies in the areas of:

- problem identification
- documenting and analyzing user requirements
- process and workflow modelling
- communication and facilitation
- project management
- technical writing
- leadership and management
- decision-making

A key characteristic of this program is the applied nature of the curriculum. Students are immersed in the process of business analysis through case histories of real-world business issues, and are responsible for developing solutions. The uniqueness of this program is in creating a practicing business analyst rather than creating someone who knows how to do it. This program creates work-ready graduates who can do, and have done, the business analysis process through applied, hands-on experience.

### DELIVERY

- This full-time program is delivered in a blended format, combining face-to-face sessions with online delivery.
- You will attend one evening per week (Wednesday), plus all day Saturday.
- You will meet every other Friday, while the remaining courses will be delivered online.
- This delivery format accommodates those who wish to work while taking this program.

### IIBA ACADEMIC MEMBERSHIP

Academic Membership in the International Institute of Business Analysis (IIBA) offers colleges and universities that have Business Analyst curriculums and care about advancing the BA profession within their student population the opportunity to participate in IIBA membership and benefit from IIBA's other products and services. The Academic recognition programs offer the students of BA-related programs the opportunity to receive recognition from the IIBA.

### NEW – GRADUATES RECEIVE THE IIBA ACADEMIC DIPLOMA

Students who successfully graduate from the program will receive a second credential – the IIBA® Academic Diploma. Accredited directly from the International Institute of Business Analysis, this diploma recognizes the student's theoretical understanding of the Business Analyst Body of Knowledge (BABOK), as well as a minimum number of hours of practical experience received through the duration of the program.

### ABOUT THE IIBA ACADEMIC DIPLOMA

The IIBA® Academic Diploma in Business Analysis is designed for students who have chosen business analysis and the role of the business analyst as their desired profession.

The multi-course Business Analysis diploma program provides both foundational and applied knowledge in business analysis by offering hands-on experience to practice and demonstrate an understanding of the classroom concepts through co-ops, internships or progressive case studies. The Business Analysis diploma program also provides course work in supporting disciplines to ensure students can interact effectively across an organization.

### FIELD STUDY OPTIONS

#### CO-OP INDUSTRY WORK EXPERIENCE

Upon completion of semester 1 in the T405 program, students will be eligible to transfer into the T407 Information Systems Business Analysis co-op stream. This will enable students to engage in industry work experience through their final semester while meeting the program's academic requirements.

Our many industry partners and applied research project partners benefit greatly from this program's non-standard delivery format, which allows our students to engage in authentic, real-world work settings throughout the week – while learning! Students may begin working from the beginning of the second semester, for up to 24 hours per week. These industry opportunities also contribute to students receiving the IIBA® Academic Diploma.

## PROGRAM STANDARDS AND LEARNING OUTCOMES

Each George Brown College certificate, diploma, advanced diploma and graduate certificate program is expected to deliver specific program learning outcomes. Program learning outcomes are statements that describe the knowledge and skills that students are expected to demonstrate by the end of their program of study. Programs are designed to deliver both vocation or discipline-specific learning outcomes and more generic essential employability skills (including communication, numeracy, critical thinking and problem solving, information management, interpersonal and personal skills).

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To see the relevant program learning outcomes for your specific program of study, please visit [georgebrown.ca/programs/learning-standards-and-outcomes](http://georgebrown.ca/programs/learning-standards-and-outcomes)

## REQUIRED COURSES

This is a three-semester program comprising case studies during which students will be engaged on an increasingly intense and independent basis with material of escalating complexity. Course-oriented delivery supports this learning process.

### SEMESTER 1 (TAKEN IN T405)

Code	Course Name
BUS4051	Foundations for Business Analysis
BUS4052	Business Analyst Techniques
BUS4053	Business Analyst Competencies I
BUS4065	Advanced Communications
COMP4017	Introduction to Information Systems

### ANALYSIS AND ANALYTICS SPECIALIZATION

Code	Course Name
BUS4055	Quantitative Research/Qualitative Research

### FINANCE SPECIALIZATION

Code	Course Name
FIN1003	Financial Systems in Canada

### SEMESTER 2 (TRANSFERRED TO T407)

Code	Course Name
BUS4061	Business Analyst Case Study I
BUS4062	Business Analyst Case Study II
BUS4054	I.T. Project Management
BUS4063	Business Analyst Competencies II
BUS4064	Business Analyst Software Tools
BUS4072	Portfolio Development and Work Search Preparation

### ANALYSIS AND ANALYTICS SPECIALIZATION

Code	Course Name
BUS4066	Introduction to Analytics Systems
BUS4067	User Interface Design/ User Experience

### FINANCE SPECIALIZATION

Code	Course Name
FIN4015	Canadian Securities I
FIN4016	Canadian Securities II

### SEMESTER 3

Code	Course Name
TCOP4002	Co-Op Work Placement

## YOUR CAREER

According to the Information and Communications Technology Council (2011), "the most rapidly growing information and communication technology (ICT) occupations are those which combine ICT skills with an understanding of business needs."

- There are approximately 150,000 BAs and related professionals in Canada.
- BA roles have been the fastest-growing ICT employment occupation in Canada from 2000 to 2010, growing approximately 120 per cent in that time.
- ICTC recognizes "Pervasive Shortages" for Information Systems Analysts and Consultant professionals through and beyond 2016.

Common job titles include:

- Business Analyst
- Business Systems Analyst
- Computer Systems Analyst
- Informatics Consultant
- Information Systems Business Analyst
- Information Systems Quality Assurance Analyst
- Management Information Systems (MIS) Analyst

## ADMISSION REQUIREMENTS

\*Applicants of this program must apply to the T405 Information System Business Analysis (non co-op) stream. In your first semester of study, you will be eligible to transfer into the T407 (co-op) stream.\*

- 2-year or 3-year College Diploma or Bachelor's Degree in Computer Science, Commerce, Engineering or related field from an accredited institution\*.
- Minimum one year of relevant work experience (resumé required).
- Candidates will be accepted based on the combination of relevant education and work experience.

## ENGLISH PROFICIENCY:

- A TOEFL score of 550 (or equivalent), where applicable (visit [www.georgebrown.ca/englishproficiency](http://www.georgebrown.ca/englishproficiency) for more information).
- Applicants with international transcripts who do not provide English proficiency test results must test at the College level in the George Brown College English assessment to be considered for admission.

\* Please note that Domestic applicants who are submitting International transcripts require a Canadian equivalency evaluation. This can be obtained through ICAS (International Credential Assessment Service) at [icascanada.ca](http://icascanada.ca) or WES (World Education Services) at [wes.org/ca](http://wes.org/ca)<sup>3</sup>

## COURSE EXEMPTIONS:

College or university credits may qualify you for course exemptions. Please visit [www.georgebrown.ca/transferguide](http://www.georgebrown.ca/transferguide) for more information.

**International students:** Visit the International Admissions<sup>4</sup> page for more information.

## INDUSTRY FEEDBACK

"I wanted to thank you for sending such great candidates to our attention. The top two people interviewed for our IT analyst position were from George Brown."

### Catherine Commins

*General Manager, Advanced Chemistry Development, Inc. (ACD/Labs)*

"Porter Airlines has utilized George Brown College's business analyst students within our IT Division for over two years with great success. The Information Systems Business Analysis program's flexibility in allowing its students to work with industry partners, like Porter Airlines, while learning is invaluable for learners, and for industry. The business analysts come to us well trained, are keen to add value to projects, and blend well in our business environment. This year, we even hired one full-time before he graduated! Thank you!"

### Lynda Neil

*PMP Manager, Project Management Office, Porter Airlines Inc.*

"By having students from the Information Systems Business Analysis program work with us, we were able to ensure quality work was accomplished on a very important project. These students were able to gain significant experience working in the field with a large team, dealing with various employees and stakeholders. Everyone involved was able to walk away having gained important experience and achieved positive results, and we look forward to continuing a relationship with George Brown College."

### Amos Adler

*President, MEMOTEXT Inc.*

## STUDENT FEEDBACK

"The Information Systems Business Analysis program taught me business analysis best practices for a variety of industries, which increased my marketability and gave me the experience I needed to successfully fulfill the responsibilities of my current business analyst role. The year-long program let me practice and apply my skills in-depth to a real-life project, while the faculty provided me with excellent support that allowed me to excel as a business analyst."

**Carol Chung** (Graduate 2009, Information Systems Business Analysis)

"The Information Systems Business Analysis postgraduate program has been one of the biggest cornerstones of my career. From this program, I was not only able to learn about business analysis, but also work with industry partners to apply the knowledge and skills I attained in the program. This has opened up more doors and opportunities and challenged me to perform and grow as a business analyst.

Through this program, I have been able to work as a business analyst for CIBC's Wholesale Banking Technology and TD Canada Trust on projects that require extensive knowledge and application of business analysis tools and skills. The program explores very important aspects which include enterprise analysis, business planning and monitoring, and other requirement management techniques, which have helped me apply myself and become a better business analyst. I would definitely recommend this program to anyone who seeks to enter or needs to advance in the field of business analysis."

**Moses Wamambo** (Graduate 2011, Information Systems Business Analysis)

Business Analyst, TD Canada Trust

## CONTACT US

### School of Computer Technology

Phone: 416-415-5000, ext. 4287

Email: [computertechnology@georgebrown.ca](mailto:computertechnology@georgebrown.ca)

The office hours are 8 a.m. – 4 p.m.

For more information about George Brown College, you may also call the Contact Centre at 416-415-2000 (TTY 1-877-515-5559) or long distance 1-800-265-2002.

## LINKS REFERENCE

<sup>1</sup>[http://www.georgebrown.ca/apply\\_now\\_at\\_ontario\\_colleges/](http://www.georgebrown.ca/apply_now_at_ontario_colleges/)

<sup>2</sup><http://www.georgebrown.ca/international/futurestudents/tuitionfees/>

<sup>3</sup><http://www.wes.org/ca/>

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## NETWORK AND SYSTEM SECURITY ANALYSIS PROGRAM (POSTGRADUATE) (T413)

<b>PROGRAM NAME</b>	Network and System Security Analysis	<b>TUITION</b>	\$12,527.00 *
<b>COURSE CODE</b>	T413	<b>ADDITIONAL COST</b>	
<b>SCHOOL</b>	School of Computer Technology	*Amounts listed are the total of tuition, materials, student service and ancillary fees for the first <b>three</b> semesters of programs starting in fall <b>2015</b> . Fees are subject to change for programs starting in fall 2016 and at later dates.	
<b>CENTRE</b>	Arts, Design and Information Technology	<b>International students:</b> Visit the International Fees and Related Costs <sup>2</sup> page for more information.	
<b>LOCATION</b>	Casa Loma Campus		
<b>DURATION</b>	1 year (3 semesters)		
<b>STARTING MONTH</b>	September, January		
<b>CREDENTIAL</b>	Ontario College Graduate Certificate		
<b>YEAR OF STUDY</b>	2016-2017		
<b>METHOD OF STUDY</b>	FT		
<b>APPLY TO</b>	Ontario Colleges <sup>1</sup>		

The Network and System Security Analysis (NaSSA) graduate certificate program at George Brown College is designed to meet the high demand for information system security analysts and related IT security professionals across multiple sectors – including high demand sectors such as Consulting Services, Finance, and Health Care.

Students graduating from this program will enter into a specialized information and communication technology (ICT) field. They will have the capabilities to assess and evaluate security risks and threats to physical and digital infrastructure, develop and implement security contingency planning, and lead the development of policies and procedures to ensure that security risk is minimized.

### DELIVERY

- This full-time program is delivered in a blended format, combining face-to-face sessions with online delivery.
- This delivery format is designed to accommodate those who wish to remain working, or those who wish to work while taking this program.
- This schedule will require that learners attend classes, generally, in the late afternoons and evenings through the week, plus all day Saturday.

### THE SECURITY INNOVATIONS LABORATORY (SILO)

Casa Loma Campus, as part of a \$20 million expansion, will be home to George Brown College's **Security Innovations LabOratory (SILO)** – a new learning space to support collaboration between our industry partners and students. SILO will be a standalone lab/sandbox intended to replicate live environments that can be configured to include firewalls, switches, routers, access points and mobile hardware for testing. This space is intended to be the home of the NaSSA program, as well as to be commercially available to our partner organizations – bringing industry into the learning environment! In addition to SILO, George Brown College has invested over \$1.5 million to create up-to-date wireless, security, VoIP and RF labs so that all students gain individual hands-on experience.

### PROGRAM STANDARDS AND LEARNING OUTCOMES

Each George Brown College certificate, diploma, advanced diploma and graduate certificate program is expected to deliver specific program learning outcomes. Program learning outcomes are statements that describe the knowledge and skills that students are expected to demonstrate by the end of their program of study. Programs are designed to deliver both vocation or discipline-specific learning outcomes and more generic essential employability skills (including communication, numeracy, critical thinking and problem solving, information management, interpersonal and personal skills).

In addition to the aforementioned learning outcome requirements, College programs are required to provide students with exposure to a breadth of learning beyond their vocational field, to increase their awareness of the society and culture in which they live and work. This breadth requirement is addressed through additional mandatory General Education courses in the program curriculum.

To see the relevant program learning outcomes for your specific program of study, please visit [georgebrown.ca/programs/learning-standards-and-outcomes](http://georgebrown.ca/programs/learning-standards-and-outcomes)

### REQUIRED COURSES

#### SEMESTER 1

Code	Course Name
COMP4041	Operating Systems Security I
COMP4042	Introduction to Routing and Switching Network Technologies
COMP4043	Data Governance for Private, Confidentiality, and Regulatory Compliance
COMP4044	Cyberspace Security
COMP4046	Network and Computer Security Fundamentals
COMP4047	ICT Competencies I

**SEMESTER 2**

Code	Course Name
COMP4053	Advanced Data Network Security
COMP4054	Operating Systems Security 2
COMP4055	Cryptography and Network Security
COMP4056	Secure Network Architecture
COMP4057	Ethical Hacking and Penetration Testing
COMP4058	Security Trends and Issues
COMP4059	ICT Competencies 2

**SEMESTER 3**

Code	Course Name
COMP4061	Contingency Planning and Disaster Recovery
COMP4060	Advanced Risk Analysis
COMP4063	Capstone Industry Project

**ELECTIVE SPECIALIZATIONS**

Code	Course Name
COMP4071	Advanced Security Management and Auditing*
COMP4075	Advanced Finance Sector Security Analysis*
COMP4076	Defensive Programming and Application Security
COMP4074	Securing Wireless and Mobile Networks Access
COMP4073	Advanced Firewall, IDS/IPS and Virtual Private Networks(VPNs) Technology

\* must be taken concurrently

**YOUR CAREER**

The growth of cyber security represents a strategic, social and business risk for organizations and the nation at large. In the ICTC 2011 – 2016 Outlook Report (published in 2011), security was identified as a leading technology concern by companies surveyed. This concern was driven by regulatory compliance, liability concerns, and the serious damage to an organization's reputation arising from a publicized security breach.

As a result of the growth in ICT-related theft, fraud and damages, employer demand for information systems security professionals is increasing, and growth is projected to continue. A Global Information Security Workforce Study indicated that the number of information system security professionals worldwide has risen more than 40%, from 1.6 million in 2008, to 2.7 million in 2012.

**FUTURE STUDY OPTIONS**

Students who successfully complete this program may qualify for entry into Ontario college graduate certificate and university degree programs.

For further information, see [georgebrown.ca/transferguide](http://georgebrown.ca/transferguide).

**ADMISSION REQUIREMENTS**

- 3-year College Diploma or Bachelor's Degree in Information Technology, Computer Sciences, or a related field
- One year related work experience (resume required)

**ENGLISH PROFICIENCY**

English language proficiency is essential. Applicants with international transcripts who do not provide English proficiency test results must test at the College level in the George Brown College English assessment to be considered for admission.

Please visit [georgebrown.ca/englishproficiency](http://georgebrown.ca/englishproficiency) for more details

**COURSE EXEMPTIONS:**

College or university credits may qualify you for course exemptions. Please visit [georgebrown.ca/transferguide](http://georgebrown.ca/transferguide) for more information.

**International students:** Visit the International Admissions<sup>3</sup> page for more information.

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## WIRELESS NETWORKING PROGRAM (POSTGRADUATE) (T411)

<b>PROGRAM NAME</b>	Wireless Networking	<b>TUITION</b>	
<b>COURSE CODE</b>	T411	<b>ADDITIONAL COST</b>	
<b>SCHOOL</b>	School of Computer Technology		
<b>CENTRE</b>	Arts, Design and Information Technology		
<b>LOCATION</b>	Casa Loma Campus		
<b>DURATION</b>	3 semesters		
<b>STARTING MONTH</b>	September, January		
<b>CREDENTIAL</b>	Ontario College Graduate Certificate		
<b>YEAR OF STUDY</b>	2016-2017		
<b>METHOD OF STUDY</b>	FT		
<b>APPLY TO</b>	Ontario Colleges <sup>1</sup>		

### TUITION

\$5,550.00 †

### ADDITIONAL COST

† Amounts listed are the total of tuition, materials, student service and ancillary fees for **three** semesters of programs starting in fall 2015. Fees are subject to change for programs starting in fall 2016 and at later dates.

**International students:** Visit the International Fees and Related Costs<sup>2</sup> page for more information.



Wireless

communications are pervasive in our lives. They have grown in recent years to include everything from personal communications networks to governments, hospitals and neighborhood businesses. And there's no end in sight to the growth of our wireless world.

George Brown College's leading-edge Wireless Networking postgraduate program is designed to put you at the center of this exciting world by giving you high-demand skills in radio frequency (RF), cellular, broadband and advanced data communications.

We offer you a unique choice of career direction. You can specialize in:

- Long Term Evolution (LTE) and Broadband Technologies
- Advanced Network Security
- Voice over Internet Protocol (VoIP) Technologies

Other program advantages:

- We have departed from the traditional lecture-based course structure. Students learn in labs by practicing on the equipment that they will use when they enter the workforce.
- In conjunction with our corporate partners, students may be involved in real-world projects for one or two days per week, making proposals and then working in teams to plan projects, set schedules and achieve goals.
- George Brown has created up-to-date wireless, security, VoIP, RF and LTE labs so that all students gain individual hands-on experience.
- Students will have access to NETLAB, giving them remote access to the Cisco Academy and VMWare labs.
- After finishing the program, students will have bridging options to other postsecondary and postgraduate programs in the school of Computer Technology.

**Note:** In this rapidly changing industry, program improvements are being made on an ongoing basis, which may result in course changes. Changes are made in consultation with our Program Advisory Committee, which is composed of academic staff and industry representatives from small, medium-sized and large corporations.

\*If you enroll in the program in January, you must complete semester 2 in the summer (May to August) of the same year.

### PROGRAM STANDARDS AND LEARNING OUTCOMES

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In addition to the aforementioned learning outcome requirements, College programs are required to provide students with exposure to a breadth of learning beyond their vocational field, to increase their awareness of the society and culture in which they live and work. This breadth requirement is addressed through additional mandatory General Education courses in the program curriculum.

To see the relevant program learning outcomes for your specific program of study, please visit [georgebrown.ca/programs/learning-standards-and-outcomes](http://georgebrown.ca/programs/learning-standards-and-outcomes)

### REQUIRED COURSES

#### SEMESTER 1

Code	Course Name
COMP1219	Data Communications Fundamentals
COMP1153	Introduction to RF/Wireless Communication Principles
COMP1154	Equipment Deployment, Interconnectivity and Wiring
COMP1156	Introduction to UNIX
COMP1201	Wireless Networking Service and Applications
COMP1205	IT Best Practices

**SEMESTER 2**

Code	Course Name
COMP1159	Introduction to Voice Network Technology and Techniques
COMP1160	RF/Wireless Techniques
COMP1161	Security and Advanced Data Network Technologies
COMP1207	Data Centre and Virtualization Technology
COMP1208	Server Operating System Technologies

**SEMESTER 3**

Code	Course Name
COMP2105	Advanced Network Analysis
COMP2106	Advanced Network Management
COMP2107	Team Project: Network Design

For the field projects, students will work in teams supervised by our industry partners.

Students in the third semester are required to choose one set of program specialization courses. Minimum enrolment and grade point averages are required for each option to be offered.

**SET 1 – LONG TERM EVOLUTION (LTE) AND BROADBAND TECHNOLOGIES.**

Code	Course Name
COMP2145	LTE and 4G Technologies
COMP2146	LTE Core and IMS Deployment

**SET 2 – ADVANCED NETWORK SECURITY**

Code	Course Name
COMP1214	Advanced Security Infrastructure and Deployment Technologies
COMP1215	Advanced Network Security Technologies

**SET 3 – VOICE OVER INTERNET PROTOCOL**

Code	Course Name
COMP2118	VoIP Network Technologies
COMP2119	VoIP Network Deployment and Maintenance

**YOUR CAREER**

The specialized education in this program helps graduates get jobs in a wide variety of positions connected with wireless LAN support, wireless service providers, cellular and broadband providers, data centres and enterprise system support.

**ADMISSION REQUIREMENTS**

- 3-year College Diploma or Bachelor's Degree\*

\* Please note that **Domestic** applicants who are submitting International transcripts require a Canadian equivalency evaluation. This can be obtained through ICAS (International Credential Assessment Service) at [icascanada.ca](http://icascanada.ca) or WES (World Education Services) at [wes.org/ca](http://wes.org/ca)<sup>3</sup>

**ENGLISH PROFICIENCY:**

- A TOEFL score of 550 (or equivalent), where applicable (visit [georgebrown.ca/englishproficiency](http://georgebrown.ca/englishproficiency) for more information). Applicants with international transcripts where acceptable English proficiency results are not supplied must test at the College level in the George Brown College English assessment to be considered.

**COURSE EXEMPTIONS:**

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**International students:** Visit the International Admissions<sup>4</sup> page for more information.

"George Brown College allowed me to gain hands-on experience and develop networks with people in the field. Every day I use the concepts and skills I gained in the program."

**Nancy Nangia** (Graduate 2008, Wireless Networking)

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