

# Information Technology: Bachelor of Technology

<b>Faculty of Business</b>	kwantlen.ca/business
<b>Implementation Date</b>	01-Sep-2011
<b>Start Date(s)</b>	September January May
<b>Admission Type</b>	Open admission Selective entry
<b>Enrolment Type</b>	Open enrolment
<b>Program Type</b>	Undergraduate
<b>Credential Granted</b>	Baccalaureate Degree
<b>Offered At</b>	Surrey
<b>Format</b>	Full-time Part-time Co-op
<b>How to Apply</b>	www.kwantlen.ca/admission

## DESCRIPTION

The Bachelor of Technology in Information Technology (BTech in IT) program allows students to earn a bachelor degree that prepares them for employment in the IT industry in Canada or for graduate school. Canada expects to hire over 100,000 new workers in the IT industry between 2011 and 2016. The BTech (IT) degree offers courses in computer hardware, operating systems, computer networks that lead to CISCO certification, computer security, server systems, virtualization and cloud computing, wireless networks, web programming, web design, web application development, mobile and social media application development, IT program management and entrepreneurship. Graduates of the program will work as system administrators, system analysts, networking professionals, software developers, web developers, mobile app developers, and IT project managers.

Specific features of this program are:

- Recently revised curriculum with contemporary course contents
- Specializations in computer network administration and security, and mobile and web application development that provide focused, in-depth training in key IT areas
- Practical projects in most courses
- Course offerings during the day and in the evening for Fall, Spring and Summer semesters provide maximum flexibility for student schedules
- Year-long capstone project course provides students opportunities for advanced research and opportunities to work with real projects from industry
- Co-op opportunities with wide range of employers while earning a degree
- Professional networking opportunities to prepare for employment after graduation
- Flexible exit points with certificate (after 1 year), diploma (after 2 years) and degree (after 4 years)

## CAREER OPPORTUNITIES

Graduates of this program may find employment in the following areas:

- Enterprise network system administration
- Information System security
- Web design, development and integration
- Mobile software application development
- Software analysis design and development
- Software quality assurance, testing and validation
- Enterprise resource planning (ERP) systems implementation
- Project management
- Hardware and software technical support
- Wireless systems development

## PROGRAM ADMISSION REQUIREMENTS

### Year 1 Admission:

General university admission requirements apply to this program including the undergraduate-level English Proficiency Requirement.

**Please Note:** One post-secondary English course, equivalent to Kwantlen's ENGL 1100, is a graduation requirement for all Kwantlen degrees. Students wishing to complete the program without having to undertake any preparatory courses must enter with English 12 with a B grade or the equivalent. Please make an appointment with an Academic Advisor to plan your course selections accordingly.

### Year 3 Admission:

Students may be admitted to the program in year 3 provided they have ONE of the following:

1. Kwantlen's Computer Information Systems (CISY) certificate plus an additional 30 credits (60 credits overall) with a minimum GPA of 2.7.

Graduates of the certificate program will have already completed three of the four required bridging courses (listed below), therefore, the additional 30 credits must include:

- CISY 2314 Database Management Systems (3 credits)
- Nine additional undergraduate courses (minimum 27 credits) from ANY discipline. **Note:** ENGL 1100 (3 credits) is strongly recommended as one of the nine courses.

2. A 60 credit diploma with a minimum GPA of 2.7 in the discipline of computer science, computer information systems, information technology or the equivalent, from a recognized post-secondary institution.
3. 60 university transferable credits with a minimum GPA of 2.7 from a recognized post-secondary institution, including the required bridging courses listed below.

### BRIDGING COURSES

Students who have a minimum of 60 post-secondary credits with a minimum GPA of 2.7 must have also completed the following bridging courses:

- INFO 1112 Principles of Program Structure and Design (formerly CISY 1113)

- INFO 1113 Systems Analysis and Design (formerly CISY 1212)
- INFO 1212 Networking Technologies I (formerly CISY 1215)
- INFO 2312 Database Management Systems (formerly CISY 2314)

### Admission Requirements for the September 2013 Intake

Program admission requirements for this program are changing, effective for the Fall 2013 intake. See the 2013-14 Calendar for more information.

## PROGRAM REQUIREMENTS

The degree program requires a minimum of 120 credits of required courses and electives. Students admitted to year 3 will have already completed a minimum of 60 credits. If a first-year English course was not completed prior to year 3 entry, degree completion will require more than 120 credits in total.

### Year 1 and 2

#### 60 credits including:

#### Year 1 courses

INFO 1111	Introduction to Computer Hardware and Software	3 credits
INFO 1112	Principles of Program Structure and Design	3 credits
INFO 1113	Systems Analysis and Design	3 credits
CMNS 1140	Introduction to Professional Communication	3 credits
PHIL 1150	Introduction to Formal Logic	3 credits
INFO 1211	Operating Systems Principles And Applications	3 credits
INFO 1212	Networking Technologies I	3 credits
INFO 1213	Web Application Development	3 credits
INFO 1214	Discrete Mathematics for Information Technology	3 credits

#### Year 2 courses

ENGL 1100	Introduction to University Writing	3 credits
INFO 2311	Networking Technologies II	3 credits
INFO 2312	Database Management Systems	3 credits
INFO 2313	Object-Oriented Programming	3 credits
INFO 2411	Foundations of Computer Security (under development)	3 credits
INFO 2412	Management of Information Systems	3 credits
INFO 2413	System Development Project	3 credits

#### Courses taken during Year 1 and 2

BUSI 1110	Fundamentals of Business in Canada	3 credits
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BUQU 1230	Business Statistics	3 credits
Any two undergraduate level courses 1100 level or higher*		6 credits

\* Students are strongly encouraged to take BUQU 1130 - Business Mathematics.

### Years 3 and 4

60 credits are required to complete the degree. Students may select their courses in a way that helps them specialize in Network Administration and Security (NAS) or Mobile and Web Application Development (MWAD). Recommended course choices are listed below.

Third and fourth year Information Technology courses are scheduled at times that try to accommodate the needs of students who work during the day.

#### YEAR 3

##### Four of:

INFO 3110	Professional Communications in Information Technology	3 credits
INFO 3150	Object-Oriented Software Engineering	3 credits
INFO 3210	Distributed Systems	3 credits
INFO 3250	Content Management & Information Architecture	3 credits
INFO 3280	Information Technology Project Management	3 credits

##### And:

One approved business liberal education elective	3 credits
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##### And one of:

LBED 4210	Ethics and Social Issues (discontinued)	3 credits
PHIL 3033	Business Ethics	3 credits

##### And any four of:

INFO 3125	Data Structures (under development)	3 credits
INFO 3135	Advanced Web Application Development	3 credits
INFO 3160	Network Operating Systems	3 credits
INFO 3170	Security of Enterprise Networks	3 credits
INFO 3180	Wireless Networks (under development)	3 credits
INFO 3225	Web Multimedia	3 credits
INFO 3235	Software Quality Assurance (under development)	3 credits
INFO 3240	Enterprise Resource Planning Systems	3 credits
INFO 3241	Identity Management (under development)	3 credits

INFO 3245	Mobile Programming I	3 credits
INFO 3246	Mobile Programming II	3 credits
INFO 3290	Networking Technologies III	3 credits

#### YEAR 4

##### All of:

INFO 4190	Integration Project I	3 credits
INFO 4290	Integration Project II	3 credits
INFO 4310	Entrepreneurial Development in Information Technology	3 credits
Two approved business liberal education electives		6 credits

##### And any five of:

INFO 4110	Cloud Computing	3 credits
INFO 4115	Website Design	3 credits
INFO 4120	Digital Forensics	3 credits
INFO 4125	Web Site Security (under development)	3 credits
INFO 4210	Human Factors and Computer Interface Design	3 credits
INFO 4225	Animations	3 credits
INFO 4235	Special Topics in Web and Mobile Application Development	3 credits
INFO 4250	Special Topics in Network Administration and Security	3 credits
INFO 4330	Data Warehousing and Data Mining	3 credits
INFO 4370	Security of Wireless Systems	3 credits
INFO 4380	Wireless Sensor Networks	3 credits

### Network Administration and Security (NAS) Specialization

Students can select their Year 3 and 4 courses in a way that satisfies the requirements for a specialization in network administration and security.

To complete the Bachelor of Technology with a specialization in Network Administration and Security, students must successfully complete:

Four Year 3 courses selected from:	And five Year 4 courses selected from:
<ul style="list-style-type: none"> <li>■ INFO 3160</li> <li>■ INFO 3170</li> <li>■ INFO 3180</li> <li>■ INFO 3240</li> <li>■ INFO 3241</li> <li>■ INFO 3290</li> </ul>	<ul style="list-style-type: none"> <li>■ INFO 4110</li> <li>■ INFO 4120</li> <li>■ INFO 4330</li> <li>■ INFO 4370</li> <li>■ INFO 4380</li> <li>■ INFO 4250</li> </ul>

### Mobile and Web Application Development (MWAD):

Students can select their Year 3 and 4 courses in a way that satisfies the requirements for a specialization in mobile and web application development.

To complete the Bachelor of Technology with a specialization in Mobile and Web Application Development, students must successfully complete:

Four Year 3 courses selected from:	And five Year 4 courses selected from:
<ul style="list-style-type: none"> <li>■ INFO 3125</li> <li>■ INFO 3135</li> <li>■ INFO 3225</li> <li>■ INFO 3235</li> <li>■ INFO 3245</li> <li>■ INFO 3246</li> </ul>	<ul style="list-style-type: none"> <li>■ INFO 4115</li> <li>■ INFO 4210</li> <li>■ INFO 4125</li> <li>■ INFO 4225</li> <li>■ INFO 4235</li> </ul>

### CO-OPERATIVE EDUCATION

The Bachelor of Technology – Information Technology degree is offered with a Co-operative Education option. Co-operative Education gives a student the opportunity to apply the skills gained during academic study in paid, practical work experience semesters. Degree students can complete a minimum of three work terms while completing their degree. Work terms generally occur full-time in separate 4 month work semesters but may also be available part-time over an 8 month continuous (parallel) placement. Work semesters alternate with academic study.

Students wishing to enter and participate in the Co-op Option must meet the following requirements:

#### Declaration/Entrance Requirements:

- Good academic standing

#### Program Continuance Requirements:

Continuation in the co-op option requires:

- Completion of COOP 1101 prior to 75 program credits (based on first year entry)
- Minimum program GPA of 2.5

#### Work Term Requirements:

Participation and enrolment in a co-op work term requires:

- Successful completion of COOP 1101
- Successful completion of 30 program credits based on first year entry
- Instructor permission

### Co-op Requirements

The Co-operative Education designation requires successful completion of the following courses:

#### Required:

COOP 1101	Job Search Techniques	1 credit
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#### And all of:

COOP 1150*	Co-op Work Semester 1	9 credits
COOP 2150*	Co-op Work Semester 2	9 credits

COOP 3150\* Co-op Work Semester 3 9 credits

**Optional:**

COOP 4150\* Co-op Work Semester 4 9 credits

\* Part-time (Parallel) work terms may be taken over two semesters as COOP 1150A/1150B, COOP 2150A/2150B, COOP 3150A/3150B, or COOP 4150A/4150B respectively.

**Additional requirements:**

In addition to the requirements stated above, all Co-op students must satisfy the General Co-operative Education Requirements.

**OTHER INFORMATION**

Students enrolled in this program are expected to have their own laptop computers.

**CREDENTIAL AWARDED**

Upon successful completion of this program, students are eligible to receive a **Bachelor of Technology in Information Technology**.

Upon successful completion of this program with co-operative education, students are eligible to receive a **Bachelor of Technology in Information Technology, Co-operative Education Option**.