Queen’s was the pioneer in undergraduate Biomedical Computing, one of today’s most promising fields in health research. Biomedical Computing goes far beyond simply bringing computers into the lab. The ways in which computers can improve health care are almost limitless. Computers are used to plan surgeries, simulate patient behaviour and visualize complex biological models. They shorten the cycles for medical research, just as they extend its boundaries.

Sample Year by Year

**1ST YEAR**
- CISC 121/3.0
- CISC 124/3.0
- BIOL 102/3.0
- BIOL 103/3.0
- CHEM 112/6.0
- (CISC 102/3.0 and MATH 112/3.0) or (CISC 102/3.0 and MATH 111/6.0 or MATH 110/6.0)
- MATH 120/6.0 or MATH 121/6.0

**2ND YEAR**
- STAT 263/3.0 or 3.0 units from STAT_Options
- CISC 203/3.0
- CISC 204/3.0
- CISC 220/3.0
- CISC 221/3.0
- CISC 223/3.0
- CISC 235/3.0
- CISC 260/3.0
- BIOL 205/3.0
- BCHM 218/3.0

**3RD YEAR**
- CISC 271/3.0
- CISC 320/3.0
- CISC 330/3.0
- CISC 332/3.0
- CISC 352/3.0
- CISC 365/3.0
- BIOL 331/3.0 or BCHM 315/3.0
- 6.0 units of electives

**4TH YEAR**
- CISC 471/3.0
- CISC 472/3.0
- CISC 497/3.0
- CISC 499/3.0 or CISC 500/6.0
- 9.0 units of electives

Note that degree requirements are revised regularly. The most current requirements, including course lists and options, are found in the Academic Calendar at: QUartsci.com/academic-calendar

**Plan:**
105.0 units plus electives to a total of 120 units.

**Core**
- STAT 263/3.0 or 3.0 units from STAT_Options
- CISC 203/3.0
- CISC 204/3.0
- CISC 220/3.0
- CISC 221/3.0
- CISC 223/3.0
- CISC 235/3.0
- CISC 260/3.0
- BIOL 205/3.0
- BCHM 218/3.0

**Option**
- CISC 271/3.0
- CISC 320/3.0
- CISC 330/3.0
- CISC 332/3.0
- CISC 352/3.0
- CISC 365/3.0
- BIOL 331/3.0 or BCHM 315/3.0
- 6.0 units of electives

**Electives**
- CISC 471/3.0
- CISC 472/3.0
- CISC 497/3.0
- CISC 499/3.0 or CISC 500/6.0
- 9.0 units from BMCO_Options
- 9.0 units of electives

**Core: 63.0 units**
- STAT 263/3.0 or 3.0 units from STAT_Options
- CISC 203/3.0
- CISC 204/3.0
- CISC 220/3.0
- CISC 221/3.0
- CISC 223/3.0
- CISC 235/3.0
- CISC 260/3.0
- BIOL 205/3.0
- BCHM 218/3.0

**Option: 39.0 units**
- CISC 271/3.0
- CISC 320/3.0
- CISC 330/3.0
- CISC 332/3.0
- CISC 352/3.0
- CISC 365/3.0
- BIOL 331/3.0 or BCHM 315/3.0
- 6.0 units of electives

**Electives: 18.0 units**
- CISC 471/3.0
- CISC 472/3.0
- CISC 497/3.0
- CISC 499/3.0 or CISC 500/6.0
- 9.0 units from BMCO_Options
- 9.0 units of electives

**Add a Certificate to your degree**
- Employment Relations
- Entrepreneurship, Innovation and Creativity
- Disability and Physical Activity
- French for Professionals
- Geographic Information Science
- Global Action and Engagement
- Indigenous Languages and Cultures
- International Studies
- Media Studies
- Sexual and Gender Diversity
- Urban Planning Studies
- QUartsci.com/certs

**Dreaming of a career in Biomedical Computing?**
- Learn from outstanding professors who are internationally recognized experts and committed educators.
- Gain the skills and theoretical knowledge you’ll need to excel as a computer scientist.
- Take courses which reflect the sweeping uses of computing in all aspects of modern life.
- Test the waters and explore your passions outside of computing while still immersed in our diverse multidisciplinary offerings.

**Susan Bartlett** is a Queen’s University alumna with a BSc in Biomedical Computing. Through skills honed at Queen’s, Susan leads teams of designers, researchers, and business strategists to deliver innovative solutions at Bridgeable. She is passionate about understanding the complex interactions people have with the world around them.

**Employment Relations**
- Entrepreneurship, Innovation and Creativity
- Disability and Physical Activity
- French for Professionals
- Geographic Information Science
- Global Action and Engagement
- Indigenous Languages and Cultures
- International Studies
- Media Studies
- Sexual and Gender Diversity
- Urban Planning Studies
- QUartsci.com/certs

**COURSES YOU NEED**
BIOMEDICAL COMPUTING

**Plan:**
- 105.0 units plus electives to a total of 120 units.

**Core**
- STAT 263/3.0 or 3.0 units from STAT_Options
- CISC 203/3.0
- CISC 204/3.0
- CISC 220/3.0
- CISC 221/3.0
- CISC 223/3.0
- CISC 235/3.0
- CISC 260/3.0
- BIOL 205/3.0
- BCHM 218/3.0

**Option**
- CISC 271/3.0
- CISC 320/3.0
- CISC 330/3.0
- CISC 332/3.0
- CISC 352/3.0
- CISC 365/3.0
- BIOL 331/3.0 or BCHM 315/3.0
- 6.0 units of electives

**Electives**
- CISC 471/3.0
- CISC 472/3.0
- CISC 497/3.0
- CISC 499/3.0 or CISC 500/6.0
- 9.0 units from BMCO_Options
- 9.0 units of electives

**Notes:**
- Degree requirements are revised regularly. The most current requirements, including course lists and options, are found in the Academic Calendar at: QUartsci.com/academic-calendar
- Thresholds are made on a competitive basis and are updated annually. For the latest information, please visit: QUartsci.com

**2018-19 thresholds**
- **2.6** cGPA: AUTOMATIC ACCEPTANCE
  - min B in CISC 124

**2.3** cGPA: PENDING LIST
- min B- in CISC 124

**Specialization (Computing) Bachelor of Computing (Honours)**

**BMCO-P-BCH**

**Faculty of Arts and Science**
- Goodwin Hall
- 350 Union Street
- 613-533-6050
cs.queensu.ca
# Biomedical Computing

## Specialization Map

### 1st Year

**Get the Courses You Need**
- In first year you will have the chance to explore the foundations of Biomedical Computing along with some electives.
- See the back page for specific courses to consider.
- Attend Majors Night in the Winter term to learn more about Plan options.

**Get Relevant Experience**
- Join teams or clubs on campus such as the Mostly Autonomous Sailboat Team (MAST).
- Participate in Open Source Development projects. Join the Queen's ACM Programming team. See the AMS Clubs Directory or the Queen's Get Involved page for more ideas.

**Get Connected with the Community**
- Volunteer on or off campus with different community organizations such as Women in the School of Computing Group. Offer your services to a non-profit organization. Organize after school programming or robotics clubs in the local elementary or secondary schools.

**Get Thinking Globally**
- Prepare for work or studies in a multi-cultural environment by taking QUC's Intercultural Competency Certificate, and research possible immigration regulations.
- Speak to a QUC advisor to get involved in their programs, events, and training opportunities.

**Get Ready for Life After Graduation**
- Grappling with program decisions? Go to Majors Night or get some help wondering about career options from Career Services.
- Build your transferable skills in time management, organization, writing and more with Student Academic Success Services.

### 2nd Year

**Get the Courses You Need**
- Start going deeper into the discipline of Biomedical Computing, while considering a certificate such as Media Studies. Attend Degree in the Fall term to learn more about Certificates and Internship options.
- Want to make sure your academics are where you want them to be? Visit SASS (Student Academic Support Services) and the Writing Centre for some help.

**Get Relevant Experience**
- Talk to the School and their faculty about research opportunities through Undergraduate Summer Research Assistantships (NSERC/USRA).
- Look into summer jobs by talking to the dept. or Career Services about work through SWEP or Work-Study. Join the COMPSSA Site Services team to develop websites. Be a COMPSSA tutor.

**Get Connected with the Community**
- Get involved with the Computing Students Association (COMPSSA). Consider volunteering with initiatives such as high school programming competitions, Hour of Code, or local FIRST Robotic teams. Consider entrepreneurial opportunities via programs like the Queen's Innovation Connector Summer Initiative (IQCSI).

**Get Thinking Globally**
- Is an exchange in your future? Start thinking about where you would like to study abroad. Apply in January for a third year exchange through the International Programs Office.

**Get Ready for Life After Graduation**
- Explore careers of interest by reading books in the Career Services Information Area, such as Careers in High-Tech. For more information check out Career Cruising or by finding and connecting with alumni on LinkedIn.

### 3rd Year

**Get the Courses You Need**
- A chance to start grouping courses in areas of interest, or to keep it more general and explore many areas of Biomedical Computing. Meet with an Academic Advisor to make sure you are on track and have planned out your courses for next year — for some ideas, see the back page.

**Get Relevant Experience**
- Stay during the summer as an assistant to a faculty member. Consider applying to the 12-16 month Queen's Undergraduate Internship Program through Career Services. Consult the School's FAQ and consider applying.

**Get Connected with the Community**
- Connect with professors at events or workshops hosted by the School, COMPSSA and WISC. Connect with alumni by joining the LinkedIn group Queen's Connects. Attend conferences like the Canadian Celebration of Women in Computing (CAN-CWIC).

**Get Thinking Globally**
- Build your intercultural competence by getting involved with other cultures or by practicing or improving your language skills.

**Get Ready for Life After Graduation**
- Start focusing on areas of interest. Research education requirements for careers of interest. If needed, prepare to take any required tests (like the MCAT or GMAT) and get help thinking about Grad School from Career Services.

### 4th or Final Year

**What will I learn?**
- A degree in Computing can equip you with valuable and versatile skills, such as:
  - Ability to design, develop and maintain software systems
  - Oral and written communication to summarize complex ideas and present data in visual formats
  - Ability to model and solve a diverse range of problems
  - Critical thinking and systematic problem-solving approaches
  - Proficiency in mathematics and logical computational thinking
  - Resource and time management
  - Project management

**Where can I go?**
- A degree in Computing can take your career in many directions. Many students choose to continue their academic inquiry with a Master’s. Our students are equipped with a strong foundation for careers in:
  - 3D animation
  - Biomedical computing
  - Biotechnology
  - Computer programmer
  - Cryptographer
  - Database administrator
  - Game development/design
  - Graphic artist
  - Information architect
  - Robotics
  - Software architect
  - Software developer
  - Software tester
  - Sound designer
  - Systems analyst
  - Web developer

- Taking time to explore career options, build experience and network can help you have a smooth transition to the world of work after graduation.