

Biomedical Computing SPECIALIST MAP

BACHELOR OF COMPUTING HONOURS (SPECIALIZATION)



Queen's
UNIVERSITY

MORE WAYS YOU CAN:

GET THE COURSES YOU NEED

1ST AND 2ND YEAR

1st year: Take BIOL 102, 103, CHEM 112.

Check out program-specific courses such as CISC 271, 330, 471, 472.

3RD AND 4TH YEAR

For upper year requirements, see the [School of Computing website](#).

GET RELEVANT EXPERIENCE

Join teams or clubs on campus such as [Queen's Science Undergraduate Research Journal \(QSURJ\)](#), [MEDLIFE](#) and [LifeBeat Newspaper](#).

Consider volunteering at local hospitals and health centres.

Look for research opportunities at [Computing Research Groups](#), such as [Medical Informatics Lab](#), [Computer Assisted Surgical Interventions lab](#), the [Medical Computer Lab](#) or the [Laboratory for Laboratory for Percutaneous Surgery](#).

GET CONNECTED WITH THE COMMUNITY

Volunteer at or attend conferences such as the [Canadian Undergraduate Conference on Healthcare \(CUCOH\)](#).

Join professional associations such as the [Canadian Medical and Biological Engineering Society](#).

WHAT WILL I LEARN?

- Knowledge of human anatomy and biological systems
- Computer programming and computational thinking
- Apply computational approaches to problems in the medical field
- Apply information technology to medicine
- Data mining and analytics

WHERE CAN I GO?

- Medicine
- Dentistry
- Biotechnician
- Medical application programmer
- Medical or pharmaceutical Researcher
- Neuroscience
- Pharmacology

*some careers may require additional training. Careers listed here are only suggestions.

WHY STUDY BIOMEDICAL COMPUTING AT QUEEN'S?

Queen's is the pioneer in undergraduate Biomedical Computing, one of the most promising fields in health research. This innovative program combines the problem-solving capabilities of Computer Science with the most advanced techniques of the life sciences, resulting in endless possibilities for Biological research and improvements in health care.

Caution: *This map is meant as a guide to suggest considerations throughout your university career. The activities, resources, and careers mentioned are possibilities – you are not restricted to them and don't have to follow this exact timeline.

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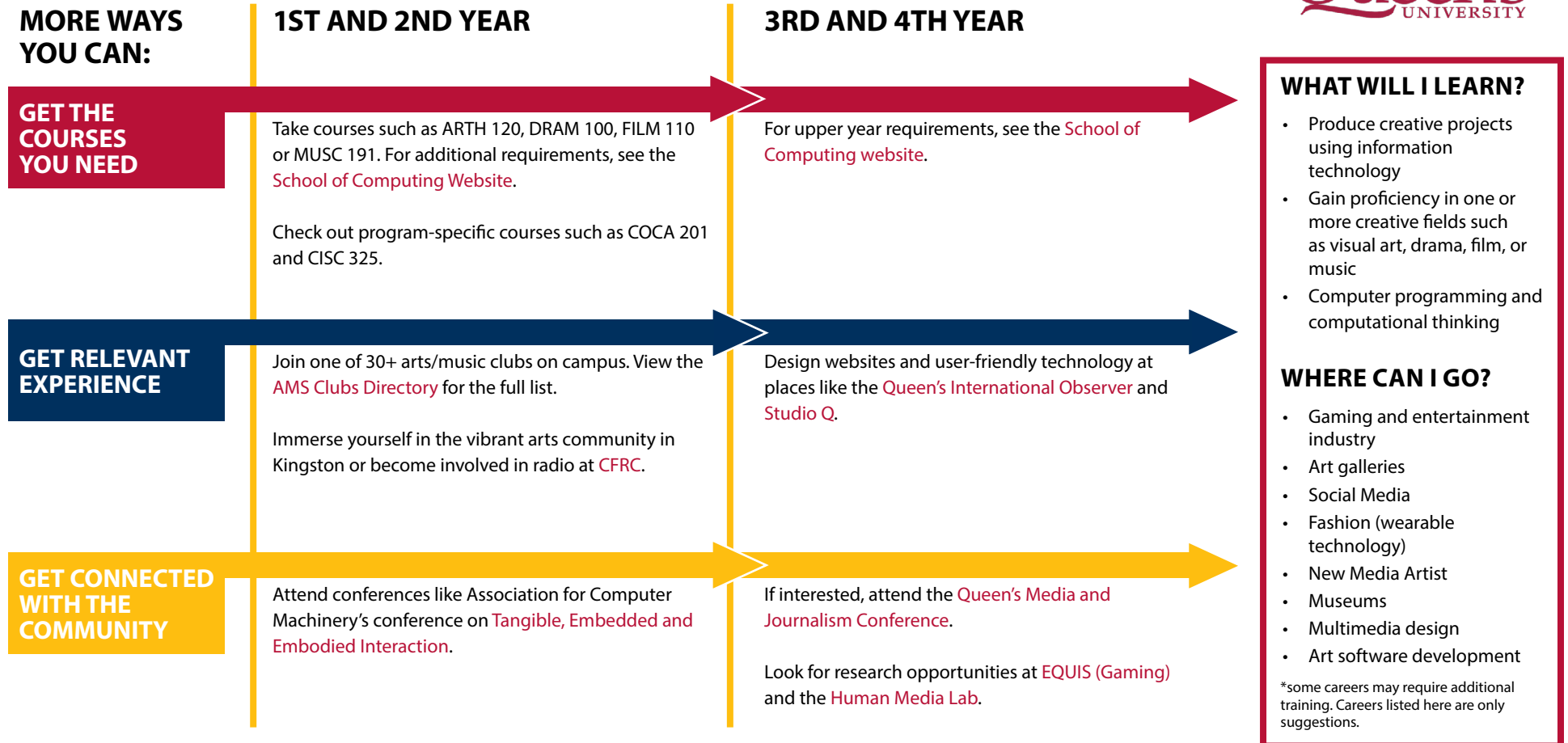
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Computing and the Creative Arts SPECIALIST MAP

BACHELOR OF COMPUTING HONOURS (SPECIALIZATION)



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WHY STUDY COMPUTING AND THE CREATIVE ARTS AT QUEEN'S?

Computing and the Creative Arts is an exciting multi-disciplinary plan in both Computing and the Arts. You'll learn how to develop and use cutting-edge software programs for Music, Art, drama, or Film production. You will acquire the technical expertise to design new applications and take advantage of future trends in digital technology. You'll get the theoretical and historical background necessary to make critical judgments about new approaches to artistic expression and practical knowledge of the tools available to today's creative artists.

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Cognitive Science SPECIALIST MAP

BACHELOR OF COMPUTING HONOURS (SPECIALIZATION)



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MORE WAYS YOU CAN:

GET THE COURSES YOU NEED

1ST AND 2ND YEAR

1st Year: take COGS 100 and two of PSYC 100, LING 100, and PHIL 111 or PHIL 115.

Check out program-specific courses such as COGS 201, 400, and 499.

GET RELEVANT EXPERIENCE

Volunteer or apply to do research through **SWEP** in the Department of Psychology, Linguistics or Philosophy.

Volunteer for **Code the Change** or **Science Rendezvous**.

GET CONNECTED WITH THE COMMUNITY

Attend the **Annual Conference of the Cognitive Science Society** or the **International Joint Conference on Artificial Intelligence**.

3RD AND 4TH YEAR

For Cognitive Science upper year requirements, see the **School of Computing Website**.

Look for research opportunities at School of Computing **Research Groups** like the **Computational Linguistics Laboratory**.

Join professional associations like the **Canadian Artificial Intelligence Association**.

WHAT WILL I LEARN?

- Understand the links between cognition and computer systems and use this knowledge to design intelligent systems
- Deep understanding of Human Computer Interaction
- Computer programming and computational thinking

WHERE CAN I GO?

- Human/computer interaction
- User-interface/website designer
- Language processing research
- Linguist
- Programmer of AI systems
- Neuroscientist

*some careers may require additional training. Careers listed here are only suggestions.

WHY STUDY COGNITIVE SCIENCE AT QUEEN'S?

Computers can play chess – could they one day diagnose illnesses or write symphonies? These are questions explored in our Cognitive Science program. Drawing from psychology, philosophy, linguistics, neuroscience, and computing, this program explores the science of the mind and thought.

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Software Design SPECIALIST MAP

BACHELOR OF COMPUTING HONOURS (SPECIALIZATION)



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MORE WAYS YOU CAN:

GET THE COURSES YOU NEED

1ST AND 2ND YEAR

1st year: same as the Bachelor of Computing (Honours). See the Computing major map.

Check out program-specific courses such as: CISC 223, 326, 327, 422, 498 and SOFT 423.

3RD AND 4TH YEAR

See [School of Computing website](#) for upper year courses.

GET RELEVANT EXPERIENCE

Join one or more of the many computer related clubs on campus including the [Queen's Coding Club](#) or Queen's [Mostly Autonomous Sailboat Team \(QMAST\)](#).

Participate in Open Source Development Projects.

Join the COMPSA Web Development team.

Look for research opportunities at School of Computing [Research Groups](#) like the Software Analysis and Intelligence Lab, or the Software Technology Lab.

GET CONNECTED WITH THE COMMUNITY

Attend the [Canadian University Software Engineering Conference](#).

Join professional associations like [The Association for Computing Machinery \(ACM\)](#) and [The Institute of Electrical and Electronics Engineers \(IEEE\)](#).

WHAT WILL I LEARN?

- Learn the software life cycle
- Analyze, design, build, test and evaluate large-scale software systems
- Learn modern software development methods such as Agile software development and Object-Oriented Analysis

WHERE CAN I GO?

- Software developer
- Software tester
- Software architect
- Mobile app developer
- Web developer
- Systems analyst
- Graphics and game development

*some careers may require additional training. Careers listed here are only suggestions.

WHY STUDY SOFTWARE DESIGN AT QUEEN'S?

Software design is the art and science of software architecture, analysis, development and evolution, for those destined to carry the capabilities of computer systems beyond current limits. Accredited as a Software Engineering program. A game development stream is now available.

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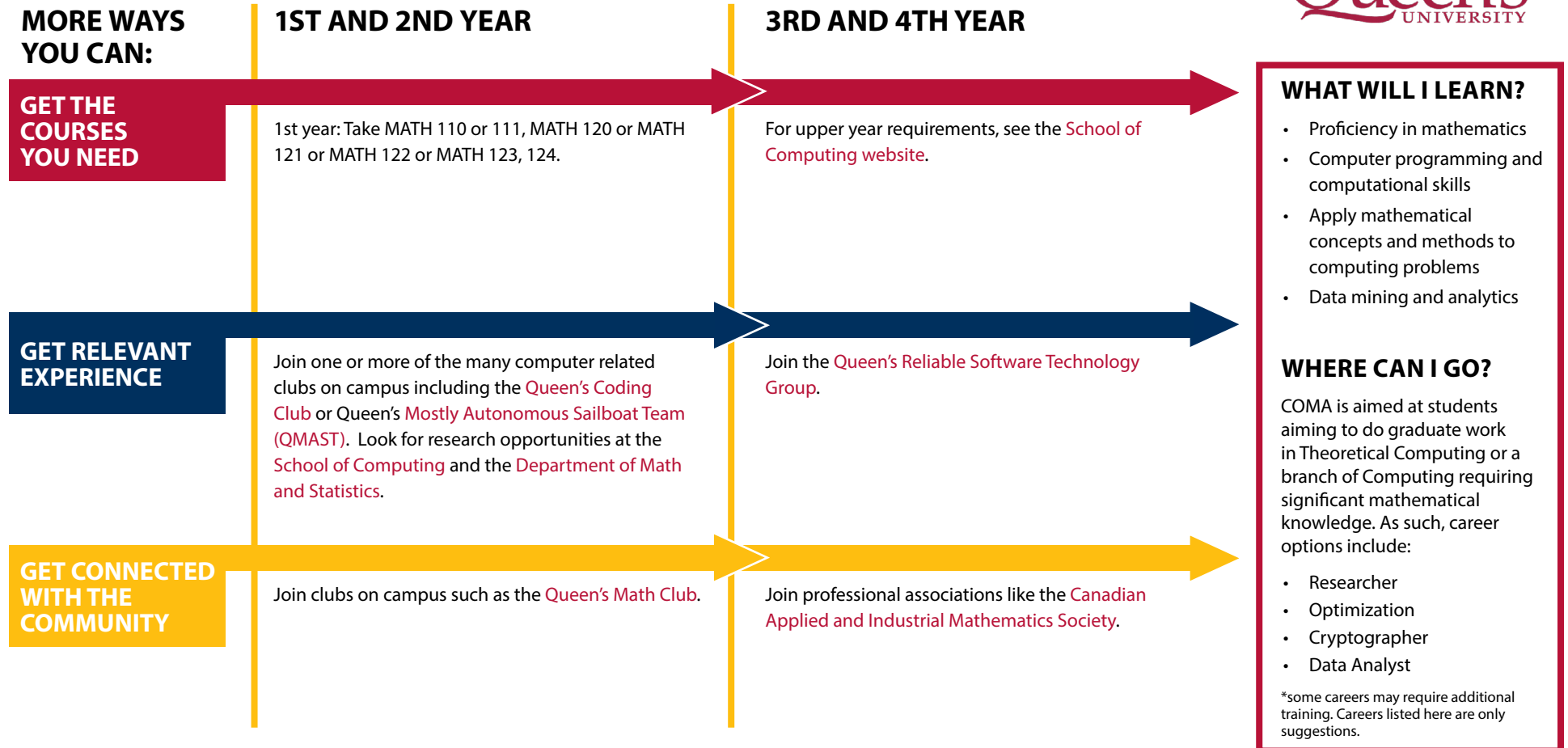
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Computing and Mathematics SPECIALIST MAP

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WHY STUDY COMPUTING AND MATHEMATICS AT QUEEN'S?

The Computing and Mathematics Specialization is intended for students aiming at graduate work in the theory of Computing or in an applied area of Computing that requires significant mathematical expertise, such as communications, optimization, security, or biomedical computing. This program will give students a potent combination of Computer Science and Mathematics as it relates to research in Computing, and will prepare graduates well for advanced degrees or careers in a variety of areas in industry.

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Game Development Option SPECIALIST MAP

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WHY STUDY GAME DEVELOPMENT AT QUEEN'S?

Game Development, a stream of Software Design, provides deep skills and knowledge in the software aspects of computer game development while retaining core Software Design requirements that ensure your qualifications in the software industry or graduate studies.

Game Development is a creative activity, requiring inspiration to spark new ideas, and collaboration among the many types of professionals required to create and evaluate game ideas. Our courses prepare you for careers and research work in this exciting area.

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