Overall Major Requirements

☐ 42-60 non-duplicative computer science credits
☐ A minimum of 36 senior-level credits
☐ All Computer Science majors complete the same 21 credits in Specific Major Requirements, and an additional 21 to 39 credits in senior-level courses which are determined by a student's choice of either the *General Computer Science* Major, or one of the *Databases and Interactive Visualization*, *System and Information Security*, or *Gaming* Streams

Required Courses for the Computer Science Major

Computer Science Majors are required to complete the following courses:
☐ MATH 114 Elementary Calculus I
☐ MATH 120 Basic Linear Algebra I *OR* MATH 125 Linear Algebra I
☐ STAT 151 Introduction to Applied Statistics *OR* STAT 161 Applied Statistics for the Social Sciences

Specific Major Requirements | 21 Credits

☐ CMPT 101 Introduction to Computing I
☐ CMPT 103 Introduction to Computing II
☐ CMPT 200 Data Structures and Algorithms
☐ CMPT 201 Practical Programming Methodology
☐ CMPT 305 Introduction to Object-Oriented Programming
☐ CMPT 395 Introduction to Software Engineering
☐ CMPT 496 Final Project

General Computer Science Stream Requirements | 21 to 39 Credits

Choose 6 credits:
☐ CMPT 204 Algorithms I
☐ CMPT 229 Computer Organization & Architecture
☐ CMPT 250 Human-Computer Interaction I
☐ CMPT 280 Introduction to Computer Security
☐ CMPT 291 Introduction to File and Database Management

Choose 6 credits:
☐ CMPT 306 Non-Procedural Programming Languages
☐ CMPT 315 Web Application Development
☐ CMPT 330 Introduction to Real Time Gaming
☐ CMPT 355 Introduction to Artificial Intelligence
☐ CMPT 360 Introduction to Operating Systems
☐ CMPT 361 Introduction to Networks
☐ CMPT 370 Introduction to Computer Graphics
☐ CMPT 380 Computer Systems Security
☐ CMPT 391 Database Management Systems

Choose 9 to 27 credits:
☐ CMPT _____   ☐ CMPT _____   ☐ CMPT _____
☐ CMPT _____   ☐ CMPT _____   ☐ CMPT _____
☐ CMPT _____   ☐ CMPT _____   ☐ CMPT _____

Databases and Interactive Visualization Stream Requirements | 21 to 39 Credits

☐ CMPT 250 Introduction to Human Computer Interaction
☐ CMPT 272 Formal Systems and Logic
☐ CMPT 291 Introduction to File and Database Management

Choose 12 credits:
- ☐ CMPT 315 Web Application Development
- ☐ CMPT 351 Human Computer Interaction: Usability
- ☐ CMPT 391 Database Management Systems
- ☐ CMPT 450 Information Visualization
- ☐ CMPT 491 Datamining and Advanced Databases

Students can choose up to 18 credits:

☐ CMPT _____	☐ CMPT _____	☐ CMPT _____
☐ CMPT _____	☐ CMPT _____	☐ CMPT _____

Systems and Information Security Stream Requirements	21 to 39 Credits

- ☐ CMPT 229 Computer Organization & Architecture
- ☐ CMPT 280 Introduction to Computer Security
- ☐ CMPT 360 Introduction to Operating Systems
- ☐ CMPT 361 Introduction to Networks
- ☐ CMPT 380 Computer Systems Security
- ☐ CMPT 464 Wireless Networks and Embedded Systems
- ☐ CMPT 480 Computer Network Security

Students can choose up to 18 credits:

☐ CMPT _____	☐ CMPT _____	☐ CMPT _____
☐ CMPT _____	☐ CMPT _____	☐ CMPT _____

Gaming Stream Requirements	21 to 39 Credits

- ☐ CMPT 230 Introduction to Computer Games
- ☐ CMPT 291 Introduction to File and Database Management
- ☐ CMPT 330 Introduction to Real Time Gaming
- ☐ CMPT 370 Introduction to Computer Graphics
- ☐ CMPT 430 3D Game Development and Artificial Intelligence
- ☐ CRWR 295 Introduction to Creative Writing

Choose 3 to 21 credits:

☐ CMPT _____	☐ CMPT _____	☐ CMPT _____
☐ CMPT _____	☐ CMPT _____	☐ CMPT _____
☐ CMPT _____		

Important Planning Notes

1. Courses required for the major may be used to satisfy the breadth requirements in a Bachelor of Arts or Science degree. Please refer to the applicable degree planner for details.

2. Students are required to consult the MacEwan University academic calendar to ensure they meet prerequisites for all courses they enrol in.

3. The prerequisites for CMPT 103 are CMPT 101 or, at the high school level, three credits of intermediate CSE including CSE 2120. If students possess high school level prerequisites, they are required to complete 3 credits of junior-level prerequisites for this major (CMPT 103). If students do not possess high school level prerequisites, they must complete 6 credits of junior-level prerequisites (CMPT 101 and CMPT 103).

4. Students who have taken CMPT 114 and 115 cannot take CMPT 103 or 200 for credit. Students will need to replace CMPT 200 with another senior-level Computer Science course.

5. Students may take CMPT 399 and CMPT 499 for credit a maximum of two times, as long as the course topic is different each time they take any of the courses.

6. Students may take CMPT 496 and CMPT 498 for credits a maximum of two times, as long as the course topic is different each time they take any of the courses.

7. Please keep in mind that course offerings will vary from academic year to academic year. Please refer to MacEwan.ca/Science > Disciplines > Computer Science for further information regarding course offerings.

Computer Science Major (42 to 60 credits)	Total Credits: _____