

2020-2021 BMath CS + Artificial Intelligence Specialization

- Under **Required Courses** and **Electives**, check off the forty unique courses (20.0 units) that you have earned university credit for. **Additional Elective Units** can be *any* course for which you received university credit.
- Verify that the **Required Courses** and **Electives** also satisfy the **Additional Constraints**.

Required Courses

- | | |
|--|--|
| <input type="checkbox"/> 7.5 CS Units | <input type="checkbox"/> 4.5 Math Units |
| <input type="checkbox"/> CS 1[134]5 | <input type="checkbox"/> MATH 1[34]5 |
| <input type="checkbox"/> CS 1[34]6 | <input type="checkbox"/> MATH 1[34]6 |
| <input type="checkbox"/> CS 240 | <input type="checkbox"/> MATH 1[234]7 |
| <input type="checkbox"/> CS 241 | <input type="checkbox"/> MATH 1[234]8 |
| <input type="checkbox"/> CS 245 | <input type="checkbox"/> MATH 2[34]5 |
| <input type="checkbox"/> CS 246 | <input type="checkbox"/> MATH 2[34]7 |
| <input type="checkbox"/> CS 251 | <input type="checkbox"/> MATH 2[34]9 |
| <input type="checkbox"/> CS 341 | <input type="checkbox"/> STAT 2[34]0 |
| <input type="checkbox"/> CS 350 | <input type="checkbox"/> STAT 2[34]1 |
| <input type="checkbox"/> CS 360 or CS 365 | <input type="checkbox"/> 1.5 Additional Math |
| <input type="checkbox"/> CS 370 or CS 371 | Units ¹ |
| <input type="checkbox"/> CS 340-398; 440-489 | <input type="checkbox"/> |
| <input type="checkbox"/> CS 480 or CS 485 | <input type="checkbox"/> |
| <input type="checkbox"/> CS 486 | <input type="checkbox"/> |
| <input type="checkbox"/> CS 492 | |

Electives

- | | |
|---|--|
| <input type="checkbox"/> 5.0 Non-Math Elective Units | <input type="checkbox"/> 1.5 Additional Elective Units |
| <input type="checkbox"/> Communication list I ² | <input type="checkbox"/> |
| <input type="checkbox"/> Communication list II ³ | <input type="checkbox"/> |
| <input type="checkbox"/> | <input type="checkbox"/> |
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Additional Constraints

- | | | |
|---|---|---|
| <input type="checkbox"/> ECE 380 or SE 380 ⁴ | <input type="checkbox"/> Non-math elective units must satisfy breadth and depth requirements: | <input type="checkbox"/> Seven (regular) or eight (co-op) terms enrolled in at least three courses totaling 1.5 units |
| <input type="checkbox"/> Three courses from List A ⁵ : | <input type="checkbox"/> All of (breadth): | <input type="checkbox"/> No more than 2.0 units of failed courses |
| <input type="checkbox"/> CO 367 | <input type="checkbox"/> 1.0 units from the humanities ⁷ | <input type="checkbox"/> No more than 5.0 units of unusable course attempts (failures and repeats of passed courses) |
| <input type="checkbox"/> CO 456 | <input type="checkbox"/> 1.0 units from the social sciences | <input type="checkbox"/> CS major average of 60% or higher |
| <input type="checkbox"/> CO 463 | <input type="checkbox"/> 0.5 units from the pure sciences | <input type="checkbox"/> Cumulative average of 60% or higher |
| <input type="checkbox"/> CO 466 | <input type="checkbox"/> 0.5 units from the pure or applied sciences | <input type="checkbox"/> Co-op requirements met, if applicable, including PD 1, PD 11, PD 10, and a minimum of two other PD courses |
| <input type="checkbox"/> CS 452 | <input type="checkbox"/> One of (depth): | |
| <input type="checkbox"/> CS 480 ⁶ | <input type="checkbox"/> 1.5 units in the same subject area with at least 0.5 units at the 3rd year level or higher, or | |
| <input type="checkbox"/> CS 484 | <input type="checkbox"/> 1.5 units with the same subject forming a prerequisite chain of length three | |
| <input type="checkbox"/> CS 485 ⁶ | | |
| <input type="checkbox"/> STAT 341 | | |
| <input type="checkbox"/> STAT 440 | | |
| <input type="checkbox"/> STAT 441 | | |
| <input type="checkbox"/> STAT 444 | | |

¹ Three additional courses labeled ACTSC, AMATH, CO, PMATH, STAT, excluding the following:

- Courses with requisites normally excluding Honours CS students
- Courses cross-listed with a CS course
- Courses explicitly listed in CS major plans as alternatives to CS courses
- Readings and Topics courses
- ACTSC 221, CO 353, CO 380, CO 480

²Communication List I: At least 60% in one of EMLS 101R, EMLS 102R, EMLS/ENGL 129R, ENGL 109, SPCOM 100, SPCOM 223.

³Communication List II: One of EMLS 103R, EMLS 104R, EMLS 110R, ENGL 108B, ENGL 108D, ENGL 119, ENGL 208B, ENGL 209, ENGL 210E, ENGL 210F, ENGL 378/MTHL 300, SPCOM 225, SPCOM 227, SPCOM 228, or an additional course from Communication List 1.

⁴For ECE 380/SE 380, MATH 213 is an acceptable alternative for its noted prerequisite. Alternatively, ECE 380/SE 380 can be substituted with CS 480, CS 484, or CS 485. If this substitution is chosen, then the substituted CS course cannot be used towards the one of 'three additional courses' from List A.

⁵At least one of the 'three additional courses' must be from Math and at least one from Engineering. Special topics courses (e.g., CS 489) may sometimes be appropriate for this option; interested students should see a CS advisor for confirmation. Please note that you must complete the appropriate prerequisites in order to take the engineering courses required for AI specialization. In some cases, you may be required to take more courses beyond what is noted on the checklist. Engineering courses listed here cannot be used towards non-math electives.

⁶One of CS 480 and CS 485 is required. If both courses are taken, then one of them would count as one of 'three additional courses' from List A. However, please see the restriction noted for these courses in footnote #4.

⁷The below Communication courses from List II can be used to satisfy both the Communication List II requirement *and* 0.5 unit for the humanities (breadth) requirement. Communication List I courses do NOT satisfy the humanities (breadth) requirement.

- ENGL 108B, ENGL 108D, ENGL 119, ENGL 208B, ENGL 209, ENGL 210E, ENGL 210F, ENGL 378/MTHEL 300, SPCOM 225, SPCOM 227, SPCOM 228.

Disclaimer: This checklist is a handy tool, but it is not a substitute for the official degree regulations. If there is a question of interpretation or a discrepancy, the University Calendar always takes precedence: <http://ugradcalendar.uwaterloo.ca/group/MATH-Computer-Science-1>. You may complete the checklist and ask a CS advisor to review it, but the student is ultimately responsible for ensuring that they have met their degree requirements.