# 10.1 Joint Majors

#### [10.1.1 Applied Mathematics and Computer Science Joint Major](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/#10.1.1)

As a component of the [Degree Regulations](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/4/) for the General Degree of Bachelor of Science, the following courses are required:

1. Computer Science [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [1003](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2002](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2003](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2004](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2005](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2006](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2007](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2008](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), plus 18 further credit hours in Computer Science courses numbered 3000 or higher.
2. Mathematics [1000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2051](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2130](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2260](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2320](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3100](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3132](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3161](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3202](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [4160](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), and [4190](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/).

In addition, Statistics [2550](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) is highly recommended.

#### [10.1.2 Applied Mathematics and Economics Joint Major](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/#10.1.2)

As a component of the [Degree Regulations](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/4/) for the General Degree of Bachelor of Science, the following courses are required:

1. Mathematics [1000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2051](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2130](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2260](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2320](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3100](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3202](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), Statistics [2550](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/).
2. Either Mathematics [3132](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) and [4131](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) or [3161](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) and [4160](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/).
3. A computing course early in the program is required. Computer Science [1510](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) is highly recommended.
4. Economics: [1010](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) (or the former 2010), [1020](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) (or the former 2020), [2550](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3010](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [4550](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [4551](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/).
5. Eighteen further credit hours chosen from among the various Economics courses in consultation with the Head of the Department or delegate, including at least 9 credit hours at the 4000 level.

#### [10.1.3 Applied Mathematics and Physics Joint Major](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/#10.1.3)

Required course for this degree are:

1. Six credit hours in [Critical Reading and Writing (CRW)](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-humanities-and-social-sciences/6/1/#d.en.307242) courses including at least 3 credit hours in English courses.
2. A computing course. Computer Science [1510](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) is recommended.
3. Six credit hours in science other than Mathematics or Physics (if Computer Science is chosen then Computer Science [1510](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) may be counted as 3 of these hours).
4. Mathematics [1000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2051](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2260](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2320](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3132](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3202](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/).
5. Physics [1050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) (or [1020](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/)), [1051](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2053](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2055](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2750](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) (or [2056](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/)), [2820](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3220](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3400](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3500](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3750](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/).
6. Mathematics [3161](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) or Physics [3820](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/).
7. At least 15 additional credit hours chosen from Applied Mathematics and Physics courses numbered 3000 or above. At least 3 hours are required from Applied Mathematics and 6 hours are required from Physics.
8. A writing course. Any one of Mathematics [2130](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), Physics [3900](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), Mathematics [419A/B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), or Physics [490A/B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) is acceptable.

The last requirement does not have to be met independently of the other regulations. For example, it can be satisfied either by choosing Mathematics [2130](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) from clause 5. above or choosing Physics [3900](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) as a 3000+ elective in clause 8. above.

#### [10.1.4 Computer Science and Economics Joint Major](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/#10.1.4)

As a component of the [Degree Regulations](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/4/) for the General Degree of Bachelor of Science, the following courses are required:

1. Computer Science Requirements  
   Forty-two credit hours in Computer Science courses are required for the Joint Major in Computer Science and Economics:
   1. Computer Science [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [1002](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [1003](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2002](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2003](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2004](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2005](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2006](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2007](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2008](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2500](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3731](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3753](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/);
   2. Six additional credit hours in Computer Science courses numbered 3000 or higher.
2. Economics requirements  
   Forty-two credit hours in Economics courses are required for the Joint Major in Economics and Computer Science:
   1. Economics [1010](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) (or the former 2010), [1020](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) (or the former 2020), [2550](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3010](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/);
   2. Six credit hours from either [3550](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) and [3551](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), or [4550](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) and [4551](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/);
   3. The remaining 18 credit hours shall be chosen from among the various Economics courses in consultation with the Head of the Department or delegate, and will include at least 9 credit hours in courses at the 4000 level.
3. Additional Requirements  
   Mathematics [1000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), and Statistics [2500](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) or [2550](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/).

#### [10.1.5 Computer Science and Geography Joint Major](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/#10.1.5)

As a component of the [Degree Regulations](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/4/) for the General Degree of Bachelor of Science, the following courses are required:

1. Computer Science Requirements  
   Thirty-nine credit hours in Computer Science courses are required: [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [1002](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [1003](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2002](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2003](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2004](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2005](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2006](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2007](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2008](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2500](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), the former 4751 plus 6 further credit hours in Computer Science courses numbered 3000 or higher.
2. Geography Requirements  
   Thirty-nine credit hours in Geography courses are required: [1050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2102](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2195](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2302](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2425](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3202](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3222](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3250](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3260](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [4202](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [4250](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [4261](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/).
3. Additional Requirements: Mathematics [1000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), and Statistics [2500](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) or [2550](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/).

#### [10.1.6 Computer Science and Physics Joint Major (B.Sc. only)](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/#10.1.6)

As a component of the [Degree Regulations](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/4/) for the General Degree of Bachelor of Science, the following courses are required:

1. Chemistry [1050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) and [1051](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) (or Chemistry [1010](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), the former 1011, and the former 1031).
2. Thirty-nine credit hours in Computer Science are required for the Joint Major: [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [1002](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [1003](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2002](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2003](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2004](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2005](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2006](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2007](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2008](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3731](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) plus 9 further credit hours in Computer Science courses numbered 3000 or higher, including at least 3 credit hours at the 4000 level.
3. Physics [1050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) (or [1020](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/)) and [1051](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) plus at least 30 additional credit hours in Physics including [2053](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2055](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2750](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2820](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3220](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3400](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3500](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3750](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3800](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/).
   1. Mathematics [1000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) and [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/).
   2. Mathematics [2000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2260](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3202](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/).
   3. Additional electives to bring the credit hours to 120. Computer Science [2500](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) and Statistics [2550](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) are recommended.

#### [10.1.7 Computer Science and Pure Mathematics Joint Major](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/#10.1.7)

As a component of the [Degree Regulations](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/4/) for the General Degree of Bachelor of Science, the following courses are required:

1. Computer Science [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [1003](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2002](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2003](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2004](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2005](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2006](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2007](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2008](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/).
2. Eighteen additional credit hours in Computer Science courses numbered 3000 or higher.
3. Mathematics [1000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2051](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2130](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2260](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2320](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3202](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3320](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3340](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), and Statistics [2550](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/).
4. Nine additional credit hours in courses numbered 3000 or higher offered by the Department of Mathematics and Statistics, excluding the former Mathematics 3330.

#### [10.1.8 Computer Science and Statistics Joint Major (B.Sc. Only)](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/#10.1.8)

As a component of the [Degree Regulations](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/4/) for the General Degree of Bachelor of Science, the following courses are required:

1. Computer Science [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [1003](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2002](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2003](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2004](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2005](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2006](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2007](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2008](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2500](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3731](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [4734](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), plus 12 further credit hours in Computer Science courses numbered 3000 or higher.
2. Statistics [1510](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) or [2500](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) or [2550](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), and [2501](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) or [2560](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/).
3. Mathematics [1000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2051](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2320](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3340](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), Statistics [2410](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) or [3410](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3411](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3520](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3521](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3540](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [4590](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/).
4. Nine further credit hours in Statistics courses numbered 3000 or higher including at least a 3 credit hour course numbered 4000 or higher excluding Statistics [4581](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/).

#### [10.1.9 Earth Sciences and Physics Joint Major](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/#10.1.9)

This program was formerly in the Earth Sciences section of the Calendar as a Bachelor of Science in Geophysics. The following courses will be required:

1. Six credit hours in [Critical Reading and Writing (CRW)](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-humanities-and-social-sciences/6/1/#d.en.307242) courses, including at least 3 credit hours in English courses.
2. Mathematics [1000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) and [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), Earth Sciences [1000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) and [1002](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), Chemistry [1050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) and [1051](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) (or [1200](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) and [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/)), Physics [1050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) (or [1020](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/)) and [1051](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/).
3. Earth Sciences [2030](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2401](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2502](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2702](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2905](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3170](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3172](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3420](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3905](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/); plus a 3 credit hour course in Earth Sciences 4100 series.
4. At least 30 credit hours in Physics courses at the 2000 level or higher, including Physics [2055](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2056](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) or [2750](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2820](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3220](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3500](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/).
5. Mathematics [2000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) and [3202](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/).
6. Other courses to complete at least a minimum requirement of 120 credit hours in courses for the General Degree.

Any change in the program of study must have the prior approval of the Heads of the two Departments concerned.

#### [10.1.10 Economics and Pure Mathematics Joint Major](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/#10.1.10)

As a component of the [Degree Regulations](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/4/) for the General Degree of Bachelor of Science, the following courses are required:

1. Mathematics [1000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2130](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2260](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2320](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3100](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3202](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3320](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), Statistics [2550](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) and one 4000 level Mathematics course.
2. A computing course early in the program is required. Computer Science [1510](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) is highly recommended.
3. Economics: [1010](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) (or the former 2010), [1020](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) (or the former 2020), [2550](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3010](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), and 6 credit hours from either [3550](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) and [3551](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), or [4550](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) and [4551](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/).
4. Eighteen further credit hours chosen from among the various Economics courses in consultation with the Head of the Department or delegate, including at least 9 credit hours at the 4000 level.

#### [10.1.11 Economics and Statistics Joint Major](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/#10.1.11) (Non-co-operative)

As a component of the [Degree Regulations](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/4/) for the General Degree of Bachelor of Science, the following courses are required:

1. Mathematics [1000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2051](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), Statistics [2410](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) or [3410](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2550](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2560](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3411](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3520](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3540](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [4590](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/).
2. Six further credit hours in Statistics courses numbered 3000 or higher, at least 3 credit hours of which must be numbered 4000 or higher, excluding Statistics [3521](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) and [4581](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/).
3. Economics: [1010](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) (or the former 2010), [1020](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) (or the former 2020), [2550](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3010](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [4550](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [4551](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/).
4. Eighteen further credit hours chosen from among the various Economics courses in consultation with the Head of the Department or delegate, including at least 9 credit hours at the 4000 level.

#### [10.1.12 Economics (Co-operative) and Statistics Joint Major](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/#10.1.12)

[www.mun.ca/coop](https://www.mun.ca/coop)

The Joint Major in Economics (Co-operative) and Statistics allows Economics students to apply their skills in a variety of settings including government, education, and the non-profit and private sectors. It is available exclusively to full-time Economics and Statistics majors (B.Sc. only). The program is administered by the designated Academic Staff Member in Co-operative Education (ASM-CE) for the Faculty of Humanities and Social Sciences.

Students who participate in the Economics (Co-operative) and Statistics Joint Major must meet the requirements listed under the [Regulations for the General Degree of Bachelor of Science](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/4/4/). In addition, the Economics (Co-operative) and Statistics Joint Major requires three work term courses as described in Course Descriptions, Work Terms.

[Admission Requirements](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/#10.1.12.1)

1. Admission is limited and selective.
2. Applicants should note that it is possible to enter the co-operative education program only in the Fall semester of each academic year. Application forms are available on the Department of Economics website.
3. The primary criterion used in reaching decisions on applications for admission is overall academic achievement. Students with weak overall academic records are unlikely to be admitted. An applicant may be asked to attend an interview.
4. To be eligible for admission an applicant must have successfully completed a minimum of 30 credit hours with an overall average of at least 65% including the following: Economics [1010](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) (or the former 2010) and [1020](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) (or the former 2020); at least 6 credit hours in English (English [1110](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) is recommended); Mathematics [1000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) and [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/); and 12 credit hours chosen from courses in the disciplines of Humanities, Social Sciences or Science. It is advised that students choose courses which can satisfy the [Regulations for the General Degree of Bachelor of Science](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/4/4/).
5. A student who has already completed more than the 30 credit hours that are required for admission to the program may apply for entry with Advanced Standing. Students with Advanced Standing will be placed in a semester of the program judged to be appropriate considering the number of credit hours remaining in their academic program.
6. Transfer students from other universities will be placed in that term of the program judged to be appropriate considering equivalent credits, as determined by the Departments and the designated ASM-CE.

[Program of Study](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/#10.1.12.2)

\*\*Year 1 (Pre-Economics (Co-operative)) (See Note 1.)\*\* -

- ECON 1010, 1020

- 6 credit hours in English (English 1110 is recommended)

- Mathematics 1000, 1001

- 12 credit hours in elective courses (see Note 2.)

\*\*Year 2\*\* -

- Computer Science 1000 (see Note 3.)

- ECON 2550, 3000, 3001, 3010, 3550

- ECON 299W (Work Term I (typically in Spring semester))

- Mathematics 2000, 2050

- Statistics 2550, 2560

\*\*Year 3\*\* -

- ECON 3011, 4120, 4550, 4551

- ECON 399W (Work Term II (typically in Spring semester))

- Mathematics 2051

- Statistics 2410 (or 3410), 3411, 3540

- 3 further credit hours in Statistics courses

- 3 further credit hours in elective courses (see Note 2.)

\*\*Year 4\*\* -

- 9 further credit hours in Economics courses at the 3000 or 4000 level

- ECON 499W (Work Term III (typically in Winter semester))

- Statistics 3520, 4590

- 3 further credit hours in Statistics courses

- 9 further credit hours in elective courses (see Note 2.)

- 3 further credit hours in a Science subject other than Computer Science, Economics, Mathematics, and Statistics.

##### Notes:

1. Courses listed in Year 1 are required to be eligible for admission to the program.
2. Elective courses should be chosen with reference to [Faculty of Science Degree Regulations, Electives](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/4/6/).
3. Another 1000-level Computer Science course may be substituted with the approval of the Head of the Department of Economics.

#### [10.1.13 Marine Biology Joint Major](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/#10.1.13)

The Joint Major in Marine Biology is jointly administered by the Department of Ocean Sciences and the Department of Biology. More information on recommended courses and time tables can be found in the Handbook of Undergraduate Studies available on both departmental websites.

Students who wish to enroll in the program should seek academic advising well in advance to ensure they have successfully completed the appropriate prerequisites. Entry to required courses may be limited and determined by academic performance. Students are advised to consult with the Department of Ocean Sciences or the Department of Biology at the earliest opportunity. Each student registered in the program will be assigned an advisor who should be consulted on academic issues, including course selection.

[Admission Requirements](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/#10.1.13.1)

Admission to the program is based on academic standing. To be considered for admission to the program, students will normally have successfully completed the following courses (or their equivalents) with an overall average of at least 60%:

1. Biology [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) and [1002](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) with an average grade of 65%;
2. Chemistry [1050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) and [1051](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) (or [1200](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) and [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/));
3. Six credit hours in [Critical Reading and Writing (CRW)](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-humanities-and-social-sciences/6/1/#d.en.307242) courses, including at least 3 credit hours in English courses;
4. Mathematics [1000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/);
5. Ocean Sciences [1000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) with a minimum grade of 65%;
6. Physics [1020](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) (or [1050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/)); and
7. Physics [1021](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) (or [1051](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/)) or one Ocean Sciences course at the 2000 level.

Students should be aware that delaying some of the above courses, particularly Chemistry [1050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) and [1051](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), until second year may make it difficult to complete the program in the normal four years.

[Program of Study](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/#10.1.13.2)

Students pursuing a Joint Major in Marine Biology are required to complete a minimum of 60 combined credit hours from Biology and Ocean Sciences, with a minimum of 27 credit hours in each subject:

1. Six credit hours in [Critical Reading and Writing (CRW)](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-humanities-and-social-sciences/6/1/#d.en.307242) courses, including at least 3 credit hours in English courses;
2. Mathematics [1000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/);
3. Earth Sciences [1000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/);
4. Statistics [2550](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) or any of the courses listed in the credit restrictions of Statistics [2550](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/);
5. Physics [1020](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) and [1021](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) (or [1050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) and [1051](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/));
6. Chemistry [1050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) and [1051](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) (or [1200](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) and [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/)), and [2400](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/);
7. Human Biosciences [2001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) or the former Biochemistry 2101 or 2201;
8. Biology [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [1002](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2060](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2122](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2250](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) (or Human Biosciences [2004](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) or the former Biochemistry 2200 or 2100), [2600](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2900](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3710](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), and [3711](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/);
9. Ocean Sciences [1000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2100](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), and at least one of [2500](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) or [4500](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) (or Biology [3709](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/) or [4710](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/));
10. additional courses to complete the required 60 combined credit hours in Biology and Ocean Sciences with a minimum of 27 credit hours in each subject (except Biology [2040](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2041](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [2120](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), [3053](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), and [3820](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/)). A minimum of 6 credit hours in Biology at the 3000/4000 level and 12 credit hours in Ocean Sciences at the 3000/4000 level is required; and
11. other courses as necessary to complete the minimum of 120 credit hours required for the General Degree of Bachelor of Science.

Notes:

1. Courses cross listed between Biology and Ocean Sciences can only count for one subject or the other.
2. A maximum of half of all Biology electives can be Biology courses with no associated laboratory/seminar (i.e., courses that have 3 contact hours/week).
3. Students are encouraged to take Human Biosciences [2003](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/), or the former Biochemistry 3206 or 3106, as it is a pre-requisite for several higher-level courses in Biology and in Ocean Sciences.

#### [10.2.1 Applied Mathematics and Chemistry Joint Honours](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/#10.2.1)

The following courses are required:

1. Six credit hours in [Critical Reading and Writing (CRW)](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-humanities-and-social-sciences/6/1/#d.en.307242) courses, including at least 3 credit hours in English courses.
2. A computing course. Computer Science [1510](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) is recommended.
3. Human Biosciences [2001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or the former Biochemistry 2101 or 2201, or Human Biosciences [2901](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/).
4. Physics [1050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or [1020](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)) and [1051](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or [1021](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)).
5. Mathematics [1000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2051](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2260](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2320](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3132](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3161](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3202](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3210](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4160](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/).
6. Chemistry [1050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [1051](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or [1200](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)), [2100](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2210](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2301](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2302](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2400](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2401](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3110](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3210](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or [3211](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3303](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/).
7. Six additional credit hours chosen from courses numbered 3000 or higher that are offered by the Department of Chemistry.
8. An Honours Dissertation (Mathematics [419A/B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or Chemistry [490A/B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)). The topic of the Honours Dissertation must have the prior approval of the Heads of the two Departments. A faculty member of either Department may act as supervisor.
9. A sufficient number of elective courses to bring the degree up to a total of 120 credit hours.
10. Mathematics [2130](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) is recommended.

#### [10.2.2 Applied Mathematics and Physics Joint Honours](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/#10.2.2)

The following courses are required:

1. Six credit hours in [Critical Reading and Writing (CRW)](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-humanities-and-social-sciences/6/1/#d.en.307242) courses, including at least 3 credit hours in English courses.
2. A computing course. Computer Science [1510](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) is recommended.
3. Six credit hours in a science other than Mathematics or Physics (if Computer Science is chosen then Computer Science [1510](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) may be counted as three of these hours).
4. Mathematics [1000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2051](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2260](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2320](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3132](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3202](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3210](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/).
5. Physics [1050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or [1020](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)), [1051](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2053](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2055](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2750](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or [2056](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)), [2820](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3220](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3230](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3400](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3500](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3750](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), and one of [3800](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or [3900](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/).
6. One of Mathematics [3161](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or Physics [3820](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and one of Mathematics [4160](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or Physics [4820](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/).
7. Physics [490A/B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or Mathematics [419A/B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/).
8. Twelve additional credit hours chosen from courses numbered 4000 or higher that are offered by the Department of Mathematics and Statistics or the Department of Physics and Physical Oceanography. At least 3 credit hours must be selected in each of Applied Mathematics and Physics.
9. Twelve credit hours in applicable elective courses. Mathematics [2130](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) is recommended.

The topic for the Honours project or thesis, Mathematics [419A/B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or Physics [490A/B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), must be chosen with the prior approval of both departments.

#### [10.2.3 Biochemistry and Cell Biology Joint Honours](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/#10.2.3)

Note: The last year of admission into the Biochemistry and Cell Biology joint honours program will be in the 2023-2024 academic year. In 2024-2025 and beyond, students who are entering the third year of study may apply for the joint honours program in Human Biosciences and Cell Biology.

The following courses are required:

1. Six credit hours in [Critical Reading and Writing (CRW)](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-humanities-and-social-sciences/6/1/#d.en.307242) courses, including at least 3 credit hours in English courses.
2. Biology [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [1002](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), Chemistry [1050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [1051](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or [1200](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)), Mathematics [1000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), Physics [1020](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or [1050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), Physics [1021](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or [1051](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), Statistics [2550](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
3. Biochemistry [2201](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or the former 2101, [2901](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3105](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3206](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), Chemistry [2301](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2400](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2401](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
4. Either Biochemistry [3207](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [3108](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or Medicine [310A/B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
5. An additional 9 credit hours to be selected from Biochemistry [3906](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or [3907](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4002](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4101](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4102](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4103](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4104](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4105](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4200](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4201](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4210](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or [4211](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4230](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4231](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4232](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)-[4239](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
6. Biology [2060](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2250](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2600](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2900](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3530](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4241](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), plus one of Biology [3401](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3402](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), or [4404](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
7. 12 credit hours from the following: Biology [3050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3052](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or Biochemistry [3052](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)), [3401](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3402](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3500](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), the former 3620, [3950](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3951](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4010](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), the former 4040, [4050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4200](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or Biochemistry [4105](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)), [4245](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4250](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4251](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), the former 4255, [4404](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4550](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4605](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4607](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
8. Biochemistry [499A/B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or Biology [499A/B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/); and
9. Electives to make up 120 credit hours.

Seventy-five credit hours in Biology, Biochemistry and Chemistry courses beyond the first-year level from those listed in the program shall contribute to those in which a grade of "B" or an average of 75 or higher is required. Medicine [310A/B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) counts as Biochemistry for these 75 credit hours.

#### [10.2.4 Biochemistry and Chemistry Joint Honours](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/#10.2.4)

Note: The last year of admission into the Biochemistry and Chemistry joint honours program will be in 2023-2024 academic year. In 2024-2025 and beyond, students who are entering the third year of study may apply for the joint honours program in Human Biosciences and Chemistry.

The following courses are required:

1. Six credit hours in [Critical Reading and Writing (CRW)](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-humanities-and-social-sciences/6/1/#d.en.307242) courses, including at least 3 credit hours in English courses;
2. Chemistry [1050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [1051](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or Chemistry [1200](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)), Mathematics [1000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), Physics [1050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or [1020](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)) and [1051](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or [1021](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)), Biology [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [1002](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) are highly recommended;
3. Mathematics [2000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
4. Chemistry [2100](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2210](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2301](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2302](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2400](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2401](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3110](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3211](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4410](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
5. Nine further credit hours in Chemistry courses numbered 3000 or higher, at least 6 credit hours of which must be in courses numbered 4000 or higher;
6. Biochemistry [2200](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or [2100](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), Biochemistry [2201](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or the former 2101, [2901](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3105](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3206](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
7. Either Biochemistry [3108](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [3207](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), or Medicine [310A/B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)
8. 9 credit hours chosen from Biochemistry [3906](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or [3907](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4002](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4101](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4102](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4103](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4104](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4105](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4200](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4201](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4210](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or [4211](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4230](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4231](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4232](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)-[4239](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
9. Either Chemistry [490A/B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or Biochemistry [499A/B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/); and
10. A sufficient number of elective courses to bring the degree to a total of 120 credit hours.

Note:

Students should check prerequisites for 4000 level courses before making decisions about their 3000 level courses and seek academic advice if necessary.

#### [10.2.5 Biochemistry and Physics Joint Honours](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/#10.2.5)

Note: The last year of admission into the Biochemistry and Physics joint honours program will be in 2023-2024 academic year. In 2024-2025 and beyond, students who are entering the third year of study may apply for the joint honours program in Human Biosciences and Physics.

The following courses are required:

1. Six credit hours in [Critical Reading and Writing (CRW)](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-humanities-and-social-sciences/6/1/#d.en.307242) courses, including at least 3 credit hours in English courses;
2. Chemistry [1050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [1051](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or [1200](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)), Mathematics [1000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), Physics [1050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or [1020](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)) and [1051](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
3. Chemistry [2400](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2401](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
4. Chemistry [2301](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or Physics [2053](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
5. Mathematics [2000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2260](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), either Mathematics [3202](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or Physics [3810](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
6. Biochemistry [2200](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or [2100](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)), [2201](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2901](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3105](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3206](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
7. Either Biochemistry [3108](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [3207](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), or Medicine [310A/B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
8. An additional 9 credit hours to be selected from Biochemistry [3906](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or [3907](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4002](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4101](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4102](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4103](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4104](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4105](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4200](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4201](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4210](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or [4211](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4230](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4231](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4232](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)-[4249](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
9. Physics [2055](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2750](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or [2056](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2820](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3220](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3400](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3500](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3750](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3820](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3900](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), plus one 4000 level Physics course;
10. Either Physics [490A/B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or Biochemistry [499A/B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/); and
11. Other courses to complete the prescribed minimum of 120 credit hours in courses for the Joint Honours degree.

#### [10.2.6 Biochemistry and Psychology (Behavioural Neuroscience) Joint Honours](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/#10.2.6)

Note: The last year of admission into the Biochemistry and Psychology (Behavioural Neuroscience) joint honours program will be in 2023-2024 academic year. In 2024-2025 and beyond, students who are entering the third year of study may apply for the joint honours program in Human Biosciences and Psychology (Behavioural Neuroscience).

Note:

Students completing this program cannot receive credit for Psychology [2920](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/).

The following courses (or equivalent) are required to complete the 120 credit hours in courses required for the degree:

1. Six credit hours in [Critical Reading and Writing (CRW)](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-humanities-and-social-sciences/6/1/#d.en.307242) courses, including at least 3 credit hours in English courses;
2. Chemistry [1050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [1051](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or [1200](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)), Biology [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [1002](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), Mathematics [1000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), Physics [1050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), (or [1020](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)), [1051](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or [1021](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/));
3. Biochemistry [2200](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or [2100](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)), [2201](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2901](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3105](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3206](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
4. Either Biochemistry [3108](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [3207](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), or Medicine [310A/B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
5. 9 credit hours to be selected from Biochemistry [3906](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or [3907](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4002](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4101](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4102](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4103](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4104](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4105](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4200](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4201](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4210](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or [4211](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4230](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4231](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4232](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)-[4239](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
6. Psychology [1000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2521](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2910](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2911](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2930](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3800](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3820](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3900](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
7. Three credit hours in Psychology chosen from the following: the former PSYC 3250, [3810](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3830](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3840](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), or [3860](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
8. Three credit hours in Psychology chosen from the following: [3050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3100](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3251](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3350](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3450](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3620](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3650](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3750](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
9. Any Psychology research experience course and one of Psychology [4850](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4851](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4852](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4853](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), or [4854](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/); or, any Psychology selected topics course and Psychology [4870](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
10. Either Biochemistry [499A/B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or Psychology [499A/B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/); and
11. Chemistry [2301](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2400](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2401](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/).

Notes:

1. As provided for under the [Graduation Requirements](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/4/8/) for the Honours Degree of Bachelor of Science, Honours students must obtain a grade of "B" or better, or an average of 75% or higher in all the required courses listed in Clauses 3. - 10. above, except those at the 1000 level.
2. Students in first year intending to follow this program should note the regulations for admission to Major programs in Psychology and that the deadline for submission of a completed application form to the Department of Psychology is June 1 for the Fall semester.

#### [10.2.7 Biochemistry (Nutrition) and Psychology (Behavioural Neuroscience) Joint Honours](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/#10.2.7)

Note: The last year of admission into the Biochemistry (Nutrition) and Psychology (Behavioural Neuroscience) joint honours program will be in 2023-2024 academic year. In 2024-2025 and beyond, students who are entering the third year of study may apply for the joint honours program in Human Biosciences and Psychology (Behavioural Neuroscience).

Note:

Students completing this program cannot receive credit for Psychology [2920](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/).

The following courses (or equivalent) are required:

1. Six credit hours in [Critical Reading and Writing (CRW)](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-humanities-and-social-sciences/6/1/#d.en.307242) courses, including at least 3 credit hours in English courses;
2. Chemistry [1050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [1051](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or [1200](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)), Biology [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [1002](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), Mathematics [1000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), Physics [1020](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or [1050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), and [1021](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or [1051](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/));
3. Biochemistry [2200](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or [2100](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)), [2201](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2600](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2901](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3203](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3206](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3906](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), Medicine [310A/B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4300](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4301](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4502](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
4. Three credit hours chosen from: Biochemistry [3052](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3108](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3402](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3600](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4002](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4105](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4200](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4230](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4231](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4240](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4241](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)-[4249](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), Biology [3050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
5. Psychology [1000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2521](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2910](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2911](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2930](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3800](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3820](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3900](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
6. Three credit hours in Psychology chosen from the following: the former 3250, [3810](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3830](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3840](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), or [3860](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
7. Three credit hours in Psychology chosen from the following: [3050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3100](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3251](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3350](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3450](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3620](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3650](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3750](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
8. Any Psychology research experience course and one of Psychology [4850](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4851](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4852](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4853](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), or [4854](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/); or, any Psychology selected topics course and Psychology [4870](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
9. Either Biochemistry [499A/B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or Psychology [499A/B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
10. Chemistry [2400](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/); and
11. Other courses to complete at least the prescribed minimum of 120 credit hours in courses for the Joint Honours Degree.

Notes:

1. As provided for under the [Graduation Requirements](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/4/8/) for the Honours Degree of Bachelor of Science, Honours students must obtain a grade of "B" or better, or an average of 75% or higher in all the required courses listed in Clauses 3. - 9. above, except those at the 1000 level.
2. Students in first year intending to follow this program should note the regulations as outlined for admission to Major programs in Psychology and that the deadline for submission of a completed application form to the Department of Psychology is June 1 for the Fall semester.

#### [10.2.8 Biology and Earth Sciences Joint Honours](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/#10.2.8)

The following courses, including prerequisites where applicable, will be required:

1. Six credit hours in [Critical Reading and Writing (CRW)](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-humanities-and-social-sciences/6/1/#d.en.307242) courses, including at least 3 credit hours in English courses.
2. Mathematics [1000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), Biology [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [1002](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), Earth Sciences [1000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [1002](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), Chemistry [1050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [1051](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or [1200](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)), Physics [1020](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [1021](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or [1050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [1051](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)).
3. Chemistry [2400](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), Human Biosciences [2001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or the former Biochemistry 2101 or 2201, Human Biosciences [2003](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or the former Biochemistry 3106 or 3206, one of Statistics [2550](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or [2560](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/).
4. Biology [2060](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2250](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2600](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2900](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), one of [3401](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3402](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), or [4404](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/); plus Biology [3710](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3711](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), and [4505](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/). In addition, further Biology courses at the 2000, 3000, or 4000 level must be selected by the student in consultation with the supervisor to make up a minimum of 42 credit hours in Biology not including Biology [499A](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or [499B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/).
5. Earth Sciences [2030](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2031](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2502](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2905](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/); plus a minimum of 24 credit hours in other Earth Science courses from 2000 to 4000 level, at least 3 credit hours of which must be at 4000 level. Earth Sciences [2150](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2914](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2915](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2916](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2917](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2918](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4310](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), and [4950](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) cannot be used to fulfill this requirement. Career-related streams outlined in the departmental Student Handbook should be used as a guide to course selection so as to achieve a concentration in one facet of Earth Sciences.
6. An Honours dissertation (Biology [499A/B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or Earth Sciences [499A/B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)). The topic of the Honours dissertation must be chosen with the approval of both Department Heads. A faculty member of either Department may act as supervisor.
7. Other courses to complete a minimum of 135 credit hours in courses for the Honours degree, with at least 84 credit hours in courses in Biology and Earth Sciences combined.

Any change in the program of study must have the prior approval of the Heads of the two Departments concerned.

#### [10.2.9 Biology and Psychology Joint Honours](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/#10.2.9)

Note:

Students completing this program cannot receive credit for Psychology [2920](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/).

The following courses (or equivalent) are required:

1. Biology [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [1002](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2060](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2250](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2600](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2900](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/); one of [3401](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3402](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), or [4404](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/); four Biology electives at the 2000, 3000 or 4000 level not including Biology [499A](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or [499B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/).
2. Psychology [1000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2520](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or 2521), [2910](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2911](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2930](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), one of the former PSYC 3250, [3800](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3810](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3830](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3840](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), or [3860](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/); [3900](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4910](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/); one of the following: [3050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3100](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3251](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3350](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3450](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3620](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3650](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/); one further 4000 level Psychology research experience course.
3. Biology or Psychology [3750](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4701](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [499A/B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/).
4. Six credit hours in [Critical Reading and Writing (CRW)](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-humanities-and-social-sciences/6/1/#d.en.307242) courses, including at least 3 credit hours in English courses.
5. Mathematics [1000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/); Chemistry [1050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or [1200](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)), [1051](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)), and [2400](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/); Physics [1020](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or [1050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)) and [1021](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or [1051](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)); Human Biosciences [2001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or the former Biochemistry 2101 or 2201 and Human Biosciences [2003](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or the former Biochemistry 3106 or 3206.
6. Other courses, if necessary, to complete at least 120 credit hours of courses.

#### [10.2.10 Biology and Psychology (Behavioural Neuroscience) Joint Honours](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/#10.2.10)

Note:

Students completing this program cannot receive credit for Psychology [2920](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/).

The following courses (or equivalent) are required:

1. Biology [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [1002](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2060](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2250](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2600](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2900](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/); one of [3401](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3402](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), or [4404](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/); five Biology electives at the 2000, 3000 or 4000 level not including Biology [499A](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or [499B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/).
2. Psychology [1000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2521](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2910](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2911](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2930](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/); one of the former PSYC 3250, [3810](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3830](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3840](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), or [3860](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/); [3800](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3820](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3900](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/); one further course in Psychology chosen from the following: [3050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3100](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3251](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3350](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3450](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3620](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3650](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3750](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/); any research experience course and one of Psychology [4850](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4851](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4852](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4853](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), or [4854](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/); or, any selected topics course and Psychology [4870](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/).
3. Biology or Psychology [499A/B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/).
4. Human Biosciences [2001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or the former Biochemistry 2101 or 2201, Human Biosciences [2003](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or the former Biochemistry 3106 or 3206.
5. Six credit hours in [Critical Reading and Writing (CRW)](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-humanities-and-social-sciences/6/1/#d.en.307242) courses, including at least 3 credit hours in English courses.
6. Mathematics [1000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or equivalent); Physics [1020](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or [1050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)) and [1021](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or [1051](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)); Chemistry [1050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or [1200](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)), [1051](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)), and [2400](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/).
7. Other courses, if necessary, to complete at least 120 credit hours of courses.

Note:

As provided for under the [Graduation Requirements](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/4/8/) for the Honours Degree of Bachelor of Science, Honours students must obtain a grade of "B" or better, OR average of 75% or higher in all the required courses listed in Clauses 1, 2, 3, and 4 above, except those at the 1000 level.

#### [10.2.11 Biology and Statistics Joint Honours](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/#10.2.11)

As a component of the [Degree Regulations](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/4/) for the Honours Degree of Bachelor of Science, the following courses are required:

1. Six credit hours in [Critical Reading and Writing (CRW)](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-humanities-and-social-sciences/6/1/#d.en.307242) courses, including at least 3 credit hours in English courses.
2. Mathematics [1000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), Biology [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [1002](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), Chemistry [1050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [1051](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or [1200](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), or [1010](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and the former 1011), Physics [1020](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [1021](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), or equivalent;
3. Mathematics [2000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2051](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), Statistics [2500](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2501](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or [2560](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3520](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3521](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4530](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), and [4581](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
4. 9 further credit hours in Statistics courses including at least 6 credit hours in courses at the 4000 level or higher but not including Statistics [459A/B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
5. Chemistry [2400](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [2401](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), Human Biosciences [2001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or the former Biochemistry 2101 or 2201, and Human Biosciences [2003](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or the former Biochemistry 3106 or 3206;
6. Biology [2060](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2250](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2600](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2900](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), one of [3401](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3402](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), or [4404](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/). In addition, further Biology courses at the 2000, 3000 or 4000 level must be selected by the student in consultation with the supervisor to make up a minimum of 42 credit hours in Biology but not including Biology [499A](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or [499B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
7. Either Biology [499A/B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or Statistics [459A/B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/); and
8. A computing course. Computer Science [1510](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) is recommended.

#### [10.2.12 Cell Biology and Human Biosciences Joint Honours](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/#10.2.12)

The following courses are required:

1. Six credit hours in [Critical Reading and Writing (CRW)](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-humanities-and-social-sciences/6/1/#d.en.307242) courses, including at least 3 credit hours in English courses.
2. Biology [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [1002](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), Chemistry [1050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [1051](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or [1200](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)), Mathematics [1000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), Statistics [2550](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
3. Human Biosciences [2001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or the former Biochemistry 2101 or Biochemistry 2201), [2002](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or the former Biochemistry 2600), [2003](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or Biochemistry [3206](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)), [2004](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or the former Biochemistry 2100 or 2200), [2901](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), Chemistry [2400](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
4. Human Biosciences [3004](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and Medicine [310A/B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
5. Human Biosciences [4800](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (Capstone);
6. An additional 15 credit hours to be selected from Human Biosciences [3001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3002](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3003](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3101](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3906](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or [3907](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4002](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4101](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4102](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4104](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4200](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4201](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4230](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4231](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4232](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
7. Biology [2060](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2250](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2600](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2900](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3530](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4241](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), plus one of Biology [3401](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3402](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4245](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or [4404](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
8. 12 credit hours from the following: Biology [3050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3052](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or Biochemistry [3052](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)), [3401](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3402](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3500](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), the former 3620, [3950](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3951](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4010](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), the former 4040, [4050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4200](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or Human Biosciences [3101](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)), [4245](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4250](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4251](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), the former 4255, [4404](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4550](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4605](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4607](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
9. Human Biosciences [499A/B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or Biology [499A/B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/); and
10. Electives to make up 120 credit hours.

Seventy-five credit hours in Biology, Human Biosciences, Chemistry and Medicine courses beyond the first-year level from those listed in the program shall contribute to those in which a grade of "B" or an average of 75 or higher is required.

#### [10.2.13 Chemistry and Earth Sciences Joint Honours](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/#10.2.13)

The following courses, including prerequisites, where applicable, will be required:

1. Six credit hours in [Critical Reading and Writing (CRW)](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-humanities-and-social-sciences/6/1/#d.en.307242) courses, including at least 3 credit hours in English courses.
2. Mathematics [1000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), Earth Sciences [1000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [1002](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), Chemistry [1050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [1051](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or [1010](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), the former 1011 and the former 1031) (or [1200](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)) or their equivalents, Physics [1050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or [1020](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)) and [1051](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or [1021](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)).
3. Earth Sciences [2030](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2031](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2401](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2502](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2702](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2905](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3420](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3600](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/); plus 6 additional credit hours in 3000-level Earth Sciences courses, and 9 additional credit hours in 4000-level Earth Sciences courses.
4. Chemistry [2100](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2210](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2301](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2302](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2400](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2401](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [3110](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/); and at least 6 additional credit hours in 3000-level and 6 credit hours in 4000-level Chemistry courses.
5. Mathematics [2000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [2050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/).
6. Biology [2120](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and Human Biosciences [2001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or the former Biochemistry 2101 or 2201.
7. An Honours Dissertation (Earth Sciences [499A/B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or Chemistry [490A/B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)). The topic of the Honours Dissertation must have the prior approval of the Heads of the two Departments. A faculty member of either Department may act as supervisor.
8. Other courses to complete the prescribed minimum of 120 credit hours.

Any change in the program of study must have the prior approval of the Heads of the two Departments concerned.

#### [10.2.14 Chemistry and Human Biosciences Joint Honours](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/#10.2.14)

The following courses are required:

1. Six credit hours in [Critical Reading and Writing (CRW)](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-humanities-and-social-sciences/6/1/#d.en.307242) courses, including at least 3 credit hours in English courses;
2. Chemistry [1050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [1051](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or [1200](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)), Mathematics [1000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), Physics [1050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or [1020](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)) and [1051](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or [1021](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)), Biology [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [1002](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) are highly recommended;
3. Mathematics [2000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
4. Chemistry [2100](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2210](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2301](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2302](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2400](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2401](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3110](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3211](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4410](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
5. Nine further credit hours in Chemistry courses numbered 3000 or higher, at least 6 credit hours of which must be in courses numbered 4000 or higher;
6. Human Biosciences [2001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or the former Biochemistry 2101 or 2201), [2002](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or the former Biochemistry 2600), [2003](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or the former Biochemistry 3206), [2004](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or the former Biochemistry 2100 or 2200), [2901](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
7. Two of Human Biosciences [3001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3002](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3003](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3004](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3005](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
8. An additional 12 credit hours to be selected from Human Biosciences [3001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3002](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3003](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3101](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3906](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or [3907](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4002](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4101](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4102](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4104](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4200](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4201](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4230](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4231](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4232](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
9. Human Biosciences [4800](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (Capstone);
10. Human Biosciences [499A/B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or Chemistry [490A/B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/); and
11. A sufficient number of elective courses to bring the degree to a total of 120 credit hours.

#### [10.2.15 Chemistry and Physics Joint Honours](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/#10.2.15)

The following courses are prescribed:

1. Six credit hours in [Critical Reading and Writing (CRW)](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-humanities-and-social-sciences/6/1/#d.en.307242) courses, including at least 3 credit hours in English courses.
2. Mathematics [1000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), 3202, and [2260](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/).
3. Physics [1050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or [1020](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)) and [1051](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2055](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2750](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or [2056](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2820](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3220](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3500](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3750](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3820](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3900](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4820](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), 3 additional credit hours in a Physics course numbered 3000 or higher and 6 additional credit hours in Physics courses numbered 4000 or higher.
4. Chemistry [1050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [1051](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or Chemistry [1200](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)), [2100](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2210](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2301](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2302](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2400](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2401](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3210](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or [3211](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3303](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), and 6 additional credit hours in Chemistry courses numbered 3000 or higher.
5. Human Biosciences [2001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or the former Biochemistry 2101 or 2201, or Human Biosciences [2901](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/).
6. An Honours Dissertation (Chemistry [490A/B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or Physics [490A/B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)). The topic of the Honours Dissertation must have the prior approval of the Heads of the two Departments. A faculty member of either Department may act as supervisor.
7. A sufficient number of elective courses to bring the degree total to 120 credit hours.

#### [10.2.16 Computer Science and Geography Joint Honours](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/#10.2.16)

As a component of the [Degree Regulations](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/4/) for the Honours Degree of Bachelor of Science, the following courses are required:

1. Computer Science Requirements  
   Forty-eight credit hours in Computer Science courses are required for the Joint Honours:
   1. [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/),[1002](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [1003](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2002](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2003](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2004](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2005](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2006](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2007](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2008](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), the former 4751.
   2. Six additional credit hours in courses at the 4000 level not including [499A/B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/).
   3. Twelve additional credit hours in courses at the 3000 level or beyond.
2. Geography Requirements  
   Forty-eight credit hours in Geography courses are required for the Joint Honours:
   1. [1050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2102](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2195](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2302](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2425](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3202](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3222](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3228](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or the former 2226 and the former 3226), [3250](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3260](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4202](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4250](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4261](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), the former 4291, [490A](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [490B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/).
   2. Three additional credit hours in courses at the 3000 level.
3. Additional Requirements
   1. Mathematics [1000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), and [2050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/).
   2. An Honours Dissertation (either Computer Science [499A/B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or Geography [4999](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)) with the topic chosen in consultation with both departments.

#### [10.2.17 Computer Science and Physics Joint Honours (B.Sc. only)](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/#10.2.17)

The following courses are prescribed:

1. Chemistry [1050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [1051](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or Chemistry [1010](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), the former 1011, and the former 1031) (or [1200](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)).
   1. Computer Science [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/),[1002](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [1003](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2002](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2003](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2004](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2005](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2006](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2007](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2008](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3731](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/).
   2. Nine additional credit hours in Computer Science courses numbered 3000 or higher, including at least 3 credit hours in courses at the 4000 level.
   3. Physics [1050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or [1020](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)) and [1051](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/).
   4. Physics [2053](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2055](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2750](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2820](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3220](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3400](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3500](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3750](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3800](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), and [3820](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/).
   5. Three additional credit hours in Physics at the 4000 level.
2. Physics [490A/B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or Computer Science [499A/B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/).
   1. Mathematics [1000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/).
   2. Mathematics [2000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2260](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), and [3202](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/).
3. Six credit hours in [Critical Reading and Writing (CRW)](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-humanities-and-social-sciences/6/1/#d.en.307242) courses, including at least 3 credit hours in English courses.
4. Two electives to bring the total credit hours to 120. Computer Science [2500](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and Statistics [2550](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) are recommended.

The topic for the honours project or thesis, Computer Science [499A/B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or Physics [490A/B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), must be chosen with the prior approval of both departments.

#### [10.2.18 Computer Science and Pure Mathematics Joint Honours](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/#10.2.18)

As a component of the [Degree Regulations](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/4/) for the Honours Degree of Bachelor of Science, the following courses are required:

At least 51 credit hours in Computer Science courses are required including the following:

1. Computer Science [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [1003](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2002](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2003](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2004](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2005](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2006](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2007](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2008](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/).
2. Excluding [499A/B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), twenty-one additional credit hours from courses numbered 3000 or higher, at least six credit hours of which must be in courses at the 4000 level.

The following courses in Mathematics and Statistics are required:

1. Mathematics [1000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2051](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2130](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2260](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2320](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3202](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3210](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3320](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3340](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), Statistics [2550](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/).
2. Either Mathematics [4000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or [4001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/).
3. Excluding the former Mathematics 3330, the former 4399, and [439A/B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), fifteen additional credit hours in courses offered by the Department of Mathematics and Statistics numbered 3000 or higher including at least nine credit hours from courses numbered 4000 or higher and at least nine credit hours in Pure Mathematics courses.
4. An Honours Dissertation (either Computer Science [499A/B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or Mathematics [439A/B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)) with the topic chosen in consultation with both departments.

Note:

There is an Undergraduate Advisor in each Department. These advisors should be consulted on all academic matters.

#### [10.2.19 Computer Science and Statistics Joint Honours](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/#10.2.19)

As a component of the [Degree Regulations](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/4/) for the Honours Degree of Bachelor of Science, the following courses are required:

1. Mathematics [1000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2051](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2320](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3340](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), Statistics [1510](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or [2500](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or [2550](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2410](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or [3410](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2501](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or [2560](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3411](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3520](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3521](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3540](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4530](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4590](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/).
2. Eighteen further credit hours in Statistics courses including at least 12 credit hours in courses numbered 4000 or higher, but not including Statistics [4581](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [459A/B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/).
3. Computer Science [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [1003](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2002](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2003](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2004](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2005](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2006](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2007](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2008](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4734](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/).
4. Eighteen additional credit hours in Computer Science courses at the 3000 level or higher, not including [499A/B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/).
5. An Honours Dissertation (either Computer Science [499A/B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or Statistics [459A/B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)) with the topic chosen in consultation with both departments.

#### [10.2.20 Earth Sciences and Geography Joint Honours](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/#10.2.20)

The following courses will be required. A few prerequisites are not met by this list of courses, and students are advised to obtain advice from instructors in such cases to be sure that they are prepared for course material. Both departmental Heads can advise students on a workable sequencing of courses to complete the degree in a timely manner, and students should view a student handbook that describes thematic streams within the program and offers specific guidance about course selection.

1. Six credit hours in [Critical Reading and Writing (CRW)](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-humanities-and-social-sciences/6/1/#d.en.307242) courses, including at least 3 credit hours in English courses.
2. Geography [1050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), Mathematics [1000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), Earth Sciences [1000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [1002](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), Chemistry [1050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or equivalent) and [1051](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or equivalent), Physics [1050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [1051](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), or Physics [1020](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [1021](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/).
3. Geography [2001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or [2302](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), and Geography [2102](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2195](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), the former 2226, [2425](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and the former 3226, Earth Sciences [2401](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or [2502](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), and Earth Sciences [2030](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2031](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2702](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [2905](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/).
4. Mathematics [2000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or Statistics [2550](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or Geography [3222](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), Biology [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [1002](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), or Biology [2120](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or Physics [2055](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/).
5. Either Earth Sciences [499A](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [499B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), or the former Geography 4990 and Geography [4999](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/).
6. At least an additional 40 credit hours from Earth Sciences and Geography, with a minimum of 16 credit hours from Earth Sciences and 18 credit hours from Geography; and a minimum of 9 credit hours at the 4000-level in each discipline. Earth Sciences [2150](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2914](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2915](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2916](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2917](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2918](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4310](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), and [4950](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) cannot be used to fulfill this requirement. Geography [2105](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), 2290, 2405, 2460 and [2495](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) cannot be used to fulfill this requirement.
7. Additional credit hours selected to conform to the [Degree Regulations](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/4/) for the Honours Degree of Bachelor of Science so as to achieve a total of 120 credit hours.

Notes:

1. The topic of the Honours dissertation must be chosen with the approval of both Departments. A faculty member of either Department may act as supervisor.
2. Any change in the program of study must have the prior approval of the Heads of both Departments concerned.
3. The number of specified courses means that the second CRW course will be taken normally in the second or third year of the program.
4. Students who do not satisfy the [Graduation Requirements](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/4/8/) for the Honours Degree of Bachelor of Science, but who successfully complete all the courses, with the exception of the Honours dissertation, and who satisfy all other requirements for the Bachelor of Science, will be eligible for consideration to receive a General Degree of Bachelor of Science with a Joint Major in Earth Sciences and Geography.

#### [10.2.21 Earth Sciences and Physics Joint Honours](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/#10.2.21)

This program was formerly in the Earth Sciences section of the Calendar as an Honours Degree of Bachelor of Science in Geophysics. The following courses will be required:

1. Six credit hours in [Critical Reading and Writing (CRW)](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-humanities-and-social-sciences/6/1/#d.en.307242) courses, including at least 3 credit hours in English courses.
2. Mathematics [1000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), Earth Sciences [1000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [1002](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), Chemistry [1050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [1051](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or [1200](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)), Physics [1050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or [1020](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)) and [1051](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/).
3. Earth Sciences [2030](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2401](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2502](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2702](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2905](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3170](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3172](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3420](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3905](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4171](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4173](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4179](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/).
4. Physics [2055](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2750](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or [2056](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2820](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3220](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3230](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3500](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3820](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4820](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/); plus 9 other credit hours in Physics courses at 3000 level or higher.
5. Mathematics [2000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2260](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), and [3202](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/).
6. Either Earth Sciences [499A/B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or Physics [490A/B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/).
7. Other courses to complete at least a minimum of 120 credit hours.

Any change in the program of study must have the prior approval of the Heads of the two Departments concerned.

#### [10.2.22 Geophysics and Physical Oceanography Joint Honours](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/#10.2.22)

The program requires the following courses:

1. Six credit hours in [Critical Reading and Writing (CRW)](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-humanities-and-social-sciences/6/1/#d.en.307242) courses, including at least 3 credit hours in English courses.
2. Chemistry [1050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [1051](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or Chemistry [1200](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)), Mathematics [1000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), Earth Sciences [1000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [1002](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), Physics [1050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or [1020](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)) and [1051](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/).
3. Earth Sciences [2905](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3170](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3172](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4105](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4171](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4173](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4179](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and 10 credit hours at the 2000 level or higher with at least 3 credit hours at the 3000 level.
4. Physics [2053](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2055](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2820](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3220](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3300](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3500](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3820](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4205](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4300](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4330](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4820](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) plus one of Physics [3600](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3150](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3400](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3550](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or [3900](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/).
5. Mathematics [2000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2051](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2260](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), and [3202](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/).
6. Either Earth Sciences [499A](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [499B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or Physics [490A](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [490B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/).
7. Other courses to complete the prescribed minimum of 120 credit hours.

#### [10.2.23 Human Biosciences and Physics Joint Honours](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/#10.2.23)

The following courses are required:

1. Six credit hours in [Critical Reading and Writing (CRW)](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-humanities-and-social-sciences/6/1/#d.en.307242) courses, including at least 3 credit hours in English courses;
2. Chemistry [1050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [1051](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or [1200](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)), Mathematics [1000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), Physics [1050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or [1020](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)) and [1051](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
3. Chemistry [2400](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
4. Chemistry [2301](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or Physics [2053](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
5. Mathematics [2000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2260](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), either Mathematics [3202](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or Physics [3810](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
6. Human Biosciences [2001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or the former Biochemistry 2101 or 2201), [2002](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or the former Biochemistry 2600), [2003](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or the former Biochemistry 3206), [2004](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or the former Biochemistry 2100 or 2200), [2901](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or Biochemistry [2901](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/));
7. Two of Human Biosciences [3001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3002](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3003](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3004](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3005](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
8. An additional 9 credit hours to be selected from Human Biosciences [3001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3002](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3003](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3101](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or Biochemistry [4105](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)), [3105](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3906](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or [3907](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4002](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4101](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4102](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4104](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4200](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4201](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4230](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4231](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4232](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
9. Human Biosciences [4800](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (Capstone);
10. Physics [2055](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2750](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or [2056](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2820](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3220](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3400](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3500](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3750](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3820](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3900](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), plus one 4000 level Physics course;
11. Human Biosciences [499A/B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or Physics [490A/B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/); and
12. Other courses to complete the prescribed minimum of 120 credit hours in courses for the Joint Honours degree.

#### [10.2.24 Human Biosciences and Psychology (Behavioural Neuroscience) Joint Honours](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/#10.2.24)

Note: Students completing this program cannot receive credit for Psychology 2920.

The following courses (or equivalent) are required:

1. Six credit hours in [Critical Reading and Writing (CRW)](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-humanities-and-social-sciences/6/1/#d.en.307242) courses, including at least 3 credit hours in English courses;
2. Chemistry [1050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [1051](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or [1200](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)), Biology [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [1002](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), Mathematics [1000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
3. Human Biosciences [2001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or the former Biochemistry 2101 or 2201), [2002](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or the former Biochemistry 2600), [2003](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or the former Biochemistry 3206), [2004](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or the former Biochemistry 2100 or 2200), [2901](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3004](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), and Medicine [310A/B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
4. An additional 15 credit hours to be selected from Human Biosciences [3001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3002](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3003](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3101](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3906](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or [3907](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4002](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4101](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4102](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4104](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4200](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4201](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4230](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4231](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4232](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
5. Human Biosciences [4800](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (Capstone);
6. Psychology [1000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2521](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2910](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2911](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2930](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3800](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3820](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3900](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
7. Three credit hours in Psychology chosen from the following: the former PSYC 3250, [3810](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3830](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3840](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), or [3860](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
8. Three credit hours in Psychology chosen from the following: [3050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3100](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3251](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3350](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3450](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3620](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3650](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3750](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
9. Any Psychology research experience course and one of Psychology [4850](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4851](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4852](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4853](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), or [4854](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/); or, any Psychology selected topics course and Psychology [4870](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
10. Human Biosciences [499A/B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or Psychology [499A/B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/); and
11. Chemistry [2400](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/).

Students in first year intending to follow this program should note the regulations for admission to Major programs in Psychology and that the deadline for submission of a completed application form to the Department of Psychology is June 1 for the Fall semester.

[10.2.25 Marine Biology Joint Honours](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/#10.2.25)

The program is jointly administered by the Department of Ocean Sciences and the Department of Biology. To be eligible for admission, students would normally follow the requirements for the [Joint Major in Marine Biology](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/1/#d.en.303971). Specifically, students must have successfully completed Biology [2060](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2250](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2600](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), and [2900](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and Ocean Sciences [2000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2100](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and 2300 and obtained in these courses a grade of "B" or better, or an average of 75% or higher. Selection is based on academic performance in the required courses.

Students who wish to be admitted to this programs must submit an "[Application for Admission to Honours Program Faculties of Humanities and Social Sciences or Science](https://www.mun.ca/regoff/forms.php)" to the Department of Biology and the Department of Ocean Sciences.

The following courses will be required:

1. Six credit hours in [Critical Reading and Writing (CRW)](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-humanities-and-social-sciences/6/1/#d.en.307242) courses, including at least 3 credit hours in English courses;
2. Mathematics [1000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
3. Earth Sciences [1000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
4. Statistics [2550](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or any of the courses listed in the credit restrictions of Statistics [2550](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
5. Physics [1020](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [1021](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or [1050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [1051](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/));
6. Chemistry [1050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [1051](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or Chemistry [1200](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)), and Chemistry [2400](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
7. Human Biosciences [2001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or the former Biochemistry 2101 or 2201;
8. Biology [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [1002](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2060](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2122](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2250](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or Human Biosciences [2004](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or the former Biochemistry 2100 or 2200), [2600](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2900](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3710](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), and [3711](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
9. Ocean Sciences [1000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2100](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2300](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and at least one of [2500](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or [4500](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) (or Biology [3709](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or [4710](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/));
10. Additional courses to complete a required 69 combined credit hours in Biology and Ocean Sciences with a minimum of 30 credit hours in either subject (except Biology [2040](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2041](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2120](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3053](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), and [3820](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/)). A minimum of 9 credit hours in Biology at the 3000/4000 level and 15 credit hours in Ocean Sciences at the 3000/4000 level is required;
11. Either Biology [499A](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [499B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or Ocean Sciences [499A](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) and [499B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/); and
12. A sufficient number of elective courses to bring the degree total to 120 credit hours.

Courses cross listed between Biology and Ocean Sciences can only count for one subject or the other.

A maximum of half of all Biology electives can be Biology courses with no associated laboratory/seminar (i.e., courses that have 3 contact hours/week).

#### [10.2.26 Pure Mathematics and Statistics Joint Honours](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/#10.2.26)

As a component of the [Degree Regulations](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/4/) for the Honours Degree of Bachelor of Science, the following courses are required:

1. Mathematics [1000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [1001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2050](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2051](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2130](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2260](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2320](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3001](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3202](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3210](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4000](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), Statistics [1510](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or [2500](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or [2550](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2410](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or [3410](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [2501](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or [2560](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3411](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3520](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [3521](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4402](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4410](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/), [4530](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
2. A computing course early in the program is required. Computer Science [1510](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) is highly recommended;
3. Either Mathematics [439A/B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or Statistics [459A/B](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
4. One of Mathematics [3331](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/) or [3340](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/);
5. Eighteen further credit hours in Pure Mathematics and/or Statistics courses numbered 3000 or higher, excluding the former Mathematics 3330, of which at least 12 credit hours must be from courses numbered 4000 or higher excluding Statistics [4581](https://www.mun.ca/university-calendar/st-johns-campus/faculty-of-science/10/2/).