ENVIRONMENTAL SCIENCE, B.ENV.SC. MAJOR

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Program Information

The Clayton H. Riddell Faculty of Environment, Earth, and Resources offers General, Major, and Honours degree programs leading to a Bachelor of Environmental Science (B.Env.Sc.) and Bachelor of Environmental Studies (B.Env.St.). Through an interdisciplinary approach, environmental issues relating to human populations, sustainable resource development, pollution and conservation, environmental health, and endangerment and preservation of species are explored in conjunction with alternative conditions that have the potential to reverse current trends and contribute to ecological sustainability. Students have access to undergraduate courses offered by the Clayton H. Riddell Faculty of Environment, Earth, and Resources as well as the Faculties of Agricultural and Food Sciences, Arts, Law, Engineering, Architecture, and Science in order to complete their education. They are expected to take many courses outside the Riddell Faculty enabling them to obtain a truly interdisciplinary education.

The Major and Honours degree programs serve students who desire advanced study in an environmental field. The programs are intended for students interested in professional training and the opportunity for advanced research. Honours degree programs demand higher academic performance and lead most directly to graduate studies. Students who are ineligible to enter the Honours degree program in their third year may establish this in the following year on the basis of their improved scholastic performance. See a Riddell Faculty student advisor (https://umanitoba.ca/faculties/environment/undergraduate/advice/) in the Faculty general office for information. The degree programs may be pursued on a full- or part-time basis.

The B.Env.Sc. and B.Env.St. degree programs share a general structure that includes a foundation of either introductory Sciences or Social Sciences/ Humanities. Students complete an environmental core and a Focus Area that is defined through consultation with a Riddell Faculty student advisor (riddell.faculty@umanitoba.ca) in the Faculty general office. Students completing the General degree program are required to complete 9 credit hours in a Focus Area; Major, Major Coop, Honours and Honours Coop students complete 33 credit hours in a Focus Area. Other Focus Area requirements are defined in the graduation requirements (https://umanitoba-ca-curr.courseleaf.com/undergraduate-studies/environment-earth-resources/environment-geography/#Minimum%20Performance%20Requirements%20for%20Continuation%20and%20Graduation). You may also refer to the Focus Area Brochure (https://umanitoba.ca/environment-earth-resources/sites/environment-earth-resources/files/2021-03/focus_areas.pdf) for further information.

GENERAL

To qualify for the degree Bachelor of Environmental Science (General) or Bachelor of Environmental Studies (General), students must complete 90 credit hours including all faculty and degree requirements (including the foundation, environmental core and 9 credit hours of minimum 2000-level courses in a Focus Area). Minimum performance requirements include passing grades ('D' or better) in each course and a minimum degree Grade Point Average of 2.00. There is no limit to the number of credit hours a student completes provided he/she does not exceed 48 credit hours of failed courses.

MAJOR

To qualify for the degree Bachelor of Environmental Science (Major) or Bachelor of Environmental Studies (Major), a student must complete 120 credit hours with a minimum degree grade point average of 2.00. Focus Area requirements are as follows: 33 credit hours of which 21 credit hours must be completed at the 3000 or 4000- level; 2.00 Grade Point Average and minimum “C+” grades. There is no limit to the number of credit hours a student completes provided he/she does not exceed 18 credit hours of failed courses

HONOURS

To qualify for the degree Bachelor of Environmental Science (Honours) or Bachelor of Environmental Studies (Honours), a student must complete 120 credit hours with a minimum degree grade point average of 3.25. Focus Area requirements are as follows: 33 credit hours of which 21 credit hours must be completed at the 3000- or 4000-level; 3.00 Grade Point Average and minimum 'C+' grades. There is no limit to the number of credit hours a student completes provided he/she does not exceed 18 credit hours of failed courses.

MINOR IN ANOTHER DEPARTMENT

Students in the B.Env.Sc. and B.Env.St. have the opportunity to complete a Minor in a subject field that is different than that of the declared major, and which normally consist of 18 credit hours from a department offering this option at the University of Manitoba. Students are not permitted to complete a Minor in Environmental Science or Environmental Studies. Contact a Riddell Faculty student advisor (https://umanitoba.ca/faculties/environment/undergraduate/advice/) in the Faculty general office for further information about eligible Minors.

ECO-CANADA ACCREDITATION

The Environmental Science program is accredited to the National Standard of Environmental Programs (https://eco.ca) in Canada by ECO Canada.

Advanced Entry Entrance Requirements

Advanced Entry students are placed in the Major degree program in either the Bachelor of Environmental Science or Bachelor if Environmental Studies until they have completed a minimum of 48 credit hours after which they can transfer to the General or Honours program or remain in the Major. To make a program transfer students must consult with a Riddell Faculty student advisor (https://umanitoba.ca/faculties/environment/undergraduate/advice/).

BACHELOR OF ENVIRONMENTAL SCIENCE ADVANCED ENTRY ENTRANCE REQUIREMENTS

Degree: Honours

Minimum Number of Credit Hours: 48

Minimum Degree Grade Point Average: 3.25
Additional Advanced Entry Entrance Requirements: No failures on entry[1]; a grade of 'B' or better in ENVR 1000 and ENVR 2000 as wells a minimum 'C+' in 6 hours of BIOL 1020[3], BIOL 1030[3] or CHEM 1110[3] and 'C' in the other course.

Degree: Honours (Coop)[2]

Minimum Number of Credit Hours: 60
Minimum Degree Grade Point Average: 3.25
Additional Advanced Entry Entrance Requirements: No failures on entry[1]; ENVR 2900; students must satisfy the requirements for entrance/continuation in the regular program and (normally) have completed:

Course	Title	Hours
ENVR 1000	Environmental Science 1 - Concepts	3
ENVR 2000	Environmental Science 2 - Issues	3
ENVR 2810	Environmental Critical Thinking and Scientific Research	3
ENVR 3160	Environmental Responsibilities and the Law	3
STAT 1000	Basic Statistical Analysis 1 [3]	3
STAT 2000	Basic Statistical Analysis 2 [3]	3
BIOL 2300	Principles of Ecology [3]	3
or AGEC 2370	Principles of Ecology	
ECON 2390	Introduction to Environmental Economics	3
or ABIZ 2390	Introduction to Environmental Economics	
BIOL 1020	Biology 1: Principles and Themes [3]	3
BIOL 1030	Biology 2: Biological Diversity, Function and Interactions [3]	3
GEOG 1290	Introduction to Physical Geography [3]	3
or GEOL 1340	The Dynamic Earth	

Degree: Major

Minimum Number of Credit Hours: 24
Minimum Degree Grade Point Average: 2.00
Additional Advanced Entry Entrance Requirements: 12 credit hours taken from the following with a grade of 'C+' or better in six of the 12 credit hours, and a grade of 'C' or better in the remaining six credit hours:

Course	Title	Hours
ENVR 1000	Environmental Science 1 - Concepts	3
ENVR 2000	Environmental Science 2 - Issues	3
BIOL 1020	Biology 1: Principles and Themes [3]	3
BIOL 1030	Biology 2: Biological Diversity, Function and Interactions [3]	3
CHEM 1100	Introductory Chemistry 1: Atomic and Molecular Structure and Energetics [3]	3
CHEM 1110	Introductory Chemistry 2: Interaction, Reactivity, and Chemical Properties [3]	3
STAT 1000	Basic Statistical Analysis 1 [3]	3
STAT 2000	Basic Statistical Analysis 2 [3]	3
One of the following: [3]		3
MATH 1500	Introduction to Calculus	
MATH 1200	Elements of Discrete Mathematics	
MATH 1300	Vector Geometry and Linear Algebra	
MATH 1310	Matrices for Management and Social Sciences	
MATH 1510	Applied Calculus 1	
MATH 1520	Introductory Calculus for Management and Social Sciences (No longer offered)	
PHYS 1020	General Physics 1 [3]	3
or PHYS 1050	Physics 1: Mechanics	
PHYS 1030	General Physics 2 [3]	3
or PHYS 1070	Physics 2: Waves and Modern Physics	
GEOG 1290	Introduction to Physical Geography [3]	3
or GEOL 1340	The Dynamic Earth	

Degree: Major (Coop)[2]

Minimum Number of Credit Hours: 60
Minimum Degree Grade Point Average: 2.50
Additional Advanced Entry Entrance Requirements: ENVR 2900; students must satisfy the requirements for continuation in the regular program and (normally) have completed:

Course	Title	Hours
ENVR 1000	Environmental Science 1 - Concepts	3
ENVR 2000	Environmental Science 2 - Issues	3
ENVR 2810	Environmental Critical Thinking and Scientific Research	3
ENVR 3160	Environmental Responsibilities and the Law	3
STAT 1000	Basic Statistical Analysis 1 [3]	3
STAT 2000	Basic Statistical Analysis 2 [3]	3
ECON 2390	Introduction to Environmental Economics	3
or ABIZ 2390	Introduction to Environmental Economics	
BIOL 2300	Principles of Ecology [3]	3
or AGEC 2370	Principles of Ecology	
BIOL 1020	Biology 1: Principles and Themes [3]	3
BIOL 1030	Biology 2: Biological Diversity, Function and Interactions [3]	3
GEOG 1290	Introduction to Physical Geography [3]	3
or GEOL 1340	The Dynamic Earth	

Degree: General

Minimum Number of Credit Hours: 48
Minimum Degree Grade Point Average: 2.00

1 Students may be permitted to enter the program without satisfying all requirements listed. Students should consult with a Student Advisor for further information.

2 Equivalent courses offered through UniversBoniface may be used in lieu of the specified courses identified in the entrance requirements chart. Université de Saint- Boniface courses end in the number "1" (e.g. GEOG 1281)

3 Students may be permitted to enter the program without satisfying all requirements listed. Students should consult with the Cooperative Education Coordinator for further information.

Minimum Performance Requirements for Continuation and Graduation

A student's academic performance will be assessed with his/her application for admission to the Clayton H. Riddell Faculty of Environment, Earth, and Resources and following each term thereafter. A Riddell Faculty student advisor must approve a student's registration

each Fall/Winter term. Any revisions to this schedule should also be approved prior to the end of the registration revision period.

To be in **good standing** and permitted to continue in a degree program, a student must achieve the minimum standards at each point of assessment. This assessment is based on the student's minimum degree Grade Point Average and the number of failed courses after admission to the Riddell Faculty.

To graduate from either a Bachelor of Environmental Science or the Bachelor of Environmental Studies with the intended degree designation, a student must achieve the minimum standards and graduation requirements following the final term of registration and satisfy all degree course requirements in the foundation, environment core and Focus Area. In addition, students must satisfy the residence requirement by completing either a total of 48 credit hours or their last 24 credit hours at the University of Manitoba. These courses must be acceptable for credit in either the Bachelor of Environmental Science or the Bachelor of Environmental Studies.

Students who do not meet these minimum performance requirements for continuation or graduation will be required to transfer to the appropriate program based on their performance and eligibility. Students who do not meet the minimum performance requirements for the General degree program will be placed on probation or academic suspension as defined in Academic Warning, Probation, Academic Suspension and Special Students (https://catalog.umanitoba.ca/undergraduate-studies/environment-earth-resources/#facultyacademicregulationstext) (Academic Standing).

Students required to withdraw from the Honours degree program will have the statement 'Required to Withdraw from the Honours Program' recorded on their transcript. Similarly, students required to withdraw out of the Major degree program will have the statement 'Required to Withdraw from the Major Program' recorded on their transcript.

DEGREE PROGRAM (CREDIT HOURS): HONOURS (120)

Minimum Performance Requirements

- Minimum Degree Grade Point Average (DGPA): 3.25
- Maximum Credit Hours of Failures: 18
- Focus Area: 33 credit hours of which 21 must be at the 3000- or 4000-level; minimum cumulative GPA of 3.00; minimum 'C+' grade in each course.

Additional Graduation Requirements [1]

- Minimum credit hours of course work completed at the 3000- and 4000-levels: 39 credit hours

DEGREE PROGRAM (CREDIT HOURS): HONOURS COOP (120)

Minimum Performance Requirements

- Minimum Degree Grade Point Average (DGPA): 3.25
- Maximum Credit Hours of Failures: 18
- Focus Area: 33 credit hours of which 21 must be at the 3000- or 4000-level; minimum cumulative GPA of 3.00. minimum 'C+' grade in each course.

Additional Graduation Requirements [1]

- ```
  Minimum credit hours of course work completed at the 3000- and
   4000- levels: 39 credit hours
  ```
- Coop Option Courses:

DEGREE PROGRAM (CREDIT HOURS): MAJOR (120)

Minimum Performance Requirements

- Minimum Degree Grade Point Average (DGPA): 2.00
- Maximum Credit Hours of Failures: 18
- Focus Area: 33 credit hours of which 21 must be at the 3000- or 4000-level; minimum cumulative GPA of 2.00.

Additional Graduation Requirements [1]

- Minimum credit hours of course work completed at the 3000- and 4000- levels: 33 credit hours

DEGREE PROGRAM (CREDIT HOURS): MAJOR (COOP) (120)

Minimum Performance Requirements

- Minimum Degree Grade Point Average (DGPA): 2.50
- Maximum Credit Hours of Failures: 18
- Focus Area: 33 credit hours of which 21 must be at the 3000- or 4000-level; minimum cumulative GPA of 2.00.

Additional Graduation Requirements [1]

- Minimum credit hours of course work completed at the 3000- and 4000-levels: 39 credit hours
- Coop Option Courses:

DEGREE PROGRAM (CREDIT HOURS): GENERAL(90)

Minimum Performance Requirements

- Minimum Degree Grade Point Average (DGPA): 2.00
- Maximum Credit Hours of Failures: 48
- Focus Area: 9 credit hours

Graduating with Distinction or First Class Honours

WITH DISTINCTION

Students graduating with a Bachelor of Environmental Science (General) or Bachelor of Environmental Studies (General) degree will have their degree granted 'With Distinction' if they have a minimum Degree Grade Point Average of 3.50 on all course work.

Students graduating with a Bachelor of Environmental Science (Major) or Bachelor of Environmental Studies (Major) degree will have their degree granted 'With Distinction' if they have a minimum Degree Grade Point Average of 3.50 on all course work.

The term Degree with Distinction will appear both on the parchment and on the student's transcript.

FIRST CLASS HONOURS

Students in the Honours program will have their degree granted with 'First Class Honours' if they have a minimum Degree Grade Point Average of 3.50 based on all acceptable course work. The term First Class Honours will appear both on the parchment and on the student's transcript.

Minimum Performance Requirements for Continuation and Graduation

A student's academic performance will be assessed with his/her application for admission to the Clayton H. Riddell Faculty of Environment, Earth, and Resources and following each term thereafter. A Riddell Faculty student advisor must approve a student's registration each Fall/Winter term. Any revisions to this schedule should also be approved prior to the end of the registration revision period.

To be in **good standing** and permitted to continue in a degree program, a student must achieve the minimum standards at each point of assessment. This assessment is based on the student's minimum degree
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Grade Point Average and the number of failed courses after admission to the Riddell Faculty.

To graduate from either a Bachelor of Environmental Science or the Bachelor of Environmental Studies with the intended degree designation, a student must achieve the minimum standards and graduation requirements following the final term of registration and satisfy all degree course requirements in the foundation, environment core and Focus Area. In addition, students must satisfy the residence requirement by completing either a total of 48 credit hours or their last 24 credit hours at the University of Manitoba. These courses must be acceptable for credit in either the Bachelor of Environmental Science or the Bachelor of Environmental Studies.

Students who do not meet these minimum performance requirements for continuation or graduation will be required to transfer to the appropriate program based on their performance and eligibility. Students who do not meet the minimum performance requirements for the General degree program will be placed on probation or academic suspension as defined in Academic Warning, Probation, Academic Suspension and Special Students (https://catalog.umanitoba.ca/undergraduate-studies/environment-earth-resources/#facultyacademicregulationstext) (Academic Standing).

Students required to withdraw from the Honours degree program will have the statement 'Required to Withdraw from the Honours Program' recorded on their transcript. Similarly, students required to withdraw out of the Major degree program will have the statement 'Required to Withdraw from the Major Program' recorded on their transcript.

Degree Program (Credit Hours): Honours (120)

Minimum Performance Requirements

- Minimum Degree Grade Point Average (DGPA): 3.25
- Maximum Credit Hours of Failures: 18
- Focus Area: 33 credit hours of which 21 must be at the 3000- or 4000-level; minimum cumulative GPA of 3.00; minimum 'C+' grade in each course.

Additional Graduation Requirements [1]

- Minimum credit hours of course work completed at the 3000- and 4000-levels: 39 credit hours

Degree Program (Credit Hours): Honours Coop (120)

Minimum Performance Requirements

- Minimum Degree Grade Point Average (DGPA): 3.25
- Maximum Credit Hours of Failures: 18
- Focus Area: 33 credit hours of which 21 must be at the 3000- or 4000-level; minimum cumulative GPA of 3.00. minimum 'C+' grade in each course.

Additional Graduation Requirements [1]

- ```
  Minimum credit hours of course work completed at the 3000- and
   4000- levels: 39 credit hours
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- Coop Option Courses:

Course	Title	Hours
ENVR 2900	Professional Development in the Environmental Sectors 1	1.5
ENVR 3900	Professional Development in the Environmental Sectors 2	1.5
ENVR 3910	Coop Work Term Report 1	1.5
ENVR 3980	Coop Work Term 1	0
ENVR 3920	Coop Work Term Report 2	1.5
ENVR 3990	Coop Work Term 2	0
ENVR 4910	Coop Work Term Report 3 (Optional)	
ENVR 4980	Work Term 3 (Optional)	

Degree Program (Credit Hours): Major (120)

Minimum Performance Requirements

- Minimum Degree Grade Point Average (DGPA): 2.00
- Maximum Credit Hours of Failures: 18
- Focus Area: 33 credit hours of which 21 must be at the 3000- or 4000-level; minimum cumulative GPA of 2.00.

Additional Graduation Requirements [1]

- Minimum credit hours of course work completed at the 3000- and 4000- levels: 33 credit hours

Degree Program (Credit Hours): Major (Coop) (120)

Minimum Performance Requirements

- Minimum Degree Grade Point Average (DGPA): 2.50
- Maximum Credit Hours of Failures: 18
- Focus Area: 33 credit hours of which 21 must be at the 3000- or 4000-level; minimum cumulative GPA of 2.00.

Additional Graduation Requirements [1]

- Minimum credit hours of course work completed at the 3000- and 4000-levels: 39 credit hours
- Coop Option Courses:

Course	Title	Hours
ENVR 2900	Professional Development in the Environmental Sectors 1	1.5
ENVR 3900	Professional Development in the Environmental Sectors 2	1.5
ENVR 3910	Coop Work Term Report 1	1.5
ENVR 3980	Coop Work Term 1	0
ENVR 3920	Coop Work Term Report 2	1.5
ENVR 3990	Coop Work Term 2	0
ENVR 4910	Coop Work Term Report 3 (optional)	
ENVR 4980	Work Term 3 (optional)	

Degree Program (Credit Hours): General(90)

Minimum Performance Requirements

- Minimum Degree Grade Point Average (DGPA): 2.00
- Maximum Credit Hours of Failures: 48
- Focus Area: 9 credit hours

[1] Students must satisfy the residence requirement for the degree program in order to be eligible for graduation. This is defined as either a total of 48 or at least 24 credit hours at the University of Manitoba.

Graduating with Distinction or First Class Honours

WITH DISTINCTION

Students graduating with a Bachelor of Environmental Science (General) or Bachelor of Environmental Studies (General) degree will have their degree granted 'With Distinction' if they have a minimum Degree Grade Point Average of 3.50 on all course work.

Students graduating with a Bachelor of Environmental Science (Major) or Bachelor of Environmental Studies (Major) degree will have their degree
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granted 'With Distinction' if they have a minimum Degree Grade Point Average of 3.50 on all course work.

The term Degree with Distinction will appear both on the parchment and on the student's transcript.

FIRST CLASS HONOURS

Students in the Honours program will have their degree granted with 'First Class Honours' if they have a minimum Degree Grade Point Average of 3.50 based on all acceptable course work. The term First Class Honours will appear both on the parchment and on the student's transcript.

Degree Requirements

Course	Title	Hours
Year 1		
ENVR 1000	Environmental Science 1 - Concepts	3
ENVR 2000	Environmental Science 2 - Issues	3
BIOL 1020	Biology 1: Principles and Themes	3
BIOL 1030	Biology 2: Biological Diversity, Function and Interactions	3
CHEM 1100	Introductory Chemistry 1: Atomic and Molecular Structure and Energetics [1]	3
CHEM 1110	Introductory Chemistry 2: Interaction, Reactivity, and Chemical Properties [1]	3
CHEM 1120	Introduction to Chemistry Techniques [1]	3
MATH 1500	Introduction to Calculus [2]	3
STAT 1000	Basic Statistical Analysis 1 [3]	3
ECON 1010	Introduction to Microeconomic Principles	3
	Hours	**30**
Year 2		
ENVR 2810	Environmental Critical Thinking and Scientific Research [4]	3
ENVR 3160	Environmental Responsibilities and the Law [4]	3
BIOL 2300/ AGEC 2370	Principles of Ecology	3
ECON/ABIZ 2390	Introduction to Environmental Economics	3
PHYS 1020	General Physics 1 [5]	3
STAT 2000	Basic Statistical Analysis 2 [3]	3
One of the following:		3
PHYS 1030	General Physics 2 [6]	
MATH 1200	Elements of Discrete Mathematics	
MATH 1300	Vector Geometry and Linear Algebra [7]	
MATH 1700	Calculus 2 [7]	
One of the following:		3
GEOG 1290	Introduction to Physical Geography	
GEOL 1340	The Dynamic Earth	
GEOL 1440	Course no longer offered	
3 credit hours from the Faculty of Arts		3
	Hours	**27**
Years 3-4		
ENVR 4110	Critical Thinking and the Environment	3
33 credit hours in an approved Focus Area [8]		33
27 credit hours of electives		27
	Hours	**63**
	Total Hours	**120**

1. The former CHEM 1300 and CHEM 1310 may be used in lieu of CHEM 1100, CHEM 1110 and CHEM 1120. CHEM 1122 and CHEM 1126 may be used in lieu of CHEM 1120.
2. MATH 1230 or MATH 1510 or MATH 1520 may be taken in place of MATH 1500 (or equivalent).
3. STAT 1150 and STAT 2150 may be used in lieu of STAT 1000 and STAT 2000.
4. The former ENVR 2170 or the former ENVR 2270 may be used in lieu of ENVR 2810.
5. The former ENVR 2650 may be used in lieu of ENVR 3160.
6. PHYS 1050 and PHYS 1070 may be used in lieu of PHYS 1020 and PHYS 1030.
7. MATH 1310 and MATH 1710 may be taken in place of MATH 1300 and MATH 1700 (or equivalent).
8. Focus Area courses must include a minimum of 21 credit hours at the 3000- and/or 4000-level. Focus Area performance requirements are defined in Minimum Performance Requirements for Continuation and Graduation. (https://catalog.umanitoba.ca/undergraduate-studies/environment-earth-resources/environment-geography/environmental-science-benvsc-honours/#Minimum-Performance-Requirements) Information on Focus Areas is available in the Focus Area Brochure (https://umanitoba.ca/environment-earth-resources/sites/environment-earth-resources/files/2021-03/focus_areas.pdf). (https://umanitoba.ca/environment-earth-resources/sites/environment-earth-resources/files/2021-03/focus_areas.pdf)

Advanced Entry into the degree programs is summarized in the Overview (p. 1).

The courses required in this program will satisfy the University Mathematics Requirements (https://catalog.umanitoba.ca/undergraduate-studies/general-academic-regulations/#Residence-Written-English).

The W course (https://catalog.umanitoba.ca/undergraduate-studies/general-academic-regulations/#Residence-Written-English) must be completed within the first 60 credit hours of coursework.

Major Cooperative Option

Course	Title	Hours
Year 1		
ENVR 1000	Environmental Science 1 - Concepts	3
ENVR 2000	Environmental Science 2 - Issues	3
BIOL 1020	Biology 1: Principles and Themes	3
BIOL 1030	Biology 2: Biological Diversity, Function and Interactions	3
CHEM 1100	Introductory Chemistry 1: Atomic and Molecular Structure and Energetics [1]	3
CHEM 1110	Introductory Chemistry 2: Interaction, Reactivity, and Chemical Properties [1]	3
CHEM 1120	Introduction to Chemistry Techniques [1]	3
MATH 1500	Introduction to Calculus [2]	3
STAT 1000	Basic Statistical Analysis 1 [3]	3

ECON 1010	Introduction to Microeconomic Principles	3
	Hours	**30**
Year 2		
ENVR 2810	Environmental Critical Thinking and Scientific Research [4]	3
ENVR 3160	Environmental Responsibilities and the Law [5]	3
BIOL 2300/ AGEC 2370	Principles of Ecology	3
ECON/ABIZ 2390	Introduction to Environmental Economics	3
PHYS 1020	General Physics 1 [6]	3
STAT 2000	Basic Statistical Analysis 2 [3]	3
ENVR 2900	Professional Development in the Environmental Sectors 1	1.5
One of the following:		3
PHYS 1030	General Physics 2 [6]	
MATH 1200	Elements of Discrete Mathematics	
MATH 1300	Vector Geometry and Linear Algebra [7]	
MATH 1700	Calculus 2 [7]	
One of the following:		3
GEOG 1290	Introduction to Physical Geography	
GEOL 1340	The Dynamic Earth	
GEOL 1440	Course no longer offered	
3 credit hours from the Faculty of Arts		3
ENVR 3980	Coop Work Term 1	0
ENVR 3910	Coop Work Term Report 1	1.5
	Hours	**30**
Years 3-4		
ENVR 4110	Critical Thinking and the Environment	3
33 credit hours in an approved Focus Area [8]		33
ENVR 3900	Professional Development in the Environmental Sectors 2	1.5
ENVR 3990	Coop Work Term 2	0
ENVR 3920	Coop Work Term Report 2	1.5
ENVR 4980	Work Term 3 (optional) [9]	
ENVR 4910	Coop Work Term Report 3 (optional) [9]	
21 credit hours of electives		21
	Hours	**60**
	Total Hours	**120**

1. The former CHEM 1300 and CHEM 1310 may be used in lieu of CHEM 1100, CHEM 1110 and CHEM 1120. CHEM 1122 and CHEM 1126 may be used in lieu of CHEM 1120.
2. MATH 1230 or MATH 1510 or MATH 1520 may be taken in place of MATH 1500 (or equivalent).
3. STAT 1150 and STAT 2150 may be used in lieu of STAT 1000 and STAT 2000.
4. The former ENVR 2170 or the former ENVR 2270 may be used in lieu of ENVR 2810.
5. The former ENVR 2650 may be used in lieu of ENVR 3160.
6. PHYS 1050 and PHYS 1070 may be used in lieu of PHYS 1020 and PHYS 1030.
7. MATH 1310 and MATH 1710 may be taken in place of MATH 1300 and MATH 1700 (or equivalent).
8. Focus Area courses must include a minimum of 21 credit hours at the 3000- and/or 4000-level. Focus Area performance requirements are defined in Minimum Performance Requirements for Continuation and Graduation (https://catalog.umanitoba.ca/undergraduate-studies/environment-earth-resources/environment-geography/environmental-science-benvsc-honours/#Minimum-Performance-Requirements). Information on Focus Areas is available in the Focus Area Brochure (https://umanitoba.ca/environment-earth-resources/sites/environment-earth-resources/files/2021-03/focus_areas.pdf).
9. Students in the cooperative education option who complete ENVR 4980 and ENVR 4910 will graduate with an additional 1.5 degree credits for a total of 121.5 credits hours.

Advanced Entry into the degree programs is summarized in the Overview (p. 1).

The courses required in this program will satisfy the University Mathematics Requirements (https://catalog.umanitoba.ca/undergraduate-studies/general-academic-regulations/#Residence-Written-English).

The W course (https://catalog.umanitoba.ca/undergraduate-studies/general-academic-regulations/#Residence-Written-English) must be completed within the first 60 credit hours of coursework.

Important: The Honours and Major programs need not be completed in the manner prescribed in the chart above. The chart indicates one possible arrangement of the required courses and is meant to be a guide around which students can plan their program.

Notes:

- To fulfil prerequisite requirements, a grade of 'C' must be achieved, unless otherwise stated, in any course stipulated as a prerequisite to a further course.
- Students should review the current course topics available through ENVR 2010, ENVR 2020, ENVR 3000, ENVR 3010, ENVR 3020, ENVR 4000, ENVR 4010, and ENVR 4020 as well as those offered through GEOG 3740, GEOG 3750, GEOG 3760, GEOG 3770 and GEOG 4670. Also, all courses are not offered every year or every term. The course schedule for the current academic term is available from the Class Schedule in Aurora (https://aurora.umanitoba.ca/banprod/bwckschd.p_disp_dyn_sched/).
- Students registering in certain courses may be required to participate in field trips or field components and pay a portion of the associated expenses. For details, contact the Department of Environment and Geography general office (environment_geography@umanitoba.ca).
- Equivalent courses offered through Université de Saint-Boniface may be used in lieu of the specified course identified in the program requirements chart.

Cooperative Education Option

A Cooperative Education Option (https://umanitoba.ca/environment-earth-resources/student-experience/#learning-outside-the-classroom) is available to students registered in either the Major or Honours degree programs in Environmental Science, Environmental Studies, or Physical Geography. Coop is an arrangement whereby students spend alternating periods in university and employment. There are several advantages to a cooperative education program for students. One benefit is that students are able to acquire both theoretical knowledge and practical experience. This experience assists them in selecting areas of specialization for their senior courses in their chosen Focus Area or Stream. As well,

Coop assists students in their professional development by enhancing networking opportunities, participation in conferences and workshops and provides the foundation of skills and strategies required in searching and acquiring employment after graduation. Students can also defray some of the costs of their university education through these work term placements. Further information about Cooperative Education and student eligibility is available from the Coop Placement Coordinator (https://umanitoba.ca/faculties/environment/undergraduate/coop/contact.html) available in the Faculty general office.

Students electing to participate in the Cooperative Education Option will be assessed a program fee with their formal admission into the program. Once a student has accepted a position with a Coop employer, no portion of the program fee will normally be refunded.

The Cooperative Education Option consists of two employment work terms, each over a minimum period of four months, and contributes 6 credit hours towards the four year degree program. Students complete ENVR 2900, ENVR 3900, work term placements ENVR 3980, ENVR 3990, and the work term report courses ENVR 3910 and ENVR 3920. Additional work terms are available to interested students. Each academic term and each employment term commence in January, May or September. While on an employment term, a Cooperative Education Option student is not permitted to take more than three additional credit hours of academic work outside of the requirements of the Coop placement without permission of a Riddell Faculty student advisor.

Students are required to register in the appropriate Coop courses and pay course fees prior to beginning their placement.

For more information, please visit the Riddell Faculty Co-operative Education Program (http://umanitoba.ca/faculties/environment/undergraduate/coop/) webpage