Climate Change
(Collaborative Program)

This section presents the requirements for programs in:

• M.A. Anthropology with Collaborative Specialization in Climate Change
• M. Architecture 2-year stream with Collaborative Specialization in Climate Change
• M. Architecture 3-year stream with Collaborative Specialization in Climate Change
• M.A.Sc. Civil Engineering with Collaborative Specialization in Climate Change
• M.Eng. Civil Engineering with Collaborative Specialization in Climate Change
• M.A. Communication with Collaborative Specialization in Climate Change
• M.A. Economics with Collaborative Specialization in Climate Change
• M.A. English with Collaborative Specialization in Climate Change
• M.A. Geography with Collaborative Specialization in Climate Change
• M.Sc. Geography with Collaborative Specialization in Climate Change
• M.A. History with Collaborative Specialization in Climate Change
• M.A. Migration and Diaspora Studies with Collaborative Specialization in Climate Change
• M.A. Psychology with Collaborative Specialization in Climate Change
• M.A. Sociology with Collaborative Specialization in Climate Change
• M.A.Sc. Aerospace Engineering with Collaborative Specialization in Climate Change
• M.A.Sc. Electrical and Computer Engineering with Collaborative Specialization in Climate Change
• M.A.Sc. Environmental Engineering with Collaborative Specialization in Climate Change
• M.A.Sc. Materials Engineering with Collaborative Specialization in Climate Change
• M.A.Sc. Mechanical Engineering with Collaborative Specialization in Climate Change
• M.B.A. with Collaborative Specialization in Climate Change
• M.Eng. Electrical and Computer Engineering with Collaborative Specialization in Climate Change
• M.Eng. Environmental Engineering with Collaborative Specialization in Climate Change
• M.A. Political Economy with Collaborative Specialization in Climate Change
• M.P.P. Sustainable Energy and the Environment with Collaborative Specialization in Climate Change
• M.Eng. Sustainable Energy with Collaborative Specialization in Climate Change
• M.Sc. Management with Collaborative Specialization in Climate Change

Program Requirements

M.A. Anthropology
with Collaborative Specialization in Climate Change (5.0 credits)

Requirements - Thesis pathway:
1. 1.0 credit in:
   CLIM 5000 [1.0] Climate Collaboration
2. 0.0 credit in:
   CLIM 5800 [0.0] Climate Seminar Series
3. 1.0 credit in:
   ANTH 5401 [0.5] Theory in Anthropology
   ANTH 5402 [0.5] Research in Anthropology
4. 1.0 credit in approved electives, chosen in consultation with the student’s advisor
5. 2.0 credits in:
   ANTH 5909 [2.0] M.A. Thesis (in the specialization)

Total Credits 5.0

Requirements - Research essay pathway:
1. 1.0 credit in:
   CLIM 5000 [1.0] Climate Collaboration
2. 0.0 credit in:
   CLIM 5800 [0.0] Climate Seminar Series
3. 1.0 credit in:
   ANTH 5401 [0.5] Theory in Anthropology
   ANTH 5402 [0.5] Research in Anthropology
4. 2.0 credit in approved electives, chosen in consultation with the student’s advisor
5. 1.0 credit in:
   ANTH 5908 [1.0] M.A. Research Essay (in the specialization)

Total Credits 5.0

Requirements - Coursework pathway:
1. 1.0 credit in:
   CLIM 5000 [1.0] Climate Collaboration
2. 0.0 credit in:
   CLIM 5800 [0.0] Climate Seminar Series
3. 1.0 credit in:
   ANTH 5401 [0.5] Theory in Anthropology
   ANTH 5402 [0.5] Research in Anthropology
4. 0.5 credit in a 5000-level ANTH course with sufficient climate change content, with departmental approval
5. 2.5 credits in approved electives, chosen in consultation with the student’s advisor

Total Credits 5.0

M. Architecture 2-year stream
with Collaborative Specialization in Climate Change (8.0 credits)

Note: consult the School regarding registration sequence.

Requirements:
1. 1.0 credit in:
   CLIM 5000 [1.0] Climate Collaboration
2. 0.0 credit in:
### M.A. Architecture 3-year stream with Collaborative Specialization in Climate Change (15.5 credits)

**Note:** consult the School regarding registration sequence.

**Requirements:**

1. **1.0 credit in:**
   - CLIM 5000 [1.0] Climate Collaboration

2. **0.0 credit in:**
   - CLIM 5800 [0.0] Climate Seminar Series

3. **5.5 credits in core:**
   - ARCC 5096 [0.5] Building Technology I
   - ARCC 5097 [0.5] Building Technology II
   - ARCC 5098 [0.5] Building Technology III
   - ARCC 5099 [0.5] Building Technology IV
   - ARCC 5100 [0.5] Advanced Building Systems
   - ARCC 5200 [0.5] Professional Practice
   - ARCH 5010 [0.5] History and Theory of Modern Architecture
   - ARCH 5020 [0.5] Theories of Modernity
   - ARCH 5200 [0.5] Graduate Seminar 1: Introduction to Critical Thought in Architecture
   - ARCH 5201 [0.5] Graduate Seminar 2: Contemporary Theoretical Perspectives in Architecture
   - ARCN 5005 [0.5] Theory and Practice of Architectural Representation

4. **7.0 credits in studio:**
   - ARCS 5030 [1.5] M.Arch 1 - Studio 1
   - ARCS 5032 [1.5] M.Arch 1 - Studio II
   - ARCS 5033 [1.0] M.Arch 1 - Studio III
   - ARCS 5105 [1.5] Graduate Studio 1
   - ARCS 5106 [1.5] Graduate Studio 2

5. **2.0 credits in:**
   - ARCN 5909 [2.0] Thesis - Directed Research Studio (DRS) (must be defended at an oral examination)

**Total Credits** 15.5

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**M.A. Communication with Collaborative Specialization in Climate Change (5.0 credits)**

**Requirements - Research essay pathway:**

1. **1.0 credit in:**
   - CLIM 5000 [1.0] Climate Collaboration

2. **0.0 credit in:**
   - CLIM 5800 [0.0] Climate Seminar Series

3. **1.5 credits in:**
   - COMS 5101 [1.0] Foundations of Communication Studies

**Total Credits** 6.0

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**M.A. Communication with Collaborative Specialization in Climate Change (5.0 credits)**

**Requirements - Coursework pathway:**

1. **1.0 credit in:**
   - CLIM 5000 [1.0] Climate Collaboration

2. **0.0 credit in:**
   - CLIM 5800 [0.0] Climate Seminar Series

3. **4.0 credits in technical engineering courses**

4. **1.0 credit from:**
   - ENVE 5105 [0.5] Atmospheric Aerosols
   - ENVE 5200 [0.5] Climate Change and Engineering
   - ENVE 5201 [0.5] Geo-Environmental Engineering
   - ENVE 5205 [0.5] Sludge Treatment and Disposal
   - ENVJ 5908 [0.5] Anaerobic Digestion
   - ENVJ 5212 [0.5] Climate Change Impacts on Water Resources

**or approved Special Topics in the area of climate change**

**Total Credits** 6.0

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**M.A. Communication with Collaborative Specialization in Climate Change (5.0 credits)**

**Requirements - Coursework pathway:**

1. **1.0 credit in:**
   - CLIM 5000 [1.0] Climate Collaboration

2. **0.0 credit in:**
   - CLIM 5800 [0.0] Climate Seminar Series

3. **4.0 credits in technical engineering courses**

4. **1.0 credit from:**
   - ENVE 5105 [0.5] Atmospheric Aerosols
   - ENVE 5200 [0.5] Climate Change and Engineering
   - ENVE 5201 [0.5] Geo-Environmental Engineering
   - ENVE 5205 [0.5] Sludge Treatment and Disposal
   - ENVJ 5908 [0.5] Anaerobic Digestion
   - ENVJ 5212 [0.5] Climate Change Impacts on Water Resources

**or approved Special Topics in the area of climate change**

**Total Credits** 6.0

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**M.A. Communication with Collaborative Specialization in Climate Change (5.0 credits)**

**Requirements - Research essay pathway:**

1. **1.0 credit in:**
   - CLIM 5000 [1.0] Climate Collaboration

2. **0.0 credit in:**
   - CLIM 5800 [0.0] Climate Seminar Series

3. **1.5 credits in:**
   - COMS 5101 [1.0] Foundations of Communication Studies

**Total Credits** 6.0
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>COMS 5605 [0.5]</td>
<td>Approaches to Communication Research</td>
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<td>4. 1.0 credit in:</td>
<td>1.0</td>
</tr>
<tr>
<td>COMS 5908 [1.0]</td>
<td>Research Essay (in the specialization)</td>
</tr>
<tr>
<td>5. 1.5 credits from the list of optional courses</td>
<td>1.5</td>
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</table>

Total Credits: 5.0

Requirements - Thesis pathway:
1. 1.0 credit in: 1.0
   - CLIM 5000 [1.0] Climate Collaboration
2. 0.0 credit in: 0.0
   - CLIM 5800 [0.0] Climate Seminar Series
3. 1.5 credits in: 1.5
   - COMS 5101 [1.0] Foundations of Communication Studies
   - COMS 5605 [0.5] Approaches to Communication Research
4. 2.0 credits in: 2.0
   - COMS 5909 [2.0] M.A. Thesis (in the specialization)
5. 0.5 credit from the list of optional courses 0.5

Total Credits: 5.0

M.A. Economics with Collaborative Specialization in Climate Change (4.0 credits)

Requirements - Coursework pathway (4.0 credits)
1. 1.0 credit in: 1.0
   - CLIM 5000 [1.0] Climate Collaboration
2. 0.0 credit in: 0.0
   - CLIM 5800 [0.0] Climate Seminar Series
3. 1.5 credits in: 1.5
   - ECON 5020 [0.5] Microeconomic Theory
   - ECON 5021 [0.5] Macroeconomic Theory
   - ECON 5027 [0.5] Econometrics I
4. 0.5 credit in: 0.5
   - ECON 5029 [0.5] Methods of Economic Research (including a research paper on a Climate Change-related topic)
5. 0.5 credit in: 0.5
   - ECON 5507 [0.5] Environmental Aspects of Economic Development
   - ECON 5803 [0.5] Economics of Natural Resources
   - ECON 5804 [0.5] Economics of the Environment
   - ECON 5805 [0.5] Topics in Environmental and Resource Economics
   - or approved Special Topic in the area of Climate Change
6. 0.5 credit in ECON at the 5000 level with sufficient Climate Change content (may be an additional course from Item 5 above), chosen in consultation with Department of Economics 0.5

Total Credits: 4.0

Requirements - Research essay pathway (4.5 credits)
1. 1.0 credit in: 1.0
   - CLIM 5000 [1.0] Climate Collaboration
2. 0.0 credit in: 0.0
   - CLIM 5800 [0.0] Climate Seminar Series
3. 0.5 credit in: 0.5
   - ENGL 5005 [0.5] M.A. Seminar
4. 2.0 credits in ENGL at the 5000 level (excluding ENGL 5908) 2.0
   - ENGL 5908 [1.0] Research Essay (in the specialization)
5. 1.0 credit in: 1.0
   - ENGL 5005 [0.5] M.A. Seminar

Total Credits: 4.5

Requirements - Thesis pathway (4.5 credits)
1. 1.0 credit in: 1.0
   - CLIM 5000 [1.0] Climate Collaboration
2. 0.0 credit in: 0.0
   - CLIM 5800 [0.0] Climate Seminar Series
3. 1.0 credit in ENGL at the 5000-level (excluding ENGL 5909) 1.0
4. 0.5 credit in: 0.5
   - ENGL 5005 [0.5] M.A. Seminar
5. 2.0 credits in: 2.0
   - ENGL 5909 [2.0] M.A. Thesis (in the specialization)

Total Credits: 4.5

M.A. Geography with Collaborative Specialization in Climate Change (5.5 credits)

Requirements:
1. 1.0 credit in: 1.0
   - CLIM 5000 [1.0] Climate Collaboration
2. 0.0 credit in: 0.0
Climate Change (Collaborative Program)

CLIM 5800 [0.0] Climate Seminar Series

1. 1.0 credit in:
    GEOG 5000 [0.5] Approaches to Geographical Inquiry
    GEOG 5905 [0.5] Masters Research Workshop

2.5 credits in:
    GEOG 5909 [2.5] M.A. Thesis (in the specialization and including oral examination of the thesis)

1.0 credit in approved graduate-level electives

6. In addition to the formal requirements, MA students are required to attend the Departmental Seminar series, and the Graduate Field Camp.

Total Credits 5.5

M.Sc. Geography with Collaborative Specialization in Climate Change (5.5 credits)

Requirements:
1. 1.0 credit in:
    CLIM 5000 [1.0] Climate Collaboration

2. 0.0 credit in:
    CLIM 5800 [0.0] Climate Seminar Series

3. 1.0 credit in:
    GEOG 5001 [0.5] Modeling Environmental Systems
    GEOG 5905 [0.5] Masters Research Workshop

4. 0.5 credit in Physical Geography selected from:
    GEOG 5002 [0.5] Quantitative Analysis for Geographical Research
    GEOG 5103 [0.5] Hydrologic Principles and Methods
    GEOG 5104 [0.5] Advanced Biogeography
    GEOG 5107 [0.5] Field Study and Methodological Research
    GEOG 5303 [0.5] Geocryology
    GEOG 5307 [0.5] Soil Resources
    GEOG 5803 [0.5] Seminar in Geomatics
    GEOG 5804 [0.5] Geographic Information Systems
    GEOG 5900 [0.5] Graduate Tutorial
    up to 0.5 credit in GEOG or GEOM at the 4000 level, with departmental approval

3.0 credits in:

Total Credits 5.5

M.A. History with Collaborative Specialization in Climate Change (4.5 credits)

Requirements - research essay pathway (4.5 credits):
1. 1.0 credit in:
    CLIM 5000 [1.0] Climate Collaboration

2. 0.0 credit in:
    CLIM 5800 [0.0] Climate Seminar Series

3. 0.5 credit in:
    HIST 5003 [0.5] Historical Theory and Method

4. 1.5 credits in HIST at the graduate level of which only 0.5 credit may be taken in a designated public history course. With departmental permission, up to 0.5 credit of courses with historical content may be taken from another unit at Carleton University, at the University of Ottawa, or at another accredited institution.

5. 0.5 credit in:
    HIST 5900 [0.5] Directed Research

6. 1.0 credit in:
    HIST 5908 [1.0] M.A. Research Essay (in the specialization)

Total Credits 4.5

Requirements - thesis pathway (4.5 credits):
1. 1.0 credit in:
    CLIM 5000 [1.0] Climate Collaboration

2. 0.0 credit in:
    CLIM 5800 [0.0] Climate Seminar Series

3. 0.5 credit in:
    HIST 5003 [0.5] Historical Theory and Method

4. 1.0 credit in HIST at the graduate level of which only 0.5 credit may be taken in a designated public history course. With departmental permission, up to 0.5 credit of courses with historical content may be taken from another unit at Carleton University, at the University of Ottawa, or at another accredited institution.

5. 2.0 credits in:
    HIST 5909 [2.0] M.A. Thesis (in the specialization)

Total Credits 4.5

M.A. Migration and Diaspora Studies with Collaborative Specialization in Climate Change (5.0 credits)

Requirements - Thesis Pathway:
1. 1.0 credit in:
    CLIM 5000 [1.0] Climate Collaboration

2. 0.0 credit in:
    CLIM 5800 [0.0] Climate Seminar Series

3. 1.0 credit in:
    MGDS 5001 [0.5] MA Core Seminar: Migration and Diaspora Studies
    MGDS 5003 [0.5] Research Seminar in Migration and Diaspora Studies

4. 1.0 credit from Migration and Diaspora Studies electives (see below). Up to 1.0 credit in Migration and Diaspora Studies practicum placements (MGDS 5101) may count toward this requirement.

5. 2.0 credits in:
    MGDS 5909 [2.0] M.A. Thesis (in the specialization)

Total Credits 5.0

Requirements - Research Essay Pathway:
1. 1.0 credit in:
    CLIM 5000 [1.0] Climate Collaboration

2. 0.0 credit in:
    CLIM 5800 [0.0] Climate Seminar Series

3. 1.0 credit in:
    MGDS 5001 [0.5] MA Core Seminar: Migration and Diaspora Studies
    MGDS 5003 [0.5] Research Seminar in Migration and Diaspora Studies

Total Credits 5.0
4. **0.5 credit in** MGDS at the 5000 level. May not include MGDS 5101. **0.5**

5. **1.5 credits from** Migration and Diaspora Studies electives (see below). Up to **1.0 credit** in Migration and Diaspora Studies practicum placements (MGDS 5101) may count toward this requirement. **1.5**

6. **1.0 credit in:**
   - MGDS 5908 [1.0] Research Essay (in the specialization) **1.0**

**Total Credits** **5.0**

**Requirements - Coursework Pathway**

1. **1.0 credit in:**
   - CLIM 5000 [1.0] Climate Collaboration **1.0**

2. **0.0 credit in:**
   - CLIM 5800 [0.0] Climate Seminar Series **0.0**

3. **1.0 credit in:**
   - MGDS 5001 [0.5] MA Core Seminar: Migration and Diaspora Studies **1.0**
   - MGDS 5003 [0.5] Research Seminar in Migration and Diaspora Studies **0.5**

4. **0.5 credit in** MGDS at the 5000 level. May not include MGDS 5101. **0.5**

5. **2.0 credits from** Migration and Diaspora Studies electives (see below). Up to **1.0 credit** in Migration and Diaspora Studies practicum placements (MGDS 5101) may count toward this requirement. **2.0**

6. **0.5 credit in** a graduate course with sufficient climate change content as approved by the Coordinator of the Climate Change Specialization. **0.5**

**Total Credits** **5.0**

**M.A. Psychology with Collaborative Specialization in Climate Change (5.5 credits)**

Requirements:

1. **1.0 credit in:**
   - CLIM 5000 [1.0] Climate Collaboration **1.0**

2. **0.0 credit in:**
   - CLIM 5800 [0.0] Climate Seminar Series **0.0**

3. **1.0 credit in:**
   - PSYC 5410 [0.5] Foundations of the General Linear Model **0.5**
   - PSYC 5401 [0.5] Qualitative Research Methods in Psychology **0.5**
   - PSYC 5407 [0.5] Scale Development and Psychometrics **0.5**
   - PSYC 5411 [0.5] Extension of the General Linear Model **0.5**
   - PSYC 5416 [0.5] Advanced Survey Methods **0.5**
   - PSYC 5417 [0.5] Categorical Data Analysis **0.5**
   - PSYC 5801 [0.5] Special Topics: Statistics **0.5**

4. **0.5 credit from** the following statistics courses: **0.5**
   - PSYC 5802 [0.5] Special Topics: Professional Development **0.5**
   - PSYC 5803 [0.5] Practicum in Psychology **0.5**

5. **2.5 credits in:**
   - PSYC 5906 [0.0] Pro-Seminar in Psychology **2.5**
   - PSYC 5909 [2.5] M.A. Thesis (in the specialization) **2.5**

**Total Credits** **5.5**

**M.A. Sociology with Collaborative Specialization in Climate Change (5.0 credits)**

Requirements - Thesis pathway:

1. **1.0 credit in:**
   - CLIM 5000 [1.0] Climate Collaboration **1.0**

2. **0.0 credit in:**
   - CLIM 5800 [0.0] Climate Seminar Series **0.0**

3. **1.0 credit in:**
   - SOCI 5005 [0.5] Recurring Debates in Social Thought **1.0**
   - SOCI 5809 [0.5] The Logic of the Research Process **0.5**

4. **2.0 credit in** approved electives, chosen in consultation with the student's advisor **2.0**

5. **1.0 credit in:**
   - SOCI 5909 [2.0] M.A. Thesis (in the specialization) **2.0**

**Total Credits** **5.0**

Requirements - Research essay pathway:

1. **1.0 credit in:**
   - CLIM 5000 [1.0] Climate Collaboration **1.0**

2. **0.0 credit in:**
   - CLIM 5800 [0.0] Climate Seminar Series **0.0**

3. **1.0 credit in:**
   - SOCI 5005 [0.5] Recurring Debates in Social Thought **0.5**
   - SOCI 5809 [0.5] The Logic of the Research Process **0.5**

4. **2.0 credit in** approved electives, chosen in consultation with the student's advisor **2.0**

5. **1.0 credit in:**
   - SOCI 5908 [1.0] M.A. Research Essay (in the specialization) **1.0**

**Total Credits** **5.0**

**M.A.Sc. Aerospace Engineering with Collaborative Specialization in Climate Change (5.0 credits)**

Requirements:

1. **1.0 credit in:**
   - CLIM 5000 [1.0] Climate Collaboration **1.0**

2. **0.0 credit in:**
   - CLIM 5800 [0.0] Climate Seminar Series **0.0**

3. **1.5 credits in** courses offered by the OCIMAE. **1.5**

4. Participation in the Mechanical and Aerospace Engineering seminar series **0.25**

5. **2.5 credits in:**
   - CLIM 5000 [1.0] Climate Collaboration **2.5**
   - CLIM 5800 [0.0] Climate Seminar Series **0.5**

**Total Credits** **5.0**
### M.A.Sc. Electrical and Computer Engineering with Collaborative Specialization in Climate Change (5.0 credits)

**Requirements:**
1. **1.0 credit in:**
   - CLIM 5000 [1.0] Climate Collaboration
2. **0.0 credit in:**
   - CLIM 5800 [0.0] Climate Seminar Series
3. **1.5 credits in courses**
   - 1.5
4. **2.5 credits in:**

**Total Credits** 5.0

### M.A.Sc. Environmental Engineering with Collaborative Specialization in Climate Change (5.0 credits)

**Requirements:**
1. **1.0 credit in:**
   - CLIM 5000 [1.0] Climate Collaboration
2. **0.0 credit in:**
   - CLIM 5800 [0.0] Climate Seminar Series
3. **1.5 credits in courses, with at least 0.5 credit from two different areas of study listed below outside the area of EIA, Sustainability and Climate Change**
   - 1.5
4. **0.0 credit in:**
   - ENVE 5800 [0.0] Master's Seminar (participation in the graduate student seminar series)
5. **2.5 credits in:**

**Total Credits** 5.0

### M.A.Sc. Materials Engineering with Collaborative Specialization in Climate Change (5.0 credits)

**Requirements:**
1. **1.0 credit in:**
   - CLIM 5000 [1.0] Climate Collaboration
2. **0.0 credit in:**
   - CLIM 5800 [0.0] Climate Seminar Series
3. **0.5 credit in:**
   - SYSC 5005 [0.5] Methodologies For Discrete-Event Modeling And Simulation
4. **2.5 credits in:**

**Total Credits** 5.0

### M.A.Sc. Mechanical Engineering with Collaborative Specialization in Climate Change (5.0 credits)

**Requirements:**
1. **1.0 credit in:**
   - 1.0

### M.B.A. with Collaborative Specialization in Climate Change (8.5 credits)

**Requirements:**
1. **1.0 credit in:**
   - CLIM 5000 [1.0] Climate Collaboration
2. **0.0 credit in:**
   - CLIM 5800 [0.0] Climate Seminar Series
3. **0.25 credit in:**
   - BUSI 5108 [0.25] Sustainable Business Development
4. **1.0 credit in** elective specialization courses designated as having sufficient climate change content, within the School of Business or elsewhere, with permission of the School of Business.
5. **4.25 credits in compulsory core courses**
6. **1.0 credit in** elective courses
7. **1.0 credit in:**
   - BUSI 5999 [1.0] Internship
8. **0.0 credit in:**
   - BUSI 5998 [0.0] MBA Skills Workshop

**Total Credits** 8.5

1 Students with less than two (2) years of professional employment experience must successfully complete BUSI 5999 [1.0] Internship in order to graduate. Students with two or more years work experience may apply for an exemption.

2 Non-credit required skills workshop.

### M.Eng. Electrical and Computer Engineering with Collaborative Specialization in Climate Change (4.5 credits)

**Requirements - project pathway (4.5 credits)**
1. **1.0 credit in:**
   - CLIM 5000 [1.0] Climate Collaboration
2. **0.0 credit in:**
   - CLIM 5800 [0.0] Climate Seminar Series
3. **0.5 credit in:**
   - ELEC 5302 [0.5] Renewable and Distributed Energy Resource Technologies
   - SERG 5001 [0.5] Sustainable Energy Policy for Engineers
   - SERG 5003 [0.5] Energy Evaluation and Assessment Tools
   - SYSC 5005 [0.5] Optimization Theory and Methods
   - SYSC 5104 [0.5] Methodologies For Discrete-Event Modeling And Simulation

**Total Credits** 5.0
or approved Advanced Topic in the area of climate change
4. 2.5 credits in courses 2.5
5. 0.5 credit in: 0.5
   SYSC 5900 [0.5] Systems Engineering Project (in the area of climate change)

| Total Credits | 4.5 |

Requirements - coursework pathway (4.5 credits)
1. 1.0 credit in: 1.0
   CLIM 5000 [1.0] Climate Collaboration
2. 0.0 credit in: 0.0
   CLIM 5800 [0.0] Climate Seminar Series
3. 0.5 credit from: 0.5
   ELEC 5302 [0.5] Renewable and Distributed Energy Resource Technologies
   SERG 5001 [0.5] Sustainable Energy Policy for Engineers
   SERG 5003 [0.5] Energy Evaluation and Assessment Tools
   SYSC 5005 [0.5] Optimization Theory and Methods
   SYSC 5104 [0.5] Methodologies For Discrete-Event Modeling And Simulation
   or approved Advanced Topic in the area of climate change
4. 3.0 credits in courses 3.0

| Total Credits | 4.5 |

M.Eng. Environmental Engineering with Collaborative Specialization in Climate Change (5.0 credits)

Requirements - Project pathway
1. 1.0 credit in: 1.0
   CLIM 5000 [1.0] Climate Collaboration
2. 0.0 credit in: 0.0
   CLIM 5800 [0.0] Climate Seminar Series
3. 0.5 credit from: 0.5
   ENVE 5105 [0.5] Atmospheric Aerosols
   ENVE 5200 [0.5] Climate Change and Engineering
   ENVE 5201 [0.5] Geo-Environmental Engineering
   ENVE 5205 [0.5] Sludge Treatment and Disposal
   ENVJ 5908 [0.5] Anaerobic Digestion
   ENVJ 5212 [0.5] Climate Change Impacts on Water Resources
   or approved Special Topics in the area of climate change
4. 2.5 credits in courses, with at least 0.5 credit from two different areas of study listed below outside the area of EIA, Sustainability and Climate Change 2.5

| Total Credits | 5.0 |

M.A. Political Economy with Collaborative Specialization in Climate Change (5.0 credits)

Requirements - Thesis pathway (5.0 credits)
1. 1.0 credit in: 1.0
   CLIM 5000 [1.0] Climate Collaboration
2. 0.0 credit in: 0.0
   CLIM 5800 [0.0] Climate Seminar Series
3. 1.0 credit in: 1.0
   PECO 5000 [0.5] Theories of Political Economy
   PECO 5001 [0.5] Methodologies of Political Economy
4. 2.0 credits in: 2.0
   PECO 5909 [2.0] M.A. Thesis (in the specialization, including an oral examination)
5. 1.0 credit in approved graduate level electives (see Selection of Courses, below) 1 1.0

| Total Credits | 5.0 |

Requirements - Research essay pathway (5.0 credits)
1. 1.0 credit in: 1.0
   CLIM 5000 [1.0] Climate Collaboration
2. 0.0 credit in: 0.0
   CLIM 5800 [0.0] Climate Seminar Series
3. 1.0 credit in: 1.0
   PECO 5000 [0.5] Theories of Political Economy
   PECO 5001 [0.5] Methodologies of Political Economy
4. 1.0 credit in: 1.0
   PECO 5908 [1.0] Research Essay (in the specialization)
5. 2.0 credits in approved graduate level electives (see Selection of Courses, below) 1 2.0

| Total Credits | 5.0 |

1 Up to one (1.0) credit may be taken at the 4000 (honours undergraduate) level.

Master of Public Policy - Sustainable Energy and the Environment with Collaborative Specialization in Climate Change (6.0 credits)

Requirements - Coursework pathway:
1. 1.0 credit in: 1.0
   CLIM 5000 [1.0] Climate Seminar Series
<table>
<thead>
<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>CLIM 5000</td>
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</tr>
<tr>
<td>CLIM 5800</td>
<td>Climate Seminar Series</td>
</tr>
<tr>
<td>SERG 5002</td>
<td>Sustainable Energy Engineering for Policy Students</td>
</tr>
<tr>
<td>SERG 5003</td>
<td>Energy Evaluation and Assessment Tools</td>
</tr>
<tr>
<td>SERG 5005</td>
<td>Applied Interdisciplinary Project</td>
</tr>
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<td>SERG 5800</td>
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</tr>
<tr>
<td>PADM 5121</td>
<td>Policy Analysis: The Practical Art of Change</td>
</tr>
<tr>
<td>PADM 5510</td>
<td>Energy Economics</td>
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<tr>
<td>PADM 5515</td>
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<td>PADM 5615</td>
<td>Politics and Policy of Energy in Canada</td>
</tr>
<tr>
<td>SERG 5909</td>
<td>MA Sustainable Energy Thesis (in the specialization)</td>
</tr>
</tbody>
</table>

Total Credits: 6.0

Notes:
1. Courses must be appropriate to the student's qualifications and selected with the approval of the student's program supervisor.

M.Eng. Sustainable Energy with Collaborative Specialization in Climate Change (5.0 Credits)

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<td>PADM 5615</td>
<td>Politics and Policy of Energy in Canada</td>
</tr>
<tr>
<td>SERG 5908</td>
<td>Research Essay (in the specialization)</td>
</tr>
</tbody>
</table>

Total Credits: 6.0

Requirements - Thesis pathway:
1. 1.0 credit in: CLIM 5000 [1.0] Climate Collaboration
2. 0.0 credit in: CLIM 5800 [0.0] Climate Seminar Series
3. 1.5 credits in: SERG 5002 [0.5] Sustainable Energy Engineering for Policy Students
   SERG 5003 [0.5] Energy Evaluation and Assessment Tools
   SERG 5005 [0.5] Applied Interdisciplinary Project
4. 0.0 credit in: SERG 5800 [0.0] Sustainable Energy Seminar
5. 0.5 credit in: PADM 5121 [0.5] Policy Analysis: The Practical Art of Change
6. 0.5 credit in: PADM 5510 [0.5] Energy Economics
7. 0.5 credit in: PADM 5515 [0.5] Sustainable Energy Policy
   or PADM 5615 [0.5] Politics and Policy of Energy in Canada
8. 2.0 credits in: SERG 5909 [2.0] MA Sustainable Energy Thesis (in the specialization)

Total Credits: 5.0

Notes:
1. Courses must be appropriate to the student's qualifications and selected with the approval of the student's program supervisor.

M.Eng. Sustainable Energy with Collaborative Specialization in Climate Change (5.0 Credits)
M.Sc. Management
with Collaborative Specialization in Climate Change (5.0 credits)

Requirements (5.0 credits):

1. 1.0 credit from:
   - CLIM 5000 [1.0] Climate Collaboration

2. 0.0 credit in:
   - CLIM 5800 [0.0] Climate Seminar Series

3. 1.5 credits in:
   - BUSI 5980 [0.5] Foundations of Management Theory and Research
   - BUSI 5981 [0.5] Statistics for Business Research
   - BUSI 5982 [0.5] Research Methodology in Business

4. 0.5 credit from:
   - BUSI 5983 [0.5] Qualitative Research Design
   - BUSI 5984 [0.5] Quantitative Research Design

5. Completion of the Research Tutorial

6. 2.0 credits in:

Total Credits 5.0

Regulations
See the General Regulations section of this Calendar and the regulations of the participating unit.

Admission
Admission to the collaborative master’s program in Climate Change is available to master’s students who are admitted in one of the participating master’s programs. To apply to one of the participating master’s programs, please visit the Faculty of Graduate and Postdoctoral Affairs Admissions page.

Climate Change (CLIM) Courses

CLIM 5000 [1.0 credit]
Climate Collaboration
A seminar on the climate crisis from an interdisciplinary perspective. Drawing on a range of disciplinary approaches from the humanities, social sciences, public policy, engineering and natural science, students will engage with the many factors bearing on the climate crisis and how to address it.

CLIM 5800 [0.0 credit]
Climate Seminar Series
A series of seminars presented by researchers and practitioners in the area of climate change. To complete this course, a student must attend six seminars.