School for International Training | 1 Kipling Road, PO Box 676 | Brattleboro, VT 05302-0676 USA
Tel 888 272-7881 | Fax 802 258-3296 | studyabroad.sit.edu

Research Project in Arctic Climate Protection

ISPR 3000 (6 credits)

Iceland: Climate Change and The Arctic

This syllabus is representative of a typical semester. Because courses develop and change over time to take advantage of unique learning opportunities, actual course content varies from semester to semester.

Course Description

This course provides a platform for students to spend time looking deep into one topic related to changing global climate. Students can learn from the local community and think through innovative interdisciplinary approaches and technologies that could help stabilize climate in the face of global climate change. Students can design studies or experiments on flora and fauna, human communities, or landscapes to predict future changes and create management and adaptations strategies. There is potential to design and possibly implement renewable energy strategies, behavioral practices, or a creative approach to tracking climate change. Students pursue their own interests within climate change by conducting an original research project with support from program faculty and partners in Iceland. Particular emphasis is placed on real-world relevance, interdisciplinary perspectives on climate change, and connecting with current research. Another aim of the Research Project is for students to build collaborative partnerships with local communities for the enhancement of innovative approaches to climate change. Students can choose to work on a project independently or in a small group.

Learning Outcomes

Upon completion of the course, students will be able to:

- Gather relevant research and data and interact with experts in the field;
- Demonstrate reciprocity in relation to the local community and understand importance of community in project design;
- Conduct a project on climate change in observance of academic and professional ethics;
- Synthesize career and academic interests in a way that demonstrates critical thinking, intellectual flexibility, and a thorough investigation of an issue related to global climate change;
- Demonstrate effective communication of study design and data collected, results, and analysis.

Language of Instruction

This course is taught in English, but students will be exposed to vocabulary related to course content through in-country expert lectures and field visits in a wide range of venues and regional locales.

Instructional Methods

SIT's teaching and learning philosophy is grounded in the experiential learning theory developed by Kolb (1984; 2015) and informed by various scholars, such as Dewey, Piaget, Lewin, among others. Experiential learning theory recognizes that learning is an active process that is not confined to the formal curriculum; "knowledge is created through the transformation of experience" (Kolb, 2015, p. 49). Learning involves both content and process. Learning is holistic and happens through various life experiences upon which students draw to generate new ways of knowing and being. Learning involves a community and is a lifelong endeavor. Learning is transformational. The suggested four step-cycle of a *concrete experience*, *reflective observation*, *abstract conceptualization*, and *active experimentation* embedded in the experiential learning model is not linear and might not always happen in that specific order, as any learning is highly context dependent. These stages of taking part in a shared experience; reflecting on that experience by describing and interpreting it; challenging their own assumptions and beliefs to generate new knowledge; and ultimately applying new knowledge, awareness, skills, and attitudes in a variety of situations and contexts are important for students to engage in to become empowered lifelong learners.

Research Project (RP) in Arctic Climate Protection Guidelines and Requirements

This course will give students an opportunity conduct research on an issue related to climate change. This could be done on ecosystems, biodiversity, exploitation of resources, socio-economic conditions, or any other topic of interest.

As this course is the academic culmination of the learning experience, students are encouraged to start actively thinking about their research project and sharing ideas as early in the program as possible. The academic director (AD) will make frequent check-ins with students to determine the progress of development of ideas and advise students as necessary.

All components of the program, beginning with orientation and including the thematic seminars The Arctic: Changing Ecosystems and Resilience, Climate Modeling and Carbon Management, and Research Methods and Ethics in the Arctic; the homestay; educational excursions; and associated forms of cultural interaction within the host society must be used diligently to refine and deepen thinking and the production of an original research project.

Ongoing discussion with the AD, while primarily concerning the research topic, must also enable students to identify available resources, including an appropriate research advisor if one is desired. Ultimately, the successful completion of the Research Project depends, to no small degree, on the methodological rigor, originality, and sophistication with which the student attends to the research topic.

All Research Project topics must receive advanced approval by the AD. Students are required to submit a formal research proposal as part of the Research Methods and Ethics in the Arctic course, including a plan for implementation to ensure that the project is conducted in an ethical, responsible, and culturally appropriate manner.

The student will spend a minimum of 270 hours on the Research Project. This includes time spent reading, developing contacts, interviewing, collecting data, making field observations, writing, and meeting with whomever is overseeing the research. Students are responsible for scheduling at least 3-5 advising meetings to review their Research Project proposal and planning. Periodic progress conferences will be held with the AD as needed.

Course Requirements

1. A 270-hour study that applies methods of interactive research as agreed upon with the AD;
2. An academic document that includes: abstract, title page, acknowledgments, table of contents, theoretical framework of analysis, research methodology, results, conclusions, notes, and bibliography;
3. Electronic version (disk or e-mail) of your fully formatted RP;
4. A final oral presentation and discussion of the RP; power point is recommended though not required.

Required Readings:
While the majority of the Research Project work should be conducted in the field, readings in preparation for, and throughout the Research Project period, are strongly encouraged and will be based on the specific topic of study.

Potential topic areas for the Research Project in Arctic Climate Protection include:

1. *Thinning of ice sheets*
2. *Melting permafrost*
3. *Ecosystem carbon sequestration*
4. *Renewable energy*
5. *Arctic air pollution*
6. *Climate change impacts on traditional lifestyles*
7. *Communicating climate science*

Ethics Review

All Research Project in Arctic Protection proposals must reflect a thoughtful and culturally appropriate consideration of the effects of the student's inquiry on the participants in the project. To that end, you are required to submit an "Application for Review of Research with Human Subjects," which includes questions about any potential harm that might come from your study; appendices include interview and survey protocols. If the AD believes that you have not sufficiently addressed the concerns of this policy, they may ask you to revise your proposal. Standards for this review are developed in country and reflect local academic practice.

If a student's research has been funded by a US government agency or if they plan to take this research back to their home school or community for further dissemination, then the student must follow more stringent standards, i.e., not only those of the host community, but also those of the Office for Human Resource Protections, with which SIT is registered. Any questions or concerns are forwarded to SIT's Study Abroad Review Board (SARB) for review.

Students working with live organisms must have the ethical standards of the research outlined and satisfied before work can begin. All projects will undergo ethics review.

Research Project in Arctic Protection Mechanics
Getting Started
1. Decide on a topic
This can be easy sometimes, but more often it is difficult. This is where you ask yourself: "What do I want to study? What do I want to learn from the RP? Is there a topic I have always wanted to investigate or learn more about?" Think about the RP as an opportunity for self-fulfillment and growth or as a stepping-stone to further your studies in a particular area. You must be able to define a distinct and do-able project. As such, the next sentence is critical to keep in mind when deciding upon or refining your RP topic. If you cannot clearly and completely state your project in one sentence, then your project cannot be completed within the time frame of the RP period.

2. Define your research questions and research methods (RP draft proposals)
In the process of submitting your RP draft proposals and meeting with either the academic director or the academic advisor, you will have to clearly define your RP topic and research questions. Focusing your interest on a clear and precise question will allow you to begin your RP period with as much clarity as possible and will help you complete your task in the given period of time.

3. Complete a final RP proposal
The RP proposal should provide a clear description of your topic, research questions and intentions, and expectations of the RP you have chosen to pursue. The proposal will help you anticipate what you are going to do and what possible problems may arise. The proposal should help you to clearly define and refine your project ideas and focus so that your resulting work is a discrete project that can be accomplished in the given period of time.

4. Complete, sign, and hand in SIT forms: ethical guidelines, and Institutional Review Board (IRB).
In addition to completing the RP Proposal, students are also required to submit and comply with ethical requirements, agreeing to adhere to our written ethical policy, and to comply with our Institutional Review Board (IRB) process. This will be discussed in detail in the Research Methods and Ethics course. Please note that until items 3 and 4 above (RP Proposal, Site Approval, and Ethical Guidelines Forms) are satisfactorily completed, students will not be allowed to embark on their RP.

RP Written Format—Organization and Presentation
I. Introduction
- a. Explain why this topic merits examination
  - i. Points of interest (i.e., personal observations or observations from the literature).
- b. Describe why this topic is relevant to the program theme.
- c. Define the general parameters of your study, including the scope, depth, and expected outcomes.

d. Define your terms, including the overall theory on which you are basing your work, while situating your work in a scholarly context.

II. Literature Review

a. This segment is usually a general introduction into the literature and theories relevant to your topic.
b. Link your topic to the literature currently available on the subject—cite authors, book titles, theories, or general perceptions that you may or may not agree with.
c. You should start big picture and narrow down to your specific topic. This should flow logically to build the case for your research questions, objectives, and potentially hypotheses.

III. Methods

a. This should be the fun part of the paper, as it allows you the opportunity to describe your approach to try to answer your questions and evaluate your hypotheses.
b. Describe the way you decided to set out on your research (i.e., how you chose the participants that you interviewed or worked with, the locations where you conducted your research, etc.).
c. Describe the methods you used while planning your strategy to obtain the data for your research (i.e., protecting the identity and integrity of your participants, maintaining the integrity of your data, how you planned to avoid any misunderstanding/misinterpretation of your data).
d. Describe the obstacles and problems that arose during the course of your research.
e. If necessary, explain how and why you had to change your original plans and how that affected the quality, depth, and scope of your data.

IV. Findings

a. This is where you get to report what you found during the research process.
b. This section should include results from analysis complete with descriptive statistics and inferential statistics if you used them. It is important to report what you found, but you do not evaluate your findings in this section.

V. Discussion

a. This is where you evaluate your findings with specific reference to your results.
b. You should bring back your research questions and/or hypotheses and evaluate them here.
c. If your findings were what you expected, then you have already built a case for this in the introduction and literature review, and you can discuss what it means for the field going forward. If your findings were different than what you expected, this is the place to develop new hypotheses or questions with backing from the literature.
d. You can discuss limitations of your study and recommendations for future research here.

VI. Conclusions

a. This is where you get to tie up all the loose ends and bring things together. You report the main findings and take-home messages.
b. Describe what the implications of your study are (i.e., why your findings are important).

VII. Works Cited

This should include all resources used. Whatever style you choose to use, be thorough and consistent.

X. Appendices (if applicable)

a. Include a copy of your questionnaire, survey questions, etc. if applicable
b. Include a copy of your written consent form (not the ones signed by participants—those you keep in a safe place), if applicable.
c. Include data tables or field site pictures/maps/information that is too large for the Methods section.

Role of Academic Director and RP Advisor

The AD and the RP advisor advise students on methodology, background reading, and in-country contacts which the students will be encouraged to pursue. The AD evaluates the completed project and assigns the grade.

It is not necessary for RP advisors to serve on all projects. Projects are intended to be independent and can be supervised by the AD.

Assignments and Evaluation

The evaluation of the RP will be completed by the AD. Assessment of the written project and the oral presentation is based on the accuracy of information conveyed, the student's methods and effectiveness of gathering information, organization, assimilation, the clarity of the presentation, the use of hand-out material, the quality of analysis and argumentation, oral expression, clarity of answers to questions and civility of interaction. Special emphasis is put on the student's ability to integrate primary sources and methods of interactive research and to present the findings in a clear, organized and well-synthesized format.

At the end of the RP period, students are expected to present their work to the group and the AD. Timely completion of all RP assignments is expected. Late submissions will be penalized. Assessment of both written work and the oral presentation is based on the accuracy of the information conveyed, the breadth and appropriateness of sources, the depth of analysis and insight, the quality of expression, the level of cultural sensitivity displayed, and adherence to the highest ethical standards. During the process of planning, developing, executing and presenting the RP, students are evaluated on their ability to:

- Work independently and respectfully within Iceland and in cooperation with institutions and advisors;

- Develop a logical and coherent framework for the research project, and clearly justify how the chosen topic lies within the scope of the program and region;
- Critically discuss and evaluate available and relevant theories, papers, and published materials on the proposed project;
- Clearly present the main objectives of the project, further developing them when needed;
- Present and justify a reasonable methodological framework to achieve the proposed objectives;
- Critically describe the data collected, analysis performed, and results;
- Present and discuss problems, findings and conclusions based on the methods used, data and information collected, and/or analysis performed;
- Be able to present all steps of the project clearly and coherently in a written and oral format for an independent audience.

Assignment Descriptions and Grading Criteria

Research Project in Climate Change (70%)
Assessment of the Research Project in Climate Change is done on the basis of SIT's assessment rubric for the Research Project in Climate Change with the grading evaluation and criteria listed below.

Evaluation criteria for RPs include:
Title/Acknowledgements/Abstract

- The title is succinct, interesting, and engaging, and it clearly explains the project
- The acknowledgments are complete and professionally written
- The abstract clearly summarizes the project

Research Question/Objectives/Justification

- The study/research question is relevant, thought-provoking, and original
- The project aims to contribute information on a topic relevant to local community and/or other researchers
- The objectives of the study are clearly presented and appropriate
- The justification of the project is clear and contextualized

Context and Literature Review

- The content is relevant. Important themes and background information is provided
- The paper includes appropriate, high-quality relevant background sources, including several from peer-reviewed journals

Methods

- The explanation of methodology is clear and accurate and supporting materials are included

- Implementation of methods through the research process is thoughtful and handed with care
- The methods are appropriate

Ethics
- Human subject policies and ethical research guidelines are adhered to and thoroughly discussed
- Appropriate consideration is given to informed consent, anonymity, and confidentiality of research participants, in keeping with human subjects protocols and the SARB-approved RP proposal
- The RP is responsive to host community needs, as applicable

Presentation of results/findings
- The findings are complete and are logically and convincingly presented
- The prose discussion of findings is clear, succinct, and logical
- Tables, graphs, photos, and direct quotes are relevant and support the argument

Depth of analysis/Conclusions
- Important implications raised by the findings are included
- The argument is well-structured and different sources of information are well-integrated
- Patterns in the findings (or lack of a pattern) are identified and discussed
- The author gives logical explanations of what findings mean
- The author clearly and specifically related his/her findings to the study/research question and to previous research in the field

Technical aspects/Effort
- The paper is organized into major sections and/or follows the guidelines in accordance with the orientation of the program
- Table of contents, in-text citations, and reference list or bibliography are done correctly and completely
- There are no mistakes in writing, grammar, spelling, and punctuation

Evaluation criteria for oral reports include:
- Organization of presentation, with a view to holding audience interest
- Use of appropriate examples and personal experiences
- Clear explanation of RP strategy and implementation

Research Project in Arctic Climate Protection Presentation (30%)
In addition, a 20-minute oral presentation highlighting research findings and analyses will be given by the individual or group to colleagues, community members, program staff, the AD, the Research Project advisor, and other invited guests. Assessment of the Research Project Oral Presentation is done on the basis of SIT's assessment rubric for the Research Project in Arctic Climate Protection Presentation with the grading evaluation and criteria listed above.

Assessment

Research Project (including paper and any interactive/creative components) - 70%
Research Project Presentation - 30%

Attendance and Participation

Due to the nature of SIT Study Abroad programs, and the importance of student and instructor contributions in each and every class session, attendance at all classes and for all program excursions is required. Criteria for evaluation of student performance include attendance and participation in program activities. Students must fully participate in all program components and courses. Students may not voluntarily opt out of required program activities. Valid reasons for absence – such as illness – must be discussed with the academic director or other designated staff person. Absences impact academic performance, may impact grades, and could result in dismissal from the program.

Late Assignments

SIT Study Abroad programs integrate traditional classroom lectures and discussion with field-based experiences, site visits and debriefs. The curriculum is designed to build on itself and progress to the culmination (projects, ISP, case studies, internship, etc.). It is critical that students complete assignments in a timely manner to continue to benefit from the sequences in assignments, reflections and experiences throughout the program.
Example: Students may request a justified extension for one paper/assignment during the semester. Requests must be made in writing and at least 12 hours before the posted due date and time. If reason for request is accepted, an extension of up to one week may be granted at that time. Any further requests for extensions will not be granted. Students who fail to submit the assignment within the extension period will receive an 'F' for the assignment.

Grading Scale

94-100%	A
90-93%	A-
87-89%	B+
84-86%	B
80-83%	B-
77-79%	C+
74-76%	C
70-73%	C-
67-69%	D+
64-66%	D
below 64	F

Program Expectations

- Show up prepared. Be on time, have your readings completed and points in mind for discussion or clarification. Complying with these elements raises the level of class discussion for everyone.
- Have assignments completed on schedule, printed, and done according to the specified requirements. This will help ensure that your assignments are returned in a timely manner.
- Ask questions in class. Engage the lecturer. These are often very busy professionals who are doing us an honor by coming to speak.
- Comply with academic integrity policies (no plagiarism or cheating, nothing unethical).
- Respect differences of opinion (classmates, lecturers, local constituents we engage with on site visits). You are not expected to agree with everything you hear, but you are expected to listen across difference and consider other perspectives with respect.

Student research is a product of fieldwork and, as such, students have an obligation to assess both the positive and negative consequences of their field study. Ethical fieldwork, as stipulated in the SIT Statement of Ethics, results in products that are shared with local and academic communities; therefore, copies of Research Projects are returned to the sponsoring institutions and the host communities, at the discretion of the institution(s) and/or community involved. World Learning/SIT Study Abroad may archive, copy, or convert the Research Project for non-commercial use, for preservation purposes, and to ensure future accessibility. World Learning/SIT Study Abroad archives the Research Project in the permanent collection at the SIT Study Abroad local country program office and/or at any World Learning office. World Learning/SIT Study Abroad has a non-exclusive, perpetual right to store and make available, including electronic online open access, to the Research Project. Students retain all ownership rights of the Research Project product and retain the right to use all, or part, of the project in future works. Please refer to the Student Handbook or the Access, Use, and Publication of RP form.

SIT Policies and Resources

Please refer to the SIT Study Abroad Handbook and the Policies section of the SIT website for all academic and student affairs policies. Students are accountable for complying with all published policies. Of particular relevance to this course are the policies regarding: academic integrity, Family Educational Rights and Privacy Act (FERPA), research and ethics in field study and internships, late assignments, academic status, academic appeals, diversity and disability, sexual harassment and misconduct, and the student code of conduct.

Please refer to the SIT Study Abroad Handbook and SIT website for information on important resources and services provided through our central administration in Vermont, such as Library resources and research support, Disability Services, Counseling Services, Title IX information, and Equity, Diversity, and Inclusion resources.