

Climate Change *with*



Graduate Credit Syllabus - Fall 2012

NSF Project SPRINTT [Student Polar Research with IPY National (and International) Teacher Training] brings cutting-edge polar science research with an Alaska Native perspective into K-12 classrooms, bridging the science and society divide while inspiring the next generation of polar explorers. Learn how to teach Life, Earth and Physical Science content in a polar context using high-quality, standards-based curricular materials. A user-friendly interface simplifies data where students perform their own authentic polar systems research projects.

Course Objectives

Participants will be able to:

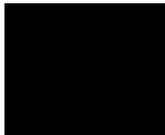
- ✓ Access, interpret, and utilize polar data sets for the classroom.
- ✓ Teach standards-based Life, Earth, and Physical Science content in a polar context.
- ✓ Compare and contrast Indigenous and Western science knowledge on polar science and incorporate each into classroom instruction.
- ✓ Facilitate students' use of authentic polar data in conducting formal investigations and research projects.
- ✓ Adopt inquiry and technology-based teaching and learning strategies and successfully implement them in the classroom.

Instructor:

Georgia Hart
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Live meeting dates:

9/12/12, 9:00-10:00 PM ET
9/19/12, 9:00-10:00 PM ET
9/26/12, 9:00-10:00 PM ET
10/3/12, 9:00-10:00 PM ET
10/10/12, 9:00-10:00 PM ET



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Course Requirements

Coursework is due December 1, 2012. Submission of at least one optional assignment is due by November 10, 2012.

This course meets once per week. The live class meeting dates are indicated on the course calendar and on the schedule below. Between meetings, participants may be asked to work on assignments and respond to questions posed by the instructor in the Online Learning Space Discussion.

Students will be assessed using rubrics where applicable. Major course assignments are outlined in this syllabus, and more detailed information will be provided in class. *Changes may be made to the syllabus to accommodate your learning.*

Note: Please be sure to use reputable sources and to cite them appropriately using APA format; no credit will be given for plagiarized papers or segments.

You must complete the mandatory assignments, and may choose optional assignments to earn the necessary points for credit.

	Assignment	Maximum Points Value
<i>Mandatory 1</i>	<i>Preparation & Participation in live class sessions, including assignments, etc.</i>	<i>20</i>
<i>Mandatory 2</i>	<i>Online Investigation and Sample Research Paper with Reflection</i>	<i>35</i>
Option 1	Participation in SPRINTT Online Student Symposium	25
Option 2	SPRINTT Student Science Research Conference	25
Option 3	Resource Review	10
Option 4	Climate Change Topic Paper	25
Option 5	Comprehensive Curriculum Plan	10

Mandatory 2: Online Investigation and Research Paper (25 points possible) and Reflection (10 points)

Create a SPRINTT student account and choose (or follow your assignment) any of the available investigations. Go through the entire investigation, including writing the research paper. Then create a guest username and password to allow others to view your paper, and post this information to the Discussion Board, along with a ~250 word reflection.

The reflection should include a response to the following questions:

- 1) If your students were to complete this investigation, would they be using data to increase their understanding of polar concepts? Share examples where applicable.
- 2) Please comment on the content and access to data in the investigation.

- 3) Is there value to using both Western and Indigenous knowledge to teach polar concepts in the classroom?

The final step is to comment on the research paper of at least one of your classmates posted to the Discussion Board.

Option 1: Participation in SPRINTT Online Student Symposium (25 points possible)

SPRINTT students will be invited this spring to participate in an online student symposium to share their research from student investigations (Phase III). Dates and more information will be supplied. To earn credit, participate in the symposium webcast with your students and write a reflection of what students gained from the experience.

Option 2: SPRINTT Student Science Research Conference (25 points possible)

Conduct your own science research conference for your students! Organize an opportunity for students to share their research with one another. You may wish to invite parents, administrators, other faculty, and/or other students.

The format may vary, from 'poster sessions' where students stand next to laptops with their research paper, to formal presentations. To earn the credit, share at least 3 artifacts (i.e., pictures, videos, letters from parents/administrators, flyers announcing the event) and write a short reflection describing how you designed the experience for students and what they gained from it.

Option 3: Resource Review (10 points possible)

Identify at least three online resources (may be videos, podcasts, data sets, etc.) that could be used with SPRINTT. Write a brief (1/2 page) review of each of the resources, including how they might best fit with SPRINTT lessons and what you would expect your students to gain.

Option 4: Climate Change Topic Paper (25 points possible)

There are many scientific studies being conducted about climate change and its current and future impacts on the Earth System. You may choose a specific region of the world, a specific organism, a particular research initiative, etc. on which to focus. Choose something that interests you and will increase your content knowledge. Write a 3-6 page research paper. Cite all sources properly for full credit.

Option 5: Comprehensive Curriculum Plan (10 points possible)

Develop a detailed plan for your school year which includes implementation of SPRINTT lessons and resources. Identify the benchmarks/standards met by SPRINTT and the specific connections to curriculum you currently use. Describe places where SPRINTT will replace or enhance lessons or activities you already use with your students. Organize your curriculum plan in a clear format that will serve as a guide as you implement and/or prepare to implement.