

**SIMPSON COLLEGE**  
**2010 MAY TERM OFF-CAMPUS TRAVEL COURSE PROPOSAL**

Date: Jan 15, 2009

**Completed forms should be submitted to the Office of International Education no later than Jan. 15, 2009 for international travel courses and no later February 17, 2009 for domestic travel courses.**

**Name of proposer(s):** Pat Singer  
Ron Warnet

**Department(s):** Biology  
Chemistry

**Please check one of the following:**

**INTERNATIONAL Off-Campus Travel Course**

**DOMESTIC Off-Campus Travel Course**

**I. Course Information**

- A. Course number, if course has been offered previously:
- B. Course title: Renewable Energy Models in Scandinavia  
(*Note: The name of the place of study should appear in the title*)
- C. Transcript Course Title (max. 21 characters): Energy/Scandinavia
- D. Course level (100/200/300): What is the rationale for offering the course at this level?  
NaSc 290
- E. Minimum enrollment: 20  
(*For 1 instructor, must be at least 10 students; for 2 instructors, must be at least 20 students.*)  
If proposed minimum is less than the requirement, provide a rationale for receiving variance.
- F. Maximum enrollment: 30

**II. Course Description**

- A. Course goals and objectives: Given that Simpson May Term Off-Campus Travel Courses aim to provide students with an active learning curriculum that integrates a rigorous academic program with experiential immersion activities, please outline the learning objectives for your course.
  - Learning about Renewable Energy Technology
    - Geothermal
    - Hydrogen
    - Wind
    - Hydroelectric
    - Biomass
  - Learning about the cultural and lifestyle and their relationship to energy consumption and quality of life
    - Lifestyle choices
    - Effect of cultural history on energy use patterns
    - Construction and design
    - Transportation
    - Agriculture

Based on what we learn in Scandinavia, the May Term participants will recommend strategies to the college to reduce its carbon output and rely more heavily on available renewable energy resources.

- B. Rationale for the course: Please explain how the course fits in with your department and/or the college's curriculum.

Given that Simpson is a signatory to the President's Sustainability Initiative it becomes important to expose students to viable models of living well sustainably. Scandinavian countries are world leaders in modeling this lifestyle and will present the participants with alternative views on energy generation and consumption. In this course we hope to discover how they do it, what are the challenges and rewards of such a lifestyle, and what we can learn from the Scandinavians that will inform our own energy usage here at Simpson.

- C. In-country activities: Describe how the planned immersion activities (these could include home stays, service learning opportunities, interviews with locals, Q & A sessions with local guest lecturers/speakers, etc.) will be integrated into educational goals of the course.

Visit schools that offer graduate programs in renewable energy production.

Visit sites where alternative energy is used

Visit producers of alternative energy technology

Do home stay with families in carbon neutral communities

Experience and use low-carbon footprint transportation

Explore and investigate through visits to museums, speakers, and home stays, the relationship between the history and culture of a region and its current energy use patterns

- D. Required course assignments and evaluation

1. Explain specific course requirements and indicate when they would occur (e.g., P=during the on-campus spring semester prep course, O=off-campus, and D=during the de-briefing portion of the off-campus experience; it's possible that some assignments will happen in all of the periods, e.g., Readings could be P-O-D)
  - a. Participation:
    - i. Interact with the site visits and the people we met and stay with
    - ii. Active Listening, being observant, being curious and asking questions
    - iii. Reflecting on what we hear and see in evening reflection activities
  - b. Readings (please specify what these will be)—see attached reading list
    - i. Technical reading from sources like Scientific American to understand renewable energy sources
    - ii. Cultural and historical readings to understand the culture and history of place and practices
  - c. Journal reflections
    - i. Use prompted journal writing for students to think actively about their own lifestyle and energy consumption practices
    - ii. Have student write about how their own cultural practices influences the energy choices
    - iii. Reflect about differing energy consumption choices in which they might engage

iv. Understand and appreciate the challenges and opportunities inherent in energy production

d. Exams NO

e. Papers/Presentations/Field reports, etc.

i. Presentations during prep course and on trip

ii. A reflective paper drawn from the journal writings

f. Other assignments

2. Approximately what percentage will each of the above course requirements contribute toward the final course grade?

40% Participation

30% Journal writing, including what they have learned through the readings, participation and reflection groups

30% Presentation/papers

E. Catalog course description of about 100 words which includes a statement of expected course work (papers, exams, journal writing, presentations, etc.)

In a world where climate change and depletion of oil reserves threatens lifestyle and economies, the nations of northern Europe have been working on alternatives. This course is about what these countries are doing, how they are doing it and how their lifestyle promotes carbon neutrality. Iceland derives 77% of its energy needs from renewable energy, Denmark has communities that are carbon neutral, Norway produces most of its electricity using hydropower and finances renewable energy production in developing countries, and the Netherlands is working hard to mitigate the effects of sea level rise. We will visit with energy producers, schools offering degrees in renewable energy and consumers of that energy. We will participate in alternative energy use by using different modes of transportation such as bicycles in our travels. Our home stays within carbon neutral communities will enable us to see first hand how it all works.

(This course description will shorten once we decide which country (Netherlands or Norway) provides a more productive and cost effective visit. An overnight train gets us to Netherlands. An overnight ship gets us to Norway.)

F. Are there prerequisites for this course? Yes  No   
If yes, please list them and briefly provide a rationale.

### III. Other Information

A. Has this course been offered in a previous May Terms? Yes  No   
If yes, please indicate *when* it was offered and the approximate enrollment.

B. Department(s) in which credit is to be awarded:  
NaSc 290

C. If this course will meet requirements for a departmental major or minor, please explain briefly:

The content of this course is appropriate for Environmental Science and may be used as an elective for that major. That is why it is designated as 290.

D. Proposed dates of the travel course, including dates you anticipate being abroad:  
*(Note: It is highly recommended that the group should depart no earlier than Sat., May 1, 2010, and should return no later than Thurs., May 20, 2010.)*

2 week trip approximately May 4- May 18. We want to return early enough for some post trip reflection

E. Proposed location(s) and how the site location(s) relate to the core objectives of the course:

Iceland: (geothermal, hydrogen, graduate programs) The School for Renewable Energy Science  
<http://www.res.is/>

Denmark: (wind, biomass, homestays in Carbon neutral communities)  
And then either:  
Norway (hydroelectric, biomass, culture of social and global awareness)  
Netherlands (the impact on global warming on sea level rise, water management and utilization)

F. Indicate your level of familiarity with the site(s) visited during the course.  
Singer has been to the parts of Denmark and Norway we will be visiting.  
Neither Singer nor Warnet have any significant experience in Iceland or the Netherlands

G. Will the off-campus component of this course require a significant amount of physical exertion on the part of the course participants? On a scale of 1-5, with 1 being little physical exertion and 5 being a tremendous amount of physical exertion, please rate the anticipated activities related to this course. Do you anticipate that the course activities would pose any significant challenges for someone with physical disabilities?

We plan to do some significant bicycling and walking. We will provide alternatives for those not wishing to bicycle.

**V. Proposed Budget for the Course**  
**(A more precise estimate is not due to the OIE until September 7, 2009)**

First, estimate expenses for instructor(s) and course assistant(s), if any, (in total, not per student)

Air transportation	\$
In-country transportation	\$
Lodging	\$
Meals	\$
Events: tickets, admissions, excursions, etc.	\$
Any necessary entry visas	\$
Misc.	\$
Other (explain):	\$
<b>Total instructor(s) and course assistant expenses</b>	<b>\$</b>

Next, estimate the cost per student, based upon the minimum enrollment number ( ) from page 1 of this document:

Air transportation	\$
In-country transportation	\$
Lodging	\$
Meals	\$
Events: tickets, admissions, excursions, etc.	\$
Honorariums	\$
Tips	\$
Int'l Student I.D. card is now optional, \$25 each if desired	\$
SC Study Abroad Program Fee	\$ 100
Any necessary entry visas	\$
Contingency fund (\$100 recommended)	\$
Other (explain):	\$
<b>Subtotal per student expenses (based upon minimum enrolled #)</b>	<b>\$</b>

Finally, divide the "Total instructor(s) and course assistant expenses" by "the minimum enrollment number ( ) from page 1 of this document" to get a "per student instructor cost." Then add

Subtotal per student expenses (based upon minimum enrolled #)	\$4180
+ per student instructor cost	\$420
<b>= Total per student cost</b>	<b>\$4600*</b>

**\*Based on 20 students. These estimates are from Borton Overseas, a company which specializes in travel in the Scandinavian countries.**

Additional expenses not covered by the program for which students need to budget:  
*For example, passport @ \$100, books, meals, immunizations, trip cancellation insurance, etc.*

Total estimated additional expenses not covered by the course:  
 Passport, Trip insurance No immunizations needed

Instructor signature: \_\_\_\_\_ Date: \_\_\_\_\_

Instructor signature: \_\_\_\_\_ Date: \_\_\_\_\_

Dept Chair approval: \_\_\_\_\_ Date: \_\_\_\_\_  
*(department(s) in which credit is to be awarded)*

Dept Chair approval: \_\_\_\_\_ Date: \_\_\_\_\_  
*(department(s) in which credit is to be awarded)*

Div. Head approval: \_\_\_\_\_ Date: \_\_\_\_\_  
*(division of the instructor)*

Div. Head approval: \_\_\_\_\_ Date: \_\_\_\_\_  
*(division of the instructor)*

## READINGS FOR RENEWABLE ENERGY IN SCANDINAVIA

### **Renewable Energy Science:**

A textbook on renewable energy resources will be important to have, since power generation is a foreign science to most of us. This text covers the types of renewable energy resources that we will see in Scandinavia:

*Renewable Energy* (Paperback)  
by Godfrey Boyle (Editor)

### **Appropriate articles from Scientific American:**

“More Profit With Less Carbon,” by Amory B. Lovins, *Scientific American*, September 2005, pp. 74-83

“Is Ethanol For The Long Haul?” by Matthew L. Wald, *Scientific American*, January 2007, pp. 42-49

“Methane, Plants and Climate Change,” by Frank Keppler and Thomas Rockmann, *Scientific American*, February 2007, pp. 52-57

“The Physical Science Behind Climate Change,” by William Collins, Robert Colman, James Haywood, Martin R. Manning and Philip Mote, *Scientific American*, August 2007, pp. 64-73

“Making Carbon Markets Work,” by David G. Victor and Danny Cullenward, *Scientific American*, December 2007, pp. 70-77

“A Solar Grand Plan,” by Ken Zweibel, James Mason and Vasilis Fthenakis, *Scientific American*, January 2008, pp. 64-73

“The Ethics of Climate Change,” by John Broome, *Scientific American*, June 2008, pp. 96-102

The entire September 2006 issue of *Scientific American* is about alternative energy sources.

### **History and Culture**

One of the questions we want to explore is how can the Scandinavians be so dedicated to developing energy efficient lifestyles. Is that a new cultural trait or have they always had a respect for protecting nature and living frugally. One way to answer that question is to ask who the Norwegians, Danish, and Icelandic people are. A variety of novels can help, but here are the Scandinavian classics:

Danish works (very hard to find):

*History of Danish Dreams* by Peter Hoeg

*Pelle the Conqueror* by Martin Nexø

*The Fall of the King* by Johannes Jensen

Icelandic works (actually abundant, but one author stands out):

*Independent People* By Halldor Laxness

*World Light* by Halldor Laxness  
*Paradise Reclaimed* by Halldor Laxness

Norwegian works (also abundant and hard to limit)

*Growth of the Soil* by Knut Hamsun (+ several other of his books)  
*Out Stealing Horses* by Per Pattersen (+ several other of his books)  
*The Half Brother* by Lars Saabye Christense  
Any book by Tarjei Vesaas

There are many websites (commercial, investment, news, educational) that report the progress that Denmark, Norway, and Iceland are making in becoming increasingly fueled by renewable energy resources. Here are some examples of the diversity of resources available on-line.

<http://www.folkecenter.net/gb/>

<http://www.guardian.co.uk/environment/gallery/2008/sep/21/samso.windfarms?picture=337762443>

<http://www.res.is/>

[http://www.nortrade.com/index.php?cmd=show\\_article&id=290](http://www.nortrade.com/index.php?cmd=show_article&id=290)