Course Syllabus

<table>
<thead>
<tr>
<th>Term:</th>
<th>Fall 2010</th>
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<tbody>
<tr>
<td>Course Title</td>
<td>Cold Climate Building and Retrofitting</td>
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<tr>
<td>Dept. &amp; Num</td>
<td>ENVI F193</td>
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<tr>
<td>Credits:</td>
<td>1</td>
</tr>
<tr>
<td>Prerequisites</td>
<td>None</td>
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<tr>
<td>Dates:</td>
<td>November 18, 19, 20</td>
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<tr>
<td>Days and Times:</td>
<td>Fri: 6:00-9:00pm, Sat: 9:00 – 5:00, Sun: 9:00 - 5:00</td>
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<td>Location:</td>
<td>UAF Bristol Bay Campus</td>
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Instructor: Dr. Paul Cotter  
Position: Adjunct Instructor  
Phone: 980-6374  
Fax:  
Email: paulcotter@acsalaska.net  
Hours Available: By Appt. or evenings after class

Supplies: Notebooks, pencils, calculator recommended

Course Description:  
In this course, students gain practical knowledge of building and/or retrofitting cold climate homes. Topics include basic building science, material selection, building diagnostics, building efficiency strategies, project design, building performance modeling, and systems approaches for new and existing structures.

Instructional Methods:  
Multiple methods will be used to deliver course content. Lectures, group discussion, case studies, video, and site visits will be used to communicate course content. Opportunities to use modern diagnostic equipment will be provided.

Course Goals:  
To develop a more thorough understanding of cold climate building and retrofitting.

Student Learning Outcomes:  
After completing the course, students will be able to:
- Understand general principles of building science, cold climate issues related to building function, and air and moisture dynamics in buildings
- Evaluate the efficacy of new building plans and/or retrofit strategies in meeting high efficiency and durability benchmarks.
- Perform basic diagnostic steps to understand how a building is performing.

Course Policies:  
1. UAF requires students to conduct themselves honestly and responsibly, and to respect the rights of others.  
2. Attendance is mandatory.  
3. Late assignments are not accepted without prior approval of instructor.  
4. The instructor reserves the right to amend this course outline as needed.  
5. No food or drink allowed in the computer lab.

Course Calendar:  
**Friday, October 29**  
6:00pm-7:00pm  Introduction to cold climate buildings – new and existing  
7:00pm-7:45pm  Cure for the common cold climate building  
7:45pm-8:00pm  break
8:00pm-8:30pm  IECC, BEES, and YOU
8:30pm-9:00pm  Fundamental Physics of buildings – Cold climate implications

Saturday, October 30
9:00am-10:45am  Fundamental Physics of buildings – Moisture and pressure dynamics in cold climates
10:45am-11:00am  Break
11:00am-1:00pm  Thermal and Pressure Boundaries – Problems and solutions for cold climates (New and Existing)
1:00pm-2:00pm  Lunch break
2:00pm-3:30pm  Thermal and Pressure Boundaries – Problems and solutions for cold climates (New and Existing)
3:30pm-3:45pm  Break
3:45pm-5:00pm  Air Leakage – Where it happens and how to find it?

Sunday, October 31
9:00am-10:45am  Ventilation – How much is too much/how little is not enough?
10:45am-11:00am  Break
11:00am-1:00pm  Heating strategies
1:00pm-2:00pm  Lunch break
2:00pm-3:00pm  Indoor Air Quality and Combustion Safety
3:00pm-4:00pm  Field study of local home
4:00pm-4:15pm  Break
4:15pm-5:00pm  Final exam

Final Exam:
A written final exam will be administered. It will contain both closed and open book portions.

Evaluation:
Course grades will be determined from section quizzes, the final exam, case study performance, and their home evaluation. Percentages refer to percentage of final grade.

Section quizzes: 40%
Case study: 10%
Home evaluation: 30%
Final exam: 20%

Grading Policy:
Pass/Fail (Pass >= 70%; Fail < 70%)

Support and Disability Services:
University of Alaska Fairbanks
Bristol Bay Campus – Student Services
PO Box 1070
Dillingham, Alaska 99576
907-842-5109
800-478-5109
Fax: 907-842-5692
Students can also go to the UAF website [http://www.uaf.edu](http://www.uaf.edu) or to the College of Rural and Community Development website [http://www.uaf.edu/rural/](http://www.uaf.edu/rural/) or to Bristol Bay Campus website [http://www.uaf.edu/bbc/index.html](http://www.uaf.edu/bbc/index.html).

UAF Disability Services for Distance Students
UAF has a Disability Services office that operates in conjunction with the College of Rural and Community Development (CRCD) campuses and UAF’s Center for Distance Education (CDE). Disability Services, a part of UAF’s Center for Health and Counseling, provides academic accommodations to enrolled students who are identified as being eligible for these services. If you believe you are eligible, please visit [http://www.uaf.edu/chc/disability.html](http://www.uaf.edu/chc/disability.html) on the web or contact a student affairs staff person at your nearest local campus. You can also contact Disability Services on the Fairbanks Campus at (907) 474-7043, fydso@uaf.edu