DEPARTMENT OF ARCHITECTURE
School of Architecture and Allied Arts, University of Oregon
ARCH 410 / 510 High Performance Envelopes
COURSE DESCRIPTION

COURSE: ARCH 410 / 510 – Spring 2010
CRN: 410 / 510: ?????
4 credit hours; advanced elective in building technology for architecture students

INSTRUCTOR: Sean K. Scott, Adjunct Professor, AIA, LEED AP, BEC, COTE

LECTURES: Tuesdays: 6:00 – 7:50PM, UO PDX White Stag Building Room 142/144.

WORKSHOPS: Thursdays: 6:00 – 7:50PM, UO PDX White Stag Building Room 142/144.

Living Building Challenge 2.0 and associated User’s Guide

PREREQUISITES: Building Enclosure: Theory and Practice

GRADING: Graded, P/NP is not allowed.

BACKGROUND
Building on the prerequisite course of "Building Enclosure: Theory and Practice", this course offers a hands-on practice of applying the lectures related to high performance, envelopes that are in step with the pursuit of sustainability. This is not a more important topic related to the built environment today than the durability and performance of buildings (both existing and new). The largest factor in this topic is the envelope. This is mostly a technical course, however it is interlaced with design discussions.

OBJECTIVES
1. Define, and discuss factors of High Performance Envelopes (HPE).
2. Develop a deeper understanding of process related tools for HPE.
3. Discuss design overlays such as existing buildings, historic status, and typologies related to HPE.
4. Survey larger concepts / tools available to create HPE.
5. Review metrics and their impact on HPE, and how to realize the potential those metrics, such as LEED and Living Building Challenge.
6. Review alternative HPE systems.
7. Create a concise reference for the student’s career (HPE focused or not).

INSTRUCTIONAL OBJECTIVES
The following instructional objectives follow the "1998 Guide to Student Performance Criteria" (37 criteria based upon an integrated approach to architectural education) distributed by the National Architectural Accrediting Board. The objectives of this course are to: understand the advanced tools and factors that form a High Performance Envelope, strongly emphasizing the following Student Performance Criteria: (3) Research Skills; (4) Critical Thinking Skills; (6) Collaborative Skills; (7) Human Behavior; (9) Use of Precedents; (10) Western Traditions; (12) National and Regional Traditions; (13) Environmental Conservation; (15) Site Conditions; (17) Structural Systems; (18) Environmental Systems; (19) Life-Safety Systems; (20) Building Envelope Systems; (22) Building Systems Integration; (25) Building Materials and Assemblies; (26) Building Economics and Cost Control; (27) Detailed Design Development; (28) Technical Documentation; (29) Comprehensive Design; (30) Program Preparation; (35) Architects’ Leadership Roles; (36) The Context of Architecture; (37) Ethics and Professional Judgment.

LEARNING VEHICLES
Class size will be limited to gain more 1 on 1 discussions. Tuesday evening classes each week will introduce a new set of tools via a lecture format. The following Thursday evening classes will apply those tools within a workshop setting. Participation in the workshop is vital to the grading of the homework. Workshops are an “in-process” help session, designed for 1 on 1 and/or very small group help with the weekly assignment. Drawing, research narratives, site visits, LEED coordination, and Living Building Challenge coordination will also occur.

COURSE ACTIVITIES
Lectures will include:
- Discourse related to connections between building performance / durability and the process, influences, and tools available.

Workshops will include:
- Exercises (within the workshop and take home) that elaborate on the tools from the lecture.
- Grading is partially based on participation within the workshop.
- Drawing, researching, narrative papers, and other exercises will be employed and submitted for grading.

EVALUATION
Grading is based on the following breakdown.

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
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<tbody>
<tr>
<td>8 weeks of homework</td>
<td>10 x 8 weeks = 80</td>
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<tr>
<td>Final Exam</td>
<td>20</td>
</tr>
<tr>
<td>Final Narrative</td>
<td>30</td>
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<tr>
<td><strong>TOTAL POSSIBLE</strong></td>
<td>130</td>
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FINAL EXAM: Tuesday, 7:00pm, June 8, 2010