DEPARTMENT OF ARCHITECTURE  
School of Architecture and Allied Arts  
University of Oregon, Portland

ARCH 4/510  
Assessing the Performance of Sustainable Buildings  
T/Th 10:00 – 12:00  
4 credit hours

Instructor  
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Adjunct Instructor  
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Course Description
There are many different methodologies, metrics, and rating systems that exist for describing and analyzing building performance. The most prominent among these is the LEED rating system, but there are other validated and emerging methods by which to qualify and quantify a building’s environmental impact. An understanding of the variety of assessment methodologies available to building professionals is critical not only to the practical application of green design strategies, but for understanding the interaction and effectiveness of the strategies themselves.

In this course, we will survey prominent rating systems and standards that use prescriptive or performance methods to encourage greener building design, such as LEED, Passivehaus, IGCC, and the Living Building Challenge. We will explore the standards themselves and what they accomplish, and we will use field trips and case studies to supplement this understanding. Furthermore, we will consider the energy consumption of buildings as a primary metric of environmental impact and examine advanced methodologies for determining energy use during building design, construction and occupancy.

Course Format
Tuesday classes will consist of in-class learning, with lectures, guest speakers, and demonstrations as necessary to the week’s topic. Thursdays will primarily be field trip class days, where students will be asked to meet at a pre-determined location that exemplifies that week’s topic. Analysis exercises will accompany each topic, giving the students the chance to evaluate buildings during field trips. A term project, due at the end of the course, will be assigned in which students will evaluate and assess a building or house of their choosing.

Course Objectives
1. Provide the students with a foundation of critical understanding around the concept and implementation of the rating and assessing buildings.
2. Expand the students’ skill sets to include the use of new tools and metrics, in order to inform and enhance their design process.
3. Explore the reality of energy consumption in buildings through a comparison of energy metrics and an introduction to energy modeling techniques.