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COURSE DESCRIPTION: The topic of this course is the intersection of the built environment and human needs: water, air, food, waste, transportation, healthcare and education. We will also explore current and potential energy systems with emphasis on meeting regional and global energy needs in the 21st century in a sustainable manner. The assessment of alternatives in building and energy technologies including fossil (oil, gas, synthetic), solar, biomass, wind, hydro, nuclear, and geothermal including storage, transmission, and conservation issues.

COURSE OBJECTIVES: At the end of this course, you should:
- Understand the strategic and operational impact of the built environment on communities, organizations and individuals.
- Be able to analyze basic building ecosystems and the impact of energy choices and policies
- Assess community layout and the impact of design, technologies, alternatives and consequences.
- Understand energy issues in the context of environmental and social contexts

Common terms we will address include:
- LEED: Leadership in Energy and Environmental Design
- Energy intensity and conservation
- Facility Audits
- Energy Star Ratings / Energy Use Indices
- Life-Cycle Cost Modeling
- Operations & Maintenance of facilities
- Alternative and Renewable Energy Solutions

Other literature from appropriate academic and trade journals.

COURSE GRADING:
Grades will be assessed using a variety of methods. As with any course, your level of participation both in class and online is critical to your successful understanding and completion of the course. You will conduct 4 exercises in awareness of the built environment. Each requires a paper documenting the findings. The papers should have appropriate literature support in addition to your “lab” findings. The exam is designed to assess student mastery of the reading material and topical discussions.

Scoring is as follows:

<table>
<thead>
<tr>
<th>Component</th>
<th>Points</th>
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<tbody>
<tr>
<td>Participation/Discussion</td>
<td>200</td>
</tr>
<tr>
<td>Exercises</td>
<td>200</td>
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<tr>
<td>Exam</td>
<td>100</td>
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<tr>
<td>Total</td>
<td><strong>500 Points</strong></td>
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**SCHEDULE:**

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Readings</th>
<th>Activities</th>
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<tbody>
<tr>
<td>Oct 29</td>
<td>Introduction Philosophy and Evolution of Sustainable Design</td>
<td>Ch. 1, 2</td>
<td></td>
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<tr>
<td>Nov. 5</td>
<td>Respect for Natural Systems Respect for People Respect for Place-Ecosystems</td>
<td>Ch. 3, 4, 5</td>
<td>1st Exercise Paper due Guest Speaker</td>
</tr>
<tr>
<td>Nov. 12</td>
<td>Respect for the Life Cycle Respect for Energy Respect for Holistic Process</td>
<td>Ch. 6, 7, 8, 14</td>
<td>2nd Exercise Paper due Guest Speaker</td>
</tr>
<tr>
<td>Nov. 19</td>
<td>Technology of Sustainable Design Components of Sustainable Design</td>
<td>Ch. 9, 10</td>
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<td>Nov. 26</td>
<td>Productivity and Well Being Greening the Organization</td>
<td>Ch. 11, 12</td>
<td>3rd Exercise Paper due Guest Speaker</td>
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<td>Dec. 3</td>
<td>Green Economics Aesthetics</td>
<td>Ch. 13, 15</td>
<td>4th Exercise Paper due</td>
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<tr>
<td>Dec. 10</td>
<td>Future of Architecture</td>
<td>Ch. 16</td>
<td>EXAM</td>
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**EXERCISES (complete 4 of the following)**

1) Illustrate how building practices are influenced and to evaluate the effectiveness and sustainability of design innovations and energy incentives.

   **Assignment:** Tour a local neighborhood and assess the community’s urban revitalization plan, building codes and redevelopment regulations.

2) Assess the walkability of residential and campus settings as part of physical activity environment at home or school.

   **Assignment:** Use existing or newly developed instruments to collect field data in two or more settings, in either a residential or campus environment; gain data-collection experience and reflect on daily settings and their walkability, including sidewalks, barriers, traffic, destinations, and the presence of others.

3) Become familiar with community organizations and their process to improve the welfare of communities.

   **Assignment:** Catalogue five different agencies and organizations in your community that make a difference and are not for profit.

4) Increase awareness of how choices, constraints, and design affect
movement patterns and physical activity.

**Assignment:** Keep a week-long diary of your travel patterns, with critique of how built environment influenced travel.

5) Observe opportunities and barriers for mass transit.

**Assignment:** Follow a round-trip circuit of on bus and on foot while monitoring waiting times, ridership numbers, wayfinding, and relative safety.

**RESOURCES**

**Active Living Research.** Contains information about research, grants, tools and resources for researchers, practitioners and community advocates whose work supports the growing evidence base on active living.

**American Planning Association’s Healthy Community Interest Group**

**Center for Design and Health Wiki** offers an integration of design and health research ranging from the regional to the building scales. It is your source for a cross cutting perspective on actual causes of death as they relate to the built environment with a focus on aesthetic and urban form dimensions impacting health outcomes.

**Choosing Visualization for Transportation.** The Federal Transit Administration’s Public Transportation Participation Pilot (PTPP) program funded this site as a “one-stop resources for learning about and selecting visualization tools for effective public participation.”

**Community Toolbox.** This website provides free information and training on how to build healthy communities.

**County Health Rankings.** This website provides 2010 County Health Rankings with a variety of data points including health outcomes (mortality and morbidity) and health factors (health behaviors, clinical care, social and economic factors, and the physical environment).

**Food Desert Locator**

**Educational Consulting Resources: Dr. L. Dee Fink**

**Gapminder** This website allows you to select and compare health indicators
across different locations, demographics and time periods. Another excellent tool for data visualization, data sets are illustrated as maps, graphs, and animations.

**Health and Safety Information on Household Products.** Provides information on cleaning products that have low health-risk scores as compiled by the National Institutes of Health, ranking products from 0 (minimal health risk) through 4 (severe for health risk).

**Information is Beautiful.** David McCandless transforms data sets, many related to health, environment and government, into interesting and creative graphics. Our favorites include “Snake Oil? Scientific Evidence for Popular Dietary Supplements” and “When Sea Levels Attack!”.

**InformeDesign.** This website contains links to design research literature, organized by type of space, design topic and occupants/user types.

**Let’s Move: The White House Task Force on Childhood Obesity.**

**NYC Dept. of Health and Mental Hygiene Vital Statistics.** Lists statistics for the city of New York as well as links to press releases and presentations given by the department.

**Open Space.** This site contains links to publications, literature reviews and research projects that relate to this organization’s goal of promoting inclusive access to outdoor environments.

**Planning Complete Streets for the Aging of America.** A report by the AARP on ways that our transportation systems will need to respond the aging of the American population.

**Research Design Connections.** An online publication whose articles deal with “person-centered design” and environmental psychology.

**The Community Guide.** A resource from the CDC that helps identify effective tools for improving different areas of public health, through policy, research, services, education and funding.


**The Prevention Institute** has lots of great resources including a downloadable pdf titled **The Built Environment and Health: 11 Profiles of**

The University of the West of England (UWE) Institute for Sustainability, Health and Environment. This site features links to case studies, news and current research in public health, environmental science and planning, with an emphasis on the integration of policy and delivery at national and international levels.

Therapeutic Landscapes Network. A wide-ranging source of information on therapeutic landscapes.

US Green Building Council. This site is the standard for building construction in the US. Multiple tools, articles and references to assist in the design and building process.

Walk Score. This website ranks the walkability of neighborhoods in the largest 40 U.S. cities.

WHO Healthy Cities Network. Three core themes: caring and supportive environments, healthy living and healthy urban design guide this WHO initiative which creates a network among European cities already committed to healthy cities and offers resources and tools to cities who seek to join.