

# **ARCH 3331/5395 Architecture and Environment, Spring 2013**

## **Course Syllabus**

**Instructor:** Edward Nelson, AIA, LEED AP

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**Office Hours:** Before or after scheduled class meetings.

**Section Information:** ARCH 3331 - Architecture and Environment

**Time and Place of Class Meetings:** Mondays & Wednesdays  
5:30PM - 6:50PM, Room 401

**Description of Course Content:** (3-0) An overview of sustainable design integrated with natural resource conservation. Prerequisite: ARCH 2552 and Declared in Architecture or consent of department.

**Student Learning Outcomes:** Develop an understanding of sustainable strategies that can most influence architectural form, space and order.

**Requirements:** Regular attendance for lectures.

**Required Textbooks and Other Course Materials:** Reading materials will be provided by instructor.

**Descriptions of major assignments and examinations with due dates:**  
Course work includes, 3 regular tests, design project and a final exam.

**Grading Policy:** 3 Tests, design project and final exam, all counting equally.

**Attendance Policy:** Regular attendance is required. For each 3 absences deduct one letter grade from final grade to be recorded for course.

**Drop Policy:** Students may drop or swap (adding and dropping a class concurrently) classes through self-service in MyMav from the beginning of the registration period through the late registration period. After the late registration period, students must see their academic advisor to drop a class or withdraw. Undeclared students must see an advisor in the University Advising Center. Drops can continue through a point two-thirds of the way through the term or session. It is the student's responsibility to officially withdraw if they do not plan to attend after registering. **Students will not be automatically dropped for non-attendance.** Repayment of certain types of financial aid administered through

the University may be required as the result of dropping classes or withdrawing. Contact the Financial Aid Office for more information.

**Americans with Disabilities Act:** The University of Texas at Arlington is on record as being committed to both the spirit and letter of all federal equal opportunity legislation, including the *Americans with Disabilities Act (ADA)*. All instructors at UT Arlington are required by law to provide "reasonable accommodations" to students with disabilities, so as not to discriminate on the basis of that disability. Any student requiring an accommodation for this course must provide the instructor with official documentation in the form of a letter certified by the staff in the Office for Students with Disabilities, University Hall 102. Only those students who have officially documented a need for an accommodation will have their request honored. Information regarding diagnostic criteria and policies for obtaining disability-based academic accommodations can be found at [www.uta.edu/disability](http://www.uta.edu/disability) or by calling the Office for Students with Disabilities at (817) 272-3364.

**Academic Integrity:** All students enrolled in this course are expected to adhere to the UT Arlington Honor Code:

*I pledge, on my honor, to uphold UT Arlington's tradition of academic integrity, a tradition that values hard work and honest effort in the pursuit of academic excellence.*

*I promise that I will submit only work that I personally create or contribute to group collaborations, and I will appropriately reference any work from other sources. I will follow the highest standards of integrity and uphold the spirit of the Honor Code.*

Instructors may employ the Honor Code as they see fit in their courses, including (but not limited to) having students acknowledge the honor code as part of an examination or requiring students to incorporate the honor code into any work submitted. Per UT System *Regents' Rule* 50101, §2.2, suspected violations of university's standards for academic integrity (including the Honor Code) will be referred to the Office of Student Conduct. Violators will be disciplined in accordance with University policy, which may result in the student's suspension or expulsion from the University.

**Student Support Services:** UT Arlington provides a variety of resources and programs designed to help students develop academic skills, deal with personal situations, and better understand concepts and information related to their courses. Resources include tutoring, major-based learning centers, developmental education, advising and mentoring, personal counseling, and federally funded programs. For individualized referrals, students may visit the reception desk at University College (Ransom Hall), call the Maverick Resource Hotline at 817-272-6107, send a message to [resources@uta.edu](mailto:resources@uta.edu), or view the information at [www.uta.edu/resources](http://www.uta.edu/resources).

**Electronic Communication Policy:** The University of Texas at Arlington has adopted the University “MavMail” address as the sole official means of communication with students. MavMail is used to remind students of important deadlines, advertise events and activities, and permit the University to conduct official transactions exclusively by electronic means. For example, important information concerning registration, financial aid, payment of bills, and graduation are now sent to students through the MavMail system. All students are assigned a MavMail account. ***Students are responsible for checking their MavMail regularly.*** Information about activating and using MavMail is available at <http://www.uta.edu/oit/email/>. There is no additional charge to students for using this account, and it remains active even after they graduate from UT Arlington.

**Student Feedback Survey:** At the end of each term, students enrolled in classes categorized as lecture, seminar, or laboratory shall be directed to complete a Student Feedback Survey (SFS). Instructions on how to access the SFS for this course will be sent directly to each student through MavMail approximately 10 days before the end of the term. Each student’s feedback enters the SFS database anonymously and is aggregated with that of other students enrolled in the course. UT Arlington’s effort to solicit, gather, tabulate, and publish student feedback is required by state law; students are strongly urged to participate. For more information, visit <http://www.uta.edu/sfs>.

**Final Review Week:** A period of five class days prior to the first day of final examinations in the long sessions shall be designated as Final Review Week. The purpose of this week is to allow students sufficient time to prepare for final examinations. During this week, there shall be no scheduled activities such as required field trips or performances; and no instructor shall assign any themes, research problems or exercises of similar scope that have a completion date during or following this week *unless specified in the class syllabus*. During Final Review Week, an instructor shall not give any examinations constituting 10% or more of the final grade, except makeup tests and laboratory examinations. In addition, no instructor shall give any portion of the final examination during Final Review Week. During this week, classes are held as scheduled. In addition, instructors are not required to limit content to topics that have been previously covered; they may introduce new concepts as appropriate.

## **Bibliography:**

### **Sustainable Sites:**

Scott, Allen J. & Soja, Edward W., *The City; Los Angeles and Urban Theory at the End of the Twentieth Century*, University of California Press, Los Angeles, 1996.

Tachieva, Galina., *Sprawl Repair Manual*, Island Press, Washington D.C., 2010.

Peter Calthorpe, *The Regional City: Planning for the End of Sprawl*, Island Press, Washington D.C., 2005

Cynthia Girling and Ronald Kellett, *Skinny Streets & Green Neighborhoods, Design for Environment and Community*, Island Press, Washington D.C., 2005.

Daniel Parolek, Karen Parolek and Paul Crawford, *Form Based Codes, A Guide for Planners, Urban Designers, Municipalities and Developers*, John Wiley & Sons, Inc., Hoboken, 2008.

Jacobs, Jane, *The Death and Life of Great American Cities*, Random House, New York, 1961.

Flint, Anthony, *This Land: The Battle Over Sprawl and the Future of America*, Johns Hopkins University Press, Baltimore, 2006.

Gillham, Oliver, *The Limitless City: A Primer on the Urban Sprawl Debate*, Island Press, Washington D.C., 2002.

Porter, Douglass, *Making Smart Growth Work*, Urban Land Institute, Washington, D.C., 2002

### **The Building Envelope:**

Harris, Samuel Y. *Building Pathology: Deterioration, Diagnostics and Intervention*, John Wiley & Sons, New York, 2001.

Elliott, Cecil D., *Technics and Architecture: The Development of Materials and Systems for Buildings*, MIT Press, Cambridge, 1993.

Powell, Kenneth, *30 St. Mary Axe: A Tower for London*, Merrell Publishers, London, 2006.

Bucci, Frederico, *Albert Kahn: Architect of Ford*, Princeton Architectural Press, New York, 1993.

Gissen, David, *Big & Green: Toward Sustainable Architecture in the 21<sup>st</sup> Century*, Princeton Architectural Press, New York, 2003.

### **Building Re-Use:**

Foster, Norman, *Rebuilding the Reichstag*, The Overlook Press, Woodstock, 2000.

Holleran, Michael, *Boston's Changeful Times: Origins of Preservation and Planning in America*, Johns Hopkins University Press, Baltimore, 1998.

Tung, Anthony M., *Preserving the World's Great Cities: The Destruction and Renewal of the Historic Metropolis*, Clarkson-Potter Publishers, New York, 2001.

Hudson, James R., *The Unanticipated City: Loft Conversions in Lower Manhattan*, The University of Massachusetts Press, Amherst, 1987.

Hoffman, Alexander von, *House by House, Block by Block: The Rebirth of America's Urban Neighborhoods*, Oxford University Press, Oxford, 2003.

Ford, Larry R., *America's New Downtowns: Revitalization or Reinvention*, Johns Hopkins University Press, Baltimore, 2003.

# ARCH 3331/5395 Architecture and Environment, Spring 2013

## WEEK 1 Monday January 14

### A. Introduction: **No.1; Introduction & Overview of LEED**

- Reading Assignment: *Are You Ready for More?* Sharon Begley, Newsweek Magazine.
- Reading assignment: *Green Manhattan; Everywhere Should be More Like New York*, David Owen, New Yorker Magazine.
- Reading assignment: *Emerald City; Shattering the Myths of Sustainability*, Robert Ivy, FAIA, Architectural Record Magazine.

## Wednesday January 16

### A. Introduction to Design Project

- Review project program.
- Review CAD drafting requirements for project.
- Begin developing unit plans
- Reading Assignment: The Regional City, Peter Calthorpe, Forward & Introduction.

## WEEK 2 Monday January 21

### A. Dr. Martin Luther King Day Holiday

- No Class Scheduled

## Wednesday January 23

### A. Design Project:

- Develop diagrammatic studies and concept.
- Discuss sustainable site planning strategies, review examples of site planning for similar projects.
- Review Arlington Zoning Ordinance for project site.

## WEEK 3 Monday January 28

### A. Sustainable Sites: **No.2; Transportation & Planning**

- Reading assignment: The Death and Life of Great American Cities, Jane Jacobs, Chapter 1: Introduction

## Wednesday January 30

### A. Design Project

- Begin developing site plan and building plans.
- Review project site, setbacks, parking, storm drainage and zoning ordinance required design elements.

**WEEK 4      Monday February 4**

A. Sustainable Sites: **No. 3: Decentralization & Brownfield Sites  
Density & Community Connectivity**

- Reading assignment: The Death and Life of Great American Cities, Jane Jacobs, Chapter 2: The Uses of the Sidewalk: Safety
- Reading assignment: The Death and Life of Great American Cities, Jane Jacobs, Chapter 3: The Uses of the Sidewalk: Contact.
- Reading assignment: *Heroes of the Environment*, Time Magazine.

**Wednesday February 6**

A. Design Project

- Continue developing unit plans.
- Review similar built projects as examples.
- Establish building setbacks, public walks and on-street parking.
- Review Folsom-Dore LEED Checklist

**WEEK 5      Monday February 11**

A. Sustainable Sites: **No. 4; Density & Community Connectivity**

**Wednesday February 13**

A. Design Project

- Continue developing site plan and building plans.
- Continue developing unit plans.

**WEEK 6      Monday February 18**

A. Sustainable Sites: **Test 1**

- **Test covering Sustainable Sites, lectures & readings**

**Wednesday February 20**

A. Design Project

- Continue developing site plan and building plans.
- Continue developing unit plans.

**WEEK 7      Monday February 25**

A. Building Envelope: **No. 5; Heat Island Effect: The Roof**

- Reading assignment: *Energy Savings Potentials and Air Quality Benefits of Urban Heat Island Mitigation*, Hashem Akbari, Lawrence Berkeley National Laboratory

### **Wednesday February 27**

#### **A. Design Project**

- Review literature about PV panels and mounting
- Discuss building structure and begin blocking out building elevations
- Review Folsom Dore LEED checklist.

### **WEEK 8      Monday March 4**

#### **A. Building Envelope: *No. 6; Wall Systems & Glazing***

- Reading assignment: Big & Green: Toward Sustainable Architecture in the 21<sup>st</sup> Century Edited by David Gissen, Essay by Michael Braungart *Beyond the Limits of Sustainable Architecture: A New Material Sensibility for the 21<sup>st</sup> Century*.
- Reading Assignment: *Mold: A Problem of Biblical Proportions?* Richard E. Schellhammer.

### **Wednesday March 6**

#### **A. Design Project**

- Continue developing plans, sections and elevations incorporating sustainable strategies discussed in class.
- Discuss solar water heating system.

### **WEEK 9      Monday March 11**

#### **A. Spring Break – No Class**

### **Wednesday March 13**

#### **A. Spring Break – No Class**

### **WEEK 10    Monday March 18**

#### **A. Building Envelope: *No. 7; Double Skin Curtain Wall Systems, Daylighting & Sun Screening Systems***

- Reading assignment: *Seeing Double: Double Skin Façade Designs on the Rise in North America*, by Jeffery Vaglio and Mic Patterson in *Architects Guide to Glass & Metal*

### **Wednesday March 20**

#### **B. Design Project**

### **WEEK 11    Monday March 25**

#### **A. Building Envelope: *Test 2***

- **Test covering Building Envelope lectures and readings**

**Wednesday March 27**

C. Design Project

**WEEK 12 Monday April 1**

A. Building Re-Use: **No. 8; Urban Revitalization**

- Reading assignment: The Limitless City, Oliver Gillham, Chapter 12: Changing Development Patterns

**Wednesday April 3**

A. Design Project

**WEEK 13 Monday April 8**

A. Building Re-Use: **No. 9; The Adaptive Re-Use of Existing Buildings**

- Reading assignment: Preserving the World's Great Cities, Anthony M. Tung, Chapter 1: The Century of Destruction.

**Wednesday April 10**

A. Design Project

**WEEK 14 Monday April 15**

A. Building Re-Use: **No. 10; Historic Preservation & Federal Tax Credit Program**

- Reading assignment: The Unanticipated City: Loft Conversions in Lower Manhattan, James R. Hudson, Chapter 2: Invasion-Succession in SoHo.

**Wednesday April 17**

A. Present completed design projects to guest jurors.

**WEEK 15 Monday April 22**

A. Guest Lecturer: Don Gatzke Historic Preservation in New Orleans

**Wednesday April 24**

A. Building Re-Use: **Test 3**

- **Test Covering Building Re-Use Lectures and Readings**

**WEEK 16 Monday April 29 DEAD WEEK**

B. Review for Final Exam

**Wednesday May 1**

A. Guest Lecturer: Don Del Cid

**WEEK 17**    **Monday May 6**  
Final Exam