

ARCH 3331/5395 Architecture and Environment, Fall 2013

Course Syllabus

Instructor: Edward Nelson, AIA, LEED AP

Office Number: 214-361-8485

Email Address: nelsone@uta.edu or ednelson@ERN-architects.com

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.

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.

Expectations for Out-of-Class Study: Beyond the time required to attend each class meeting, students enrolled in this course should expect to spend at least an additional 9 hours per week of their own time in course-related activities, including reading required materials, completing assignments, preparing for exams, etc.

Make-up Exams: To be able to take a missed exam a letter from the doctor or county coroner is required. A missed exam grade is 0. Please note the make-up exam is not the same exam as that issued on the scheduled exam date.

Grade Grievances: Any appeal of a grade in this course must follow the procedures and deadlines for grade-related grievances as published in the current undergraduate / graduate catalog.

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 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, or view the information at www.uta.edu/resources.

Electronic Communication Policy: UT Arlington has adopted MavMail as its official means to communicate with students about important deadlines and events, as well as to transact university-related business regarding financial aid, tuition, grades, graduation, etc. All students are assigned a MavMail account and are responsible for checking the inbox regularly. There is no additional charge to students for using this account, which remains active even after graduation. Information about activating and using MavMail is available at <http://www.uta.edu/oit/cs/email/mavmail.php>

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.

Emergency Exit Procedures: Should we experience an emergency event that requires us to vacate the building, students should exit the room and move toward the nearest exit, which is located at the north end of the architecture building, (exit stair). When exiting the building during an emergency, one should never take an elevator but should use the stairwells. Faculty members and instructional staff will assist students in selecting the safest route for evacuation and will make arrangements to assist handicapped individuals.

Bibliography:

Sustainable Sites:

Scott, Allen J. & Soja, Edward W., *The City; Los Angeles and Urban Theory at 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.

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

Building Re-Use:

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

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.

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WEEK 1 Monday August 26

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

- Reading Assignment: *Are You Ready for More?* Sharon Begley, Newsweek Magazine.
- Reading assignment: This Land, Anthony Flint, Developing America, Grids and Greenfields.

Wednesday August 28

A. Introduction to Design Project

- Review project program.
- Review CAD drafting requirements for project.
- Begin developing unit plans

WEEK 2 Monday September 2

A. Labor Day Holiday

- No Class Scheduled

Wednesday September 4

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 September 9

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

- Reading assignment: *Green Manhattan; Everywhere Should be More Like New York*, David Owen, New Yorker Magazine.

Wednesday September 11

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 September 16

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

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

Wednesday September 18

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 September 23

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

Wednesday September 25

A. Design Project

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

WEEK 6 Monday September 30

A. Sustainable Sites: **Test 1**

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

Wednesday October 2

A. Design Project

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

WEEK 7 Monday October 7

- 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 October 9

- 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 October 14

- A. Building Envelope: **No. 6; Wall Systems & Glazing**
- Reading assignment: Big & Green: Toward Sustainable Architecture in the 21st Century Edited by David Gissen, Essay by Michael Braungart *Beyond the Limits of Sustainable Architecture: A New Material Sensibility for the 21st Century*.
 - Reading Assignment: *Mold: A Problem of Biblical Proportions?* Richard E. Schellhammer.

Wednesday October 16

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

WEEK 9 Monday October 21

- 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 October 23

- A. Design Project

WEEK 10 Monday October 28

A. Building Envelope: **Test 2**

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

Wednesday October 30

B. Design Project

WEEK 11 Monday November 4

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

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

Wednesday November 6

A. Design Project

WEEK 12 Monday November 11

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 November 13

A. Design Project

WEEK 13 Monday November 18

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 November 20

A. Present completed design projects to guest jurors.

WEEK 14 Monday November 25
A. Guest Lecturer: TBD

Wednesday November 27
A. Building Re-Use: *Test 3*

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

WEEK 15 Monday December 2 DEAD WEEK
B. Review for Final Exam

Wednesday December 4
A. Guest Lecturer: TBD

WEEK 16 Monday December 9
Final Exam