

UMass Amherst & Yestermorrow Design/Build School
Semester in Sustainable Design/Build
Fall 2015 - Syllabus

Course Title: Actual Title: ARCH 497A: Sustainable Building Systems
Working Title: ARCH 497A: Building Science for Cold Climates

Credits: (3)

Professor(s): Eric Cook and associated faculty

Co-Requisites: ARCH 497B: Defining Metrics for Sustainability
ARCH 497C & 497D: Design & Visual Communications Studio
ARCH 497V: History of Vermont Architecture

Program: This syllabus is intended to help students, faculty, and registrars translate the program into discrete course credits at their home institutions. Now entering our third year we feel strongly that we have developed an empowering curriculum that enables and inspires students to test the concepts of sustainability in practice, while meeting the liberal arts requirements of their sending institutions. It is worth noting that the technical aspects of the program exist in addition to the curriculum outlined below. Thus, advisors should feel confident that students will be steeped in high a high level humanistic education grounded in rhetoric, theory, and critical analysis. Students will experience the Yestermorrow Design/Build semester's multi-disciplinary curriculum as an integrated whole: lectures, seminars, discussions, studio and site work are designed to reinforce and complement each other.

For more information, please visit: www.yestermorrow.org/semester

Introduction: The objective of this course is to develop the understanding of basic principles of building physics, material science, and appropriate technology for a New England climate. Through lectures, readings, class discussions, and assignments students will gain comprehension of building anatomy. They will understand how natural forces, particular to a northeast climate can affect a buildings structural and thermal performance. Through individual research, leaning heavily on sourcing and reading white papers from specialists in the field of building science, students will form opinions and present findings on best practices and relate those findings to sociopolitical and economic factors of accessibility. Guest lectures will introduce students to current sustainable technologies, and students will have the opportunity to experiment through applied material research.

Learning Objectives:

- Understanding the Social and Historical Context of Residential Buildings
- Identifying a Material's Role in Local Economy and Ecological Impact
- Safe and Effective Use of Tools and Materials
- Understanding Elements of Buildings and Building Systems
- Collaborative Group Process

Readings:

- A Place of My Own by Michael Pollan
- House by Tracy Kidder
- Homing Instinct by John Connell
- The Independent Builder by Sam Clark
- Measuring, Marking, and Layout: A Builder's Guide by John Carroll

Evaluation: Students will be evaluated through attendance, assignments, and participation both in groups and alone.

Schedule: Fully integrated into the design and visual communications course, the class meets on Tuesdays from 9am - noon. In addition, field trips and excursions may be periodically scheduled outside of these class meeting times.

Expectations: Students are expected to work regularly and productively in fulfillment of the assignments, with new material and evident progress for each discussion of their work. Except when team projects are assigned, all work should be the product of the individual student. Students are expected to exploit the opportunities presented by the studio project to integrate knowledge and skills gained in their other courses. In addition, students are expected to take notes, read what is assigned, and complete assignments on time. Extensions for medical reasons or family emergencies should be requested as soon after the event as possible and in advance of the deadline, and should be supported by proper documentation. It is occasionally necessary to change deadlines and specific requirements. Such changes will be made with as much notice as possible, but may occasionally be made at short notice to ensure the productive continuity of the studio.

Accommodation: Students with documented disabilities who require accommodations should make an appointment to speak to all instructors, and if needed, the staff at Yestermorrow.

UMass Amherst & Yestermorrow Design/Build School
Semester in Sustainable Design/Build
Fall 2015 - Syllabus

Course Title: Actual Title: ARCH 497B: Sustainable Design
Working Title: ARCH 497B: Defining Metrics for Sustainability

Credits: (3)

Professor(s): Eric Cook and associated faculty

Co-Requisites: ARCH 497A: Building Science for Cold Climates
ARCH 497C & 497D: Design & Visual Communications Studio
ARCH 497V: History of Vermont Architecture

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Introduction: This course is an inter-disciplinary seminar designed to allow students to explore the emerging definitions of "sustainability." Students will be exposed to and required to discuss current theories, methodologies, and best practices related to the creation of our built environments. Topics for consideration may include but are not limited to human health, community engagement, building performance, ecological impact, human relationships to nature, material life cycle, material spirit, affordability, appropriate technology, beauty, ethics, and utility. Students will grapple with these topics as they develop an appreciation of multiple perspectives; including various stakeholders like developers, designers, builders, and clients. Using a case-study approach, readings, discussions, and lectures students will develop and defend various positions, ultimately defining for themselves metrics for how to define the sustainable building movement, beyond just the greening of conventional affordable buildings into the territory of regenerative design and development.

Learning Objectives: - Understanding of affordability, social justice, and demographic trends.
- Exploration of the strategies of sustainable and restorative building practices, including the following:

site planning, integration of landscapes, high density planning and economic revitalization, renewable energy systems, natural building methods, intentional communities, net positive energy generators, water management, catalysts for community building, and other urban and rural applications of sustainable design principles.

- Experience with basic energy and daylight modeling, solar resource assessment, building envelope assessment, and life-cycle analysis.

- Appreciate the role of communities, now and into a post-oil economy.

Readings:

- Cradle to Cradle by William McDonough

- "Unbuilding Our Home," in The World Without Us, by Alan Weisman

- "Urban Resilience: Cities of Fear and Hope," in Resilient Cities: Responding to Peak Oil and Climate Change, Peter Newman, Timothy Beatley, and Heather Boyer. p.1-13.

- The Transition Handbook: From Oil Dependency to Local Resilience by Rob Hopkins

Evaluation:

Students will be evaluated through attendance, assignments, and participation both in groups and alone.

Schedule:

Fully integrated into the design and visual communications course, the class meets on Tuesdays from 1pm – 4pm. In addition, field trips and excursions may be periodically scheduled outside of these class meeting times.

Expectations:

Students are expected to work regularly and productively in fulfillment of the assignments, with new material and evident progress for each discussion of their work. Except when team projects are assigned, all work should be the product of the individual student. Students are expected to exploit the opportunities presented by the studio project to integrate knowledge and skills gained in their other courses. In addition, students are expected to take notes, read what is assigned, and complete assignments on time. Extensions for medical reasons or family emergencies should be requested as soon after the event as possible and in advance of the deadline, and should be supported by proper documentation. It is occasionally necessary to change deadlines and specific requirements. Such changes will be made with as much notice as possible, but may occasionally be made at short notice to ensure the productive continuity of the studio.

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Fall 2015 - Syllabus

Course Title: ARCH 497C & 497D: Design & Visual Communications Studio

Credits: (6)

Professor(s): Eric Cook and associated faculty

Co-Requisites: ARCH 497A: Building Science for Cold Climates
ARCH 497B: Defining Metrics for Sustainability
ARCH 497V: History of Vermont Architecture

Program: This syllabus is intended to help students, faculty, and registrars translate the program into discrete course credits at their home institutions. Now entering our third year we feel strongly that we have developed an empowering curriculum that enables and inspires students to test the concepts of sustainability in practice, while meeting the liberal arts requirements of their sending institutions. It is worth noting that the technical aspects of the program exist in addition to the curriculum outlined below. Thus, advisors should feel confident that students will be steeped in high a high level humanistic education grounded in rhetoric, theory, and critical analysis. Students will experience the Yestermorrow Design/Build semester's multi-disciplinary curriculum as an integrated whole: lectures, seminars, discussions, studio and site work are designed to reinforce and complement each other.

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Introduction: This two-part course will investigate ideas of architectural design process and visual representation through a studio format. We will begin by reading Michael Pollan's book "A Place of My Own", using his autobiographical account as a launch pad to explore ideas of shelter. Students will then research and present on various leaders of innovation in the design world and important precedent works, taking note to account for the particular methodological approaches that produced noteworthy outcomes. Drawing from these precedents students will examine various methods for generating a concept, effectively communicating that concept through drawing. Subsequently students will reflect on the outcome a drawing may produce when lifted from the page, or screen, into a fully realized form. Through field trips, additional readings in design theory and phenomenology, and individual research, students will begin to apply these lessons learned to a final semester project. Development of presentation and critical thinking skills will be essential as students will themselves grapple with developing a project all the while addressing key environmental and cultural influences necessary to realize a successful work of architecture. Students will leave with a fundamental understanding of how social, political, performative, and economic factors impact design choices. Particular emphasis will be placed on the process of collaborating as a group, including a variety of perspectives and conceptual approaches, and incorporating the ongoing building process.

Students will present their designs for interim and final reviews and will incorporate feedback in an ongoing iterative learning process.

Learning Objectives:

- Fundamental drawing, modeling and visual media skills
- Design Research and Case Study Analysis
- Introduction to Design Approaches and Communication
- Regional Considerations
- Collaborative Group Process
- Visual and Verbal Presentation Skills
- Reflective Writing
- Analysis of the project site as both natural and cultural context
- Measuring, managing and mitigating environmental impact on site

Readings:

- A Place of My Own by Michael Pollan
- Theoretical Anxiety and Design Strategies in the Work of Eight Contemporary Architects by Rafael Moneo
- Education of an Architect: The Cooper Union School of Art and Architecture, 1964-1971 by John Hedjuk
- Neufert Architects' Data, Fourth Edition

Sketchbook: Each student shall maintain a sketchbook throughout the semester. The size and type of sketchbook are open to your preference, although we suggest that an easily portable size— 5"x 8" minimum, for example — is one that you are more likely to carry with you at all times. Sketch media are also up to you.

Blogging: You will be invited to contribute to a pre-designed Tumblr site: <http://ym-semester13.tumblr.com/>
Here you will have the opportunity to post different forms of digital media (text, photos, quotes, links, chats, audio, and video) pertaining to the semester. The purpose of this assignment is to create a forum for journaling, discussing, and publicizing student work and experience. Your goal is to come up with creative ways to engage your instructors, peers, as well as the public in a larger dialogue about the design and build process and product.

Evaluation: Students will be evaluated by attendance and participation both in groups and alone, as well as through design work and regular journaling assignments. This studio will require each student to demonstrate a range of abilities, and understandings, as well as an awareness of important issues. Assignments will be evaluated on the student's success in fulfilling the general objectives of the studio, the specific objectives of the assignment, and mandatory requirements. Throughout the studio, there will be an emphasis on consistently advancing the quality and clarity of drawings and models as both tools of exploration and of presentation.

Schedule: Fully integrated into the semester courses, this class meets Monday, Wednesday, and Friday from 9am – noon, then from 1pm – 4pm. In addition, field trips and excursions may be periodically scheduled outside of these class meeting times.

Expectations:

Students are expected to work regularly and productively in fulfillment of the assignments, with new material and evident progress for each discussion of their work. Except when team projects are assigned, all work should be the product of the individual student. Because studio meetings may be scheduled at short notice, students are to work in the studio space during scheduled studio hours especially at the beginning and end of the studio session. Studio sessions may sometimes extend beyond the scheduled hours; students due for a desk review should advise the Instructor in advance on those occasions when they are unable to stay beyond 5PM. Students are expected to exploit the opportunities presented by the studio to integrate knowledge and skills gained in their other courses. In addition, students are expected to take notes, read what is assigned, and complete assignments on time. Extensions for medical reasons or family emergencies should be requested as soon after the event as possible and in advance of the deadline, and should be supported by proper documentation. It is occasionally necessary to change deadlines and specific requirements. Such changes will be made with as much notice as possible, but may occasionally be made at short notice to ensure the productive continuity of the studio.

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Course Title: Actual Title: ARCH 498: Practicum
Working Title: ARCH 497V: History of Vermont Architecture:
Vernacular Forms and the Design/Build Movement

Credits: (3)

Professor(s): Eric Cook and associated faculty

Co-Requisites: ARCH 497A: Building Science for Cold Climates
ARCH 497B: Defining Metrics for Sustainability
ARCH 497C & 497D: Design & Visual Communications Studio

Program: This syllabus is intended to help students, faculty, and registrars translate the program into discrete course credits at their home institutions. Now entering our third year we feel strongly that we have developed an empowering curriculum that enables and inspires students to test the concepts of sustainability in practice, while meeting the liberal arts requirements of their sending institutions. It is worth noting that the technical aspects of the program exist in addition to the curriculum outlined below. Thus, advisors should feel confident that students will be steeped in high a high level humanistic education grounded in rhetoric, theory, and critical analysis. Students will experience the Yestermorrow Design/Build semester's multi-disciplinary curriculum as an integrated whole: lectures, seminars, discussions, studio and site work are designed to reinforce and complement each other.

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Introduction: Students will be introduced to the vernacular architecture of northern New England and the history of the design/build movement of the latter half of the 20th century. Guest lectures, field trips, readings and discussions will provide a survey of shelter types and strategies in Vermont's difficult climate as well as the evolution of design/build. This course will also examine the historical, social, and economic issues surrounding housing and architecture in the region. Issues such as bioregionalism, historic preservation and land use will also be explored. Students will analyze the climatic responses of vernacular building features to inform their work, as they consider the social, cultural, and economic factors driving the evolution of certain forms, building types, and aesthetic choices. Special interest will also be paid to the Bauhaus teaching philosophy developed by Johannes Itten, its migration to the United States, and its ultimate implementation as part of the practical approach applied in the late 60's and 70's by Vermont Design/Builders.

Learning Objectives:

- Understanding Vermont's changing land use patterns and vernacular building types
- Exploring the design/build philosophy in Vermont
- Understanding design/build as an alternative mode of practice

- Readings:**
- How Buildings Learn, by Stuart Brand
 - Hands on the Land, by Jan Albers
 - Architectural Improvisation: A History of Vermont's Design/Build Movement 1964-1977, by Danny Sagan
 - Old Vermont Houses: 1763-1850, by Herbert Wheaton Congdon
 - Wood, Brick, and Stone: The North American Settlement Landscape : Barns and Other Farm Structures (Wood, Brick, & Stone) by Allen G. Noble
 - Big House, Little House, Back House, Barn: The Connected Farm Buildings of New England by Thomas C. Hubka
- Evaluation:** Students will be evaluated through attendance, assignments, and participation both in groups and alone.
- Schedule:** Fully integrated into the design and visual communications course, the class meets on Tuesdays from 9am - noon. In addition, field trips and excursions may be periodically scheduled outside of these class meeting times.
- Expectations:** Students are expected to work regularly and productively in fulfillment of the assignments, with new material and evident progress for each discussion of their work. Except when team projects are assigned, all work should be the product of the individual student. Students are expected to exploit the opportunities presented by the studio project to integrate knowledge and skills gained in their other courses. In addition, students are expected to take notes, read what is assigned, and complete assignments on time. Extensions for medical reasons or family emergencies should be requested as soon after the event as possible and in advance of the deadline, and should be supported by proper documentation. It is occasionally necessary to change deadlines and specific requirements. Such changes will be made with as much notice as possible, but may occasionally be made at short notice to ensure the productive continuity of the studio.
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