ARCH 497A: Sustainable Building Systems: Building Science for Cold Climates (3 credits):

This course examines the basic principles of building science, material performance (individual and integral in an assembly), and appropriate, resilient technology. Focused primarily on the New England climate, this course also examines appropriate responses to different climactic and ecologic regions. Students will develop an understanding of how natural (wind, moisture, gravity) and imposed forces (heating/cooling/electrical load, sudden impact, portability) affect the design and performance of a building's structure and envelope. Attention will be paid to relevant energy and performance standards (LEED, Living Building, Passive House, et al) as guiding principles. Guest lectures will include innovators in their fields; field trips will provide students opportunities to understand the breadth of material options and explore conventional and unconventional applications. Readings and Assignments are designed to introduce students to principles of building materials, assembly methods and performance and cultivate robust knowledge of initial principles of structure, building science, and durability.

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

Credits: (3)

Professor(s): Semester Program Director and Faculty team

Co-Requisites:
        ARCH 497B: Defining Metrics for Sustainability
        ARCH 497C & 497D: Design & Visual Communications Studio
        ARCH 497V: History and Theory of Design/Build

Readings: *selected from*
·   Builder's Guide to Cold Climates by Joseph Lstiburek
·   Selected technical writing from Building Science Corporation by Joseph Lstiburek, et al
·   The Green Studio Handbook by Alison G. Kwok, AIA & Walter T. Grondzik, PE
·   Theorizing a New Agenda for Architecture: An Anthology of Architectural Theory Edited by Kate Nesbitt

Evaluation:
        Students will be evaluated though exercises/assignments, participation/contribution, attendance and progress; both in groups and individually.

Expectations:
        Students are expected to work regularly, productively, and earnestly in exploring and executing work. While collaboration is encouraged, students will be asked to complete work that is exclusively their own at specific times. It is expected that the program's project will act as a vehicle for much of the coursework and research, encouraging relevant and definite evaluation and resolution of decisions and challenges. With this in mind, students are expected to engage this course with the appropriate gravity and consideration for a project to be physically constructed and left to stand the tests of use, maintenance, and environment. Extensions for medical or family reasons should be presented to faculty as soon as reasonably possible and may require verification at the discretion of the faculty.

Accommodation:
        Yestermorrow and UMass are committed to an inclusive, equitable, and accessible learning environment for all students. Students seeking accommodations for disabilities should notify Yestermorrow faculty or staff as soon as reasonably possible.

ARCH 497B: Sustainable Design: Defining Metrics for Sustainability (3 credits):

This course draws from multiple arenas to cultivate in students an awareness of the multi-faceted notions of 'sustainability'. Students will describe their own convictions and actions surrounding sustainability, work towards an initial shared set of values, and develop rhetoric surrounding a 'triple bottom line' of environment, equity, and economy. Students will examine current practices, analysis, and theory in topics including building performance, human health, ecological impact (at all phases of a building), affordability/accessibility, durability, and community resilience. Students will consider these topics from positions of various stakeholders and develop a definition of sustainability appropriate to the cohort, project, and client. Additionally, students will use these explorations to work towards a metric for decisions incorporating qualitative and quantitative attributes.

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

Credits: (3)

Professor(s): Semester Program Director and Faculty team

Co-Requisites:
          ARCH 497A: Building Science for Cold Climates
          ARCH 497C & 497D: Design & Visual Communications Studio
          ARCH 497V: History and Theory of Design/Build

Readings: *selected from*
· The Company We Keep: Reinventing Small Business for People, Community, and Place by John Abrams
· Builder's Guild to Cold Climates by Joseph Lstiburek
· The Green Studio Handbook by Alison G. Kwok, AIA & Walter T. Grondzik, PE
· Theorizing a New Agenda for Architecture: An Anthology of Architectural Theory Edited by Kate Nesbitt
· Cradle to Cradle by Bill McDonough

Evaluation:
          Students will be evaluated though exercises/assignments, participation/contribution, attendance and progress; both in groups and individually.

Expectations:
          Students are expected to work regularly, productively, and earnestly in exploring and executing work. While collaboration is encouraged, students will be asked to complete work that is exclusively their own at specific times. It is expected that the program's project will act as a vehicle for much of the coursework and research, encouraging relevant and definite evaluation and resolution of decisions and challenges. With this in mind, students are expected to engage this course with the appropriate gravity and consideration for a project to be physically constructed and left to stand the tests of use, maintenance, and environment. Extensions for medical or family reasons should be presented to faculty as soon as reasonably possible and may require verification at the discretion of the faculty.

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SEMESTER IN DESIGN/BUILD: SYLLABUS

ARCH 497C & 497D: Design & Visual Communications Studio (6 credits):

This course will examine the underlying principles of initiating design. By focusing on various informants (client's values, project's social significance, tectonics, gesture, budget), students will gain understanding of different approaches towards design genesis. With an emphasis on diagram as visual communication and clarifier of form and program, students will work to articulate their individual interpretations of the design intent. Through frequent peer-, faculty-, and practitioner-based reviews, students will demonstrate the clarity of their underlying design principles and work towards a set of guiding informants for the cohort's design project. Students will be led through exercises to examine the relationship between the nature and description of drawings the resultant built work. Through field trips, readings in theory and approach, and extensive iteration, students will cultivate and invoke design processes that realize an innovative element in the built environment. Students will be challenged to present their ideas, findings, and positions graphically, orally, and in narrative. Particular attention will be paid to developing a robust process for collaboration and iteration.

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

Credits: (6)

Professor(s): Semester Program Director and Faculty team

Co-Requisites:
>ARCH 497A: Building Science for Cold Climates
>ARCH 497B: Defining Metrics for Sustainability
>ARCH 497V: History and Theory of Design/Build

Readings: *selected from*
- Diagramming the Big Idea by Jeffrey Balmer & Michael T. Swisher
- Theorizing a New Agenda for Architecture: An Anthology of Architectural Theory Edited by Kate Nesbitt
- On the Architectural Design Parti by Julio Bermudez

Evaluation:
>Students will be evaluated though exercises/assignments, participation/contribution, attendance and progress; both in groups and individually.

Expectations:
>Students are expected to work regularly, productively, and earnestly in exploring and executing work. While collaboration is encouraged, students will be asked to complete work that is exclusively their own at specific times. It is expected that the program's project will act as a vehicle for much of the coursework and research, encouraging relevant and definite evaluation and resolution of decisions and challenges. With this in mind, students are expected to engage this course with the appropriate gravity and consideration for a project to be physically constructed and left to stand the tests of use, maintenance, and environment. Extensions for medical or family reasons should be presented to faculty as soon as reasonably possible and may require verification at the discretion of the faculty.

Accommodation:
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497V: History and Theory of Design/Build (3 credits):

This course will explore the different models of project development, management, and delivery through an examination of New England's regional architecture from the eighteenth and nineteenth centuries through contemporary practice with a focus on the built environment of Vermont and New England. Emphasis will be placed on the Design/Build model, its evolution, and its comparisons to typical delivery models. This course will incorporate guest lectures, field trips, and readings with a goal of applying knowledge in vernacular response, resource allocation, and project management to the program's current and students' future projects. Particular attention will be paid to developing, evaluating, and maintaining an internal framework for communication, decision-making, and self- and peer-evaluation. Additional emphasis will be placed on social, cultural, and economic factors and their changing effects on the built environment and its perception and effect.

Course Title: ARCH 498: Practicum
        Working Title: ARCH 497V: History and Theory of Design/Build

Credits: (3)

Professor(s): Semester Program Director and Faculty team

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

Evaluation:
        Students will be evaluated though exercises/assignments, participation/contribution, attendance and progress; both in groups and individually.

Expectations:
        Students are expected to work regularly, productively, and earnestly in exploring and executing work. While collaboration is encouraged, students will be asked to complete work that is exclusively their own at specific times. It is expected that the program's project will act as a vehicle for much of the coursework and research, encouraging relevant and definite evaluation and resolution of decisions and challenges. With this in mind, students are expected to engage this course with the appropriate gravity and consideration for a project to be physically constructed and left to stand the tests of use, maintenance, and environment. Extensions for medical or family reasons should be presented to faculty as soon as reasonably possible and may require verification at the discretion of the faculty.

Accommodation:
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