

THREE RIVERS COMMUNITY COLLEGE
ALTERNATIVE BUILDING SYSTEMS – ARC K225

Wednesday 6:30pm, Rm B-125

Instructor: Professor Mark Comeau, AIA, (860-215-9415), email MComeau@trcc.commnet.edu

Grade: Exams 50% Vignettes 15% Case Study 20% Final 15%

Course Objectives:

Students will gain working knowledge of alternative building systems (students should have previous knowledge of traditional building systems). Areas covered include building siting, structural alternatives, envelope and weathering systems, industry-standard design and performance criteria (LEED & BPI), interior environmental quality, and mechanical-electrical-plumbing systems. Students will demonstrate applied learning through case-study work.

Method: Lectures, Slide Lectures, Simulations, Class Discussion, Case Studies

Text: **Instructor Supplements**

(Note: Documentation appropriate to the scheduled lecture will be distributed at the time of each lesson.)

<u>Unit 1</u>	Introduction & Overview Traditional vs. Alternative Systems	<u>Unit 9</u>	Building FF&E Fixtures, Furnishings & Equipment
<u>Unit 2</u>	Site Impacts and Hazards Location, Zoning & Codes	<u>Unit 10</u>	Energy & Fuel Sources Electricity & Combustion
<u>Unit 3</u>	Structural Systems ICF, SIP, Composite Systems	<u>Unit 11</u>	Building MEP Systems Geo-thermal, Passive/Active, Controls
<u>Unit 4</u>	Envelope Envelope Systems	<u>Unit 12</u>	Building MEP Systems Operation, Life-cycle & Maintenance
<u>Unit 5</u>	Weathering Siding, Roofing, Flashing & Sealants	<u>Unit 13</u>	Sustainable Design & Communities Design & Conversion-adapting
<u>Unit 6</u>	Doors & Windows Fenestration & Operable Openings	<u>Unit 14</u>	Case Study Assigned Project-based Capstone
<u>Unit 7</u>	Building Design & Performance LEED, BPI & NAHB Criteria	<u>Unit 14</u>	Case Study Cont'd ...
<u>Unit 8</u>	Building Interior Environment Indoor Quality, Daylighting, VOC's	<u>Unit 14</u>	Delivery Case Study Presentations

COURSE REQUIREMENTS:

Educational Objectives:

- Establish a baseline of building systems and their integrations;
- Develop a practical inventory of alternative building systems (vs. traditional);
- Understand the uses, applicability, and limits of alternative systems and their installations and maintenance.

Notebook

Students will assemble a notebook, to be made up of handouts distributed at the beginning of each class. A 3" "Slant-ring" notebook with plastic sheet protectors is recommended – this will be a good resource for future reference.

Case Study

Case study will be due no later than the beginning of the last (16th) week but no sooner than the 15th. More details will be discussed in class.

Alternative Building Systems Course Outcomes:

- Attain working knowledge of BPI (Building Performance Institute), project implementation;
- Attain understanding of the inventory of alternative and sustainable building systems;
- Demonstrate an understanding of upstream and downstream construction effects;
- Be able to identify alternative (non-traditional) building systems by their upstream and downstream sustainable components;
- Demonstrate the ability to recommend and implement alternative building system elements commensurate with client program needs;
- Demonstrate life-cycle costs and life-cycle savings using basic mathematical computations;
- Demonstrate an understanding of systems-integrated building approaches to structure, envelope, MEP and other related building systems.

ACADEMIC PERFORMANCE

Lecture Period:

Students shall respect the classroom environment. Professors invest valuable time in lecture preparation to make the course content organized, interesting, and understandable and to make the learning environment collegial. Unless specifically directed by the professor, students shall refrain from sending email and instant messages, or from engaging in other activities (reading non-course materials, engaging in private conversations and so on), that disrespect the classroom environment and learning conditions for others.

Access to the Internet can be a valuable aid to the classroom learning environment. Students are encouraged to use laptops, smart phones, and other devices in order to explore concepts related to course discussions and topics. Students are discouraged from using technology in ways that distract from the learning community (e.g. Facebook, texting, work for other classes, etc.) and if found doing so, will be asked to leave the classroom for the day and will not get credit for attendance that class period.

Assessment:

Assessment of your mastery of the Courses learning objectives may be administered through quizzes, exams, or essays. These are announced with ample preparation time and sometimes a study guide. Upon absence from a class in which an assessment is given, it is the student's responsibility to request, coordinate and schedule, a makeup date and time with the professor. Assessments not made up within one week from when initially given will result a three point reduction from the score earned, per class period lapse.

Online Learning Portfolio

All students are required to maintain an online learning portfolio in Digication that uses the college template, in as much as it is pertinent and supported by outcome products of this course. Through this electronic tool students will have the opportunity to monitor their own growth in college-wide learning. The student will keep his/her learning portfolio and may continue to use the Digication account after graduation. A Three Rivers General Education Assessment Team will select and review random works to improve the college experience for all. Student work reviewed for assessment purposes will not include names and all student work will remain private and anonymous for college improvement purposes. Students will have the ability to integrate learning from the classroom, college, and life in general, which will provide additional learning opportunities. If desired, students will have the option to create multiple portfolios.

Integrity:

Any and all exams, papers or reports submitted by you and that bears your name is presumed to be your own original work that has not previously been submitted for credit in another course unless you obtain prior written approval to do so from your professor.

In all of your assignments, including homework or drafts of papers, you may use words or ideas written by other individuals in publications, web sites, or other sources but only with proper attribution. "Proper attribution" means that you have fully identified the original source and extent of your use of the words or ideas of others that you reproduce in your work for this course, usually in the form of a footnote or parenthesis.

As a general rule, if you are citing from a published source or from a web site and the quotation is short (up to a sentence or two), place it in quotation marks; if you employ a longer passage from a publication or web site, please indent it and use single spacing. In both cases, be sure to cite the original source in a footnote or in parentheses. (See http://www.plagiarism.org/plag_article_how_do_I_cite_sources.html for more information on citing.)

If you are uncertain about the expectations for completing an assignment or taking a test or examination, be sure to seek clarification from your professor beforehand.

Finally, you should keep in mind that as a member of the Three Rivers Community College community, you are expected to demonstrate integrity in all of your academic endeavors and will be evaluated on your own merits.

Be proud of your academic accomplishments and help to protect and promote academic integrity. The consequences of cheating and academic dishonesty may include a formal discipline file, possible loss of financial scholarship or employment opportunities, and denial of admission to a four year college.