THREE RIVERS COMMUNITY COLLEGE

ALTERNATIVE BUILDING SYSTEMS – ARC K225

Tuesday & Thursday 2:00pm, Rm B-125

Instructor: Professor Mark Comeau, AIA, (885-2387), email MComeau@trcc.commnet.edu

Grade: Quizzes 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.)*

Week 1 (8/26)	**Traditional Systems/Site selection** Building Systems/Smart Planning	Week 9 (10/21)	**Building FF&E** Fixtures, Furnishings & Equipment
Week 2 (9/02)	**Labor Day** No Classes in Session	Week 10 (10/28)	**Energy & Fuel Sources** Electricity & Combustion
Week 3 (9/09)	**Structural Systems** ICF, SIP, Composite Systems	Week 11 (11/04)	**Building MEP Systems** Geo-therm, Passive/Active, Controls
Week 4 (9/16)	**Envelope** Envelope Systems	Week 12 (11/11)	**Building MEP Systems** Operation, Life-cycle & Maintenance
Week 5 (9/23)	**Weathering** Siding, Roofing, Flashing & Sealants	Week 13 (11/18)	**Sustainable Communities** Design & Conversion-adapting
Week 6 (9/30)	**Doors & Windows** Fenestration & Operable Openings	Week 14 (11/25)	**Thanksgiving Recess** Schedule Float
Week 7 (10/07)	**Building Design & Performance** LEED, BPI & NAHB Criteria	Week 15 (12/02)	**Case Study** (Students conduct home evaluation)
Week 8 (10/14)	**Building Interior Environment** Indoor Quality, Daylighting, VOC's	Week 16 (12/09)	**Conclusion** Exam, Final Projects Due

---

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 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.