

THREE RIVERS COMMUNITY COLLEGE
SUSTAINABLE CONSTRUCTION ARC K214 (W/G|PRO CERTIFICATION)

Fall 2016, Wednesday 6:00 - 8:45 PM

Professor: Professor Mark A. Comeau ▪ ARCHITECT, 860.215.9415, email MComeau@threeivers.edu

Credits: 3, Hours: 3, Pre-requisites: ARC 108

Grade: Exams/Case Study 60% Project Vignettes 30% Class Participation 10%

Course Objectives:

Students will engage in the analysis of sustainable planning, design, and construction methods. Emphasis will be placed on both site and building aspects including walkability, heat-island effect, water management, material durability and performance, healthy buildings, renewables, and methods of performance validation. Credential raters (e.g. LEED, Energy Star, etc.), and other industry metrics will be studied and evaluated along with up and down-stream and life-cycle analyses.

Method: Lectures, Slide Lectures, Simulations, Class Discussion

Text: **USGBC G|Pro Course Guides, Instructor Supplements**

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

Unit 1 **Historical Perspectives**

Cultures, Context, Resources

Unit 9 **Building FF & E**

Fixtures, Furnishing & Equipment

Unit 2 **Planning: Macro Perspective**

Regional & Community Patterns

Unit 10 **Building MEP Systems**

Mechanical/Electrical/Plumbing

Unit 3 **Planning: Micro Perspective**

Regulations & Site Planning

Unit 11 **Building MEP Systems**

Operation, Life-cycle, and Maintenance

Unit 4 **Resources: Natural**

Depletion, Pollution & Conservation

Unit 12 **Fundamentals of Green Building**

Sustainable Energy & Environment

Unit 5 **Resources: Energy**

Fuels & Renewables

Unit 13 **Fundamentals of Green Building**

Sustainable Building Systems

Unit 6 **Structural Systems**

Engineered Lumber, ICF, Sips

Unit 14 **O & M: Equipment, Products, Cleaners**

G|Pro Module

Unit 7 **Envelope Systems**

Integrating Walls & Roof

Unit 15 **O & M: Lighting, Controls & Modeling**

G|Pro Module

Unit 8 **Integrative Building Design**

Interior & Exterior Performance

Exam

G|Pro Certification

LEARNING OUTCOMES

- Develop an understanding of historic sustainable human settlement patterns and modern techniques as shaped by the needs, the environment, and regulations and laws.
- Develop an understanding of natural resource conservation and enhancement through planning.
- Demonstrate working knowledge of the various codes, ordinances and regulations effecting designs.
- Demonstrate working knowledge of alternative building materials, renewable energy systems, and their integration and assessment as related to LEED, BPI and other performance metrics.
- **Students will participate in the USGBC's G|Pro Certification Examination upon course completion**

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 Course's learning objectives may be administered through quizzes, exams, or essays which may be in the form of ground "hard-copy" or administered through BlackBoard. 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.