THREE RIVERS COMMUNITY COLLEGE

CONSTRUCTION MATERIALS & METHODS ARC K108

Monday & Wednesday 3:00 - 4:15 PM

Professor: Brian Schuch ▪ ARCHITECT, email BrianSchuch@gmail.com
Credits: 3, Hours: 3, Co-requisites: ARC 135/L
Grade: Exams (4) 60% Assignments & Vignettes 25% Final 15%

Course Objectives:

This course introduces architecture, civil & construction mgmt. students to the source, use and limitations of materials used in building construction. While the historical use of materials as function and design expression is a focus, emphasis is placed on contemporary building construction, how codes impact design, and the articulation of a systems-approach through the understanding of assembly and attachment. Practical working knowledge is attained through a series of projects requiring students to design and detail mock assemblies.

Method: Lectures, Slide Lectures, Project sketching, Class Discussion

Text: **Building Construction Illustrated, Francis D.K. Ching, (and Instructor Supplements)**
*(**Note:** The course's weekly subjects follow the book's layout in sequential chapter order. Please read corresponding subject-chapter material prior to each class.)*

Unit 1 **Over-view** (Introduction)
A Historic Look at Material Solutions

Unit 2 **Site Work Materials**
Soil, Aggregates, Paving

Unit 3 **Concrete**
Properties/Mixes, Uses & Limits

Unit 4 **Masonry**
Products, Uses & Assembly

Unit 5 **Metals**
Properties, Fasteners, Products & Uses

Unit 6 **Woods**
Framing & Rough Carpentry

Unit 7 **Woods** Cont'd
Millwork & Finish Carpentry

Spring Break
No Classes in Session

Unit 8 **Thermal & Moisture Protection**
Theory, Roofing, Insulation & Flashing

Unit 9 **Doors and Windows**
Residential & Commercial Systems

Unit 10 **Finishes**
Walls, Floors & Ceilings

Unit 11 **Finishes** Cont'd
Trim and Millwork

Unit 12 **Mechanical**
Piping/connections, HVAC Systems

Unit 13 **Electrical**
Service Entry, Fixtures & Controls

Unit 14 **REVIEW**
Course Review

Final Exam
Course Complete

Additional Requirements:

Supplemental Content

Students will responsible for downloading course content as directed by the professor. Unit lectures will be available at www.ProfessorComeau.com or as otherwise provided.

LEARNING OUTCOMES:

- Develop understanding and appreciation for historical use of materials (function & design)
- Identify material sources, extraction methods, properties, and product manufacture
- Understand up-stream issues, material distribution, storage and handling
- Read, understand, and interpret design sketches and construction detail drawings
- Attain knowledge of the inventory and methods of materials used in infrastructure and buildings
- Prepare detail drawings of material assemblies, connections, and fastening systems

SCHEDULE OF DRAWINGS PREPARED:

- Sub-surface drainage structure
- Infrastructure item, e.g. retaining wall, bridge abutment, ISDS component, etc.
- Foundation detail with reinforcing and embeds
- Cavity/veneer masonry wall
- Wood frame conditions at foundation and roof (showing thermal and moisture protection)
- Structural steel beam-to-column
- Curtain-wall detail
- Millwork joint, fastener, and finish detail
- Pex manifold and split hydro-air schematic
- Electrical service and distribution schematic

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.