CSTM 301: RESIDENTIAL ARCHITECTURAL DESIGN

Fall 2016 Instructor: Seong C Kim, Ph.D.
MW 01:00PM ~ 02:50PM E-mail: S-Kim7@wiu.edu
Credit: 3 hrs Office: 338 Knoblauch Hall
Location: 106 Knoblauch Hall

Department of Engineering Technology Goals for Student Learning
Engineering Technology (Construction Management, Graphic Communication, Manufacturing Engineering Technology) is a field of study designed to provide students educational programs that allow them to communicate effectively, design and apply technical solutions, use technology effectively, and respond to project management tasks in an environment with continually changing and sophisticated technology in an increasingly competitive global marketplace.

By graduation, Engineering Technology students should be able to:
1. Think critically and creatively;
2. Understand the theoretical principles of the profession;
3. Understand and apply relevant technology in the solution of technical problems;
4. Organize, manage, and maintain projects;
5. Develop an appreciation for ethical and professional practices;
6. Develop and refine oral, written, and visual communication skills; and
7. Demonstrate an overall competency in the program objectives.

Course Description
This course explores the architectural programming including room and space planning, materials, details, section, elevation and construction system focusing on residential buildings. This course also provides you with the foundational knowledge of blueprint development as it relates to residential building construction projects. It also covers the development of 2-D computer drawing and 3-D modeling.

Course Objectives
As a result of successfully completing this course, the student will be able to do the following:
1. Applied knowledge of graphic vocabulary.
2. Applied knowledge of detail hierarchies, scale, and content.
3. Applied knowledge of notes and specifications, reference conventions
4. Applied knowledge of computer applications – CAD and BIM applications
5. Applied knowledge of blueprint development as it relates to residential construction projects.
6. Development of the residential building design with 2-D and 3-D computer modeling.

Last Day to Drop Course
The last day to drop a course with “W” grade is Friday, Oct 30, 2016

Office Hours
Monday and Wednesday 9:00AM ~ 10:00AM, Tuesday and Thursday 1:00PM ~ 2:00PM or by appointment. In order to schedule an appointment other than office hours, e-mail me (S-Kim7@wiu.edu). I will respond to your e-mail within 48 hours.

Prerequisite
ENGR 105: Engineering Graphics/Computer-Aided Drafting (CAD)
Textbook

Software
Autodesk AutoCAD / Revit Architecture

Instructional Format
This course consists of lectures, lab assignments, personal project, and exams. It is mandatory to attend all scheduled class and lab sessions. Every student is expected to come to class prepared and to actively participate in our learning environment.

Assignments
Lab assignments are designed to understand residential construction projects and practice the blueprint reading and computer drawing. Each assignment will carry a due date and time.
1. To receive full point on the lab assignment, all required files should be submitted by the deadline; meeting the deadline is critical in the construction industry.
2. Each progress assignment should be submitted with the PDF format on Western Online on time unless otherwise specified.
3. Late submission: 0.5 points will be deducted per day as a penalty. If a student turns in more than 5 days late, he/she will receive 0.5 points.
4. Make-up homework due to an excused absence will be accepted until 1 week past the due date. If a make-up assignment is turned in later than a week, he/she will receive 0.5 points. Documentation is required for an excused absence.
5. There will be several quizzes during the semester, and if you miss the class, you will miss the quiz too. There will be no make-up quiz.

Portfolios
1. Students are required to submit the portfolios for the AutoCAD and Revit as the part of tests.
2. Although a student submits the portfolios on time, it doesn’t mean that the student is excused from late submissions of the each lab assignment. Students will receive points separately for lab assignments and the portfolio.

Tests and Final Exam
There will be two tests and one final comprehensive exam. Each exam consists of multiple choices, short essay, and portfolios covered during the classes. No books, notes, or other materials are allowed during the test.
Final Examination: Wednesday, December 14, 2016 @ 01:00 P.M.

Personal project
The objective of the final project is to develop the design that satisfies the multiple design requirements discussed during the classes. You will develop a set of drawings that incorporates programmatic and site elements, but also integrates aesthetic, spatial and formal requirements into your design.

Students are required to submit each progress assignment and the final project portfolio on time.
1. Instructor will check all progress assignments for the final project.
2. Each progress assignment should be submitted with the PDF format on Western Online on time.
3. Point deduction for late submission will be the same as the policy described above under ‘Assignments’.
**Time Commitments:**
1. Students should not assume that they can finish the assignments only during class hours.
2. It is each student's responsibility to find extra time to complete each assignment outside of scheduled class time using open lab hours or other computer resources (KH107, Stipes Hall, Library, etc.).
3. All students have the same resources on campus, so special consideration won't be given to anyone who claims to have time conflicts with open lab hours.
4. All problems (such as file loss, computer crash, PDF conversion, printer problem, etc.) should be part of your plan.
5. Student should keep all class related files (Revit file, PDF file, etc.) at a safe place (such as thumb drive, email server, etc.) and possibly keep multiple copies just in case. Keeping all class related files is student’s responsibility.

**Grading and Course Logistics**
The final grade will be based on a combination of the lab assignment, portfolios, project and the final exam grade, as follows:

<table>
<thead>
<tr>
<th>Assigned Points</th>
<th>Grading Scale</th>
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<tbody>
<tr>
<td>Lab assignments + Quizzes</td>
<td>A  93 and above</td>
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<tr>
<td>Test 1</td>
<td>A'  90-92</td>
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<tr>
<td>Test 2</td>
<td>B+  87-89</td>
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<tr>
<td>Portfolio 1 (AutoCAD)</td>
<td>B  83-86</td>
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<tr>
<td>Portfolio 2 (Revit)</td>
<td>B-  80-82</td>
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<tr>
<td>Final Project</td>
<td>C+  77-79</td>
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<tr>
<td>Final Exam</td>
<td>C  73-76</td>
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<td></td>
<td>C-  70-72</td>
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<td></td>
<td>D+  67-69</td>
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<td>D  63-66</td>
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<td></td>
<td>D-  60-62</td>
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<td></td>
<td>F  59 and below</td>
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</tbody>
</table>

Total 100 %

**Class Attendance**
Regular class attendance is mandatory. Understandably problems can occur so TWO misses are allowed with no penalty; no need to explain reasons to me. However, any student with more than TWO unexcused absences will have their grade lowered by ONE point for each missed class. If you anticipate having problems making it to class, I suggest you modify your schedule or whatever it takes to make it work. If you miss class, it is your responsibility to contact me or a classmate and get the material/information from that day. Documentation is required for an excused absence to be recorded.

Attendance will be checked twice; at the beginning of the lecture and at the end of the lab hour for each class. Two late appearances to class equal an absence. If a student leaves early without finishing the lab assignment given that day, he/she will be considered attending only half of the class. Two half-class attendances will be considered as one absence.
Classroom Policies
Disorderly conduct is prohibited under the Code of Student Conduct
(http://www.wiu.edu/provost/students). Disorderly conduct is defined as any behavior that can negatively affect the environment of a class including:
1) Eating, drinking, smoking or use of tobacco products during a class
2) Usage of a cell phone during a class
3) Sleeping during a class
4) Inappropriate computer usage during a class
5) Disturbing a classmate in any way during a class
6) An equivalent activity with above
Each violation will result in negative points of 1.0 in your final grading and the instructor can ask the students to leave the classroom.

Computer Usage
In this class, computers are used ONLY for class lab activities or the instructor’s approval, and the instructor will tell students when to turn on the computers. Computers have to be shut off during regular classes to prevent indiscreet usage of computers.

Class materials and grades
All class notes and grades will be posted at Western Online. You need to access to check your grades or print out the class notes before the beginning of the class.

Rules for Giving an Incomplete
WIU policy – A temporary symbol of I (Incomplete) for a course may be given only when a student, due to circumstances beyond his or her control, has been unable to complete the course requirements within the official limits of the term. The circumstances must be documented to the instructor’s satisfaction.

Academic Integrity
Preamble
Western Illinois University, like all communities, functions best when its members treat one another with honesty, fairness, respect, and trust. Students have rights and responsibilities (http://www.wiu.edu/provost/students/) and students should realize that deception for individual gain is an offense against the members of the entire community, and it is the student's responsibility to be informed and to abide by all University regulations and policies on Academic Integrity.

Plagiarism, cheating, and other forms of academic dishonesty constitute a serious violation of University conduct regulations. Students who engage in dishonesty in any form shall be charged with academic dishonesty.

It is a duty of faculty members to take measures to preserve and transmit the values of the academic community in the learning environment that they create for their students and in their own academic pursuits. To this end, they are expected to instill in their students a respect for integrity and a desire to behave honestly. They are also expected to take measures to discourage student academic dishonesty, to adjust grades appropriately if academic dishonesty is encountered, and, when warranted, to recommend that additional administrative sanctions be considered. Grading policies are the exclusive prerogative of the faculty; administrative sanctions are under the authority of the Director of Student Judicial Programs. This document provides policies and procedures to be followed when academic dishonesty is encountered.
Definitions of Academic Dishonesty
The following definitions and examples are not meant to be exhaustive. The University reserves the right to determine, in a given instance, what action constitutes a violation of academic integrity. (See www.wiu.edu/policies/acintegrity.php for complete descriptions of the following topics:

1. Plagiarism
   Fabrication and Falsification
   Cheating
   Complicity in Academic Dishonesty
   Abuse of Academic Materials
   Multiple Submissions

Reporting Academic Dishonesty
All members of the University community share the responsibility and authority to challenge and make known acts of apparent academic dishonesty. Any student, faculty member, or staff person who has witnessed an apparent act of student academic dishonesty, or has information that reasonably leads to the conclusion that such an act has occurred or has been attempted, has an ethical responsibility for reporting said act(s). Confronting and reporting academic dishonesty can be done in a variety of ways, and people should choose the manner most appropriate for the circumstances. Acts of apparent academic dishonesty that occur in the classroom should be reported directly to the course instructor, and/or the course instructor's Department Chair, and/or the instructor's College Dean. The Council on Admission, Graduation, and Academic Standards (CAGAS) or the Graduate Council will not accept or act upon anonymous reports, but will hold in strict confidence the identity of any person reporting a suspected instance of academic dishonesty, unless that person consents to having his/her identity revealed.

Students with disabilities
In accordance with University values and disability law, students with disabilities may request academic accommodations where there are aspects of a course that result in barriers to inclusion or accurate assessment of achievement. To file an official request for disability-related accommodations, please contact the Disability Resource Center at 309-298-2512, disability@wiu.edu or in 143 Memorial Hall. Please notify the instructor as soon as possible to ensure that this course is accessible to you in a timely manner.

Sexual Misconduct & Gender Non-Discrimination Policy (Title IX)
University values, Title IX, and other federal and state laws prohibit sex discrimination, including sexual assault/misconduct, dating/domestic violence, and stalking. If you, or someone you know, has been the victim of any of these offenses, we encourage you to report this to the Title IX Coordinator at 309-298-1977 or anonymously online at:http://www.wiu.edu/equal_opportunity_and_access/request_form/index.php. If you disclose an incident to a faculty member, the faculty member must notify the Title IX Coordinator. The complete Title IX policy is available at: http://www.wiu.edu/vpas/policies/titleIX.php.

Web address for student rights and responsibilities
http://www.wiu.edu/provost/students.php
Resolution of Problems
Should a problem occur, students should speak to their instructor first. If the problem is not resolved, meet with the chair of the department. If the problem continues to be unresolved, go to the College of Business and Technology’s Dean.

Students should observe the following sequence for the resolution of problems:
Student --- Instructor --- Chairperson --- Dean

Special Course Costs
Students of this course are required to pay a special course charge of $25 for each lab-related course in the Engineering Technology Department. This money is used to support the consumable items used during the course.

Payment of the course cost is a required portion of the class and must be paid after the second week of the semester but prior to your final exam. If you fail to pay your course cost, you will receive a grade of "I" for the course until the lab fee is paid or the university automatically changes the grade from "I" to "F" according to the University Policy. If the grade is changed to an "F", the grade will remain an F on your permanent transcript, regardless of payment.

Payments can be made to the Engineering Technology department office (Knoblauch Hall 135) any time after the beginning of the third week of classes. Also, for the convenience of the students, the instructor will announce one date that a staff member will visit the classroom to collect course charges en masse. It is recommended that students pay by check made out to "WIU". Likewise, the student should expect a receipt to serve as proof of payment.

If you have questions or concerns, please direct them to the staff in Knoblauch Hall 135 or call 309/298-1091."
Course Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic Covered</th>
<th>Assignments</th>
<th>Assessment Methods</th>
<th>Dept. Goal Addressed</th>
<th>Program/Course Objective Addressed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1</td>
<td>Course overview AutoCAD Setup: Title block &amp; Drawing architectural objects</td>
<td>AutoCAD: 1) Title Block 2) Architectural Objects</td>
<td>Lab &amp; Homework</td>
<td>3, 5, 6</td>
<td>1, 4, 5</td>
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<tr>
<td>Week 2</td>
<td>Unit 1: The design-construction sequence and the design professions</td>
<td>AutoCAD: FDN Plan</td>
<td>Lab &amp; Homework</td>
<td>2, 3, 5, 6</td>
<td>1, 2, 3, 4, 5</td>
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<td></td>
<td>Unit 2: Views AutoCAD: Layers / Foundation plan</td>
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<td>Week 3</td>
<td>Unit 3: Scales Unit 4: Alphabet of lines Unit 5: Use of symbols AutoCAD:</td>
<td>AutoCAD: Main Floor Plan Quiz: Scales and Line Symbols</td>
<td>Lab, Quiz &amp; Homework</td>
<td>2, 3, 5, 6</td>
<td>1, 2, 4, 5</td>
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<td>Plot style table / Floor plan</td>
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<td>Week 4</td>
<td>Unit 6: Plan views Unit 7: Elevations Unit 8: Sections and details AutoCAD:</td>
<td>AutoCAD: 1) Adding Door and Window 2) Adding Texts and Dims 3) Roof Plan</td>
<td>Lab, Quiz &amp; Homework</td>
<td>2, 3, 5, 6</td>
<td>1, 2, 4, 5</td>
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<td></td>
<td>Annotative texts and dimensions</td>
<td>Quiz: Plan, Elevation, Section and Detail.</td>
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<td>Week 5</td>
<td>Unit 9: Clearing and rough grading the site Unit 11: Site utilities AutoCAD:</td>
<td>AutoCAD: 1) Elevations 2) Electric Drawing Quiz: Civil Drawing</td>
<td>Lab, Quiz &amp; Homework</td>
<td>2, 3, 5, 6</td>
<td>1, 2, 4, 5</td>
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<td></td>
<td>Elevations and Electric plan</td>
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<td>Week 6</td>
<td>Unit 12: Footings Unit 13: Foundation walls Unit 14: Drainage, insulation,</td>
<td>AutoCAD: 1) Section 2) Site Plan Quiz: FDN</td>
<td>Lab, Quiz &amp; Homework</td>
<td>2, 3, 5, 6</td>
<td>1, 2, 4, 5</td>
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<td>and concrete slabs AutoCAD: Sections and Site plan</td>
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<td>Week 7</td>
<td>Test 1 Portfolio 1: AutoCAD</td>
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<td>Lab and Exam</td>
<td>2, 3, 4, 5, 6, 7</td>
<td>1, 2, 3, 4, 5, 6</td>
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<td>Week 8</td>
<td>Unit 15: Framing systems Unit 16: Columns, Piers, and Girders Unit 17: Floor</td>
<td>Revit: 1) Title Block and Architectural Objects 2) Floor Plans Quiz:</td>
<td>Lab, Quiz &amp; Homework</td>
<td>2, 3, 5, 6</td>
<td>1, 2, 3, 4, 5, 6</td>
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<td>framing Unit 20: Roof construction terms Revit Architecture: Wall modeling</td>
<td>Superstructure</td>
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*Due to nature of this class, the schedule is subject to change.*
<table>
<thead>
<tr>
<th>Week</th>
<th>Topics</th>
<th>Software / Projects</th>
<th>Assessments</th>
<th>Lab, Quiz &amp; Homework</th>
<th>1, 2, 3, 4, 5</th>
</tr>
</thead>
</table>
| Week 9 | Unit 25: Windows and Doors  
Unit 26: Exterior wall coverings  
Unit 27: Wood decks  
Unit 28: Finishing site work  
Revit Architecture: Foundation and Floor plan | Revit: Main Floor & FDN Plan  
Quiz: Exterior Closure and Finishes | Lab, Quiz & Homework | 2, 3, 5, 6 | 1, 2, 3, 4, 5 |
| Week 10 | Unit 30: Stairs  
Unit 31: Insulation and roof finishing  
Unit 32: Cabinets  
Unit 34: Town house construction  
Revit Architecture: Kitchen and fixture layout | Revit:  
1) Windows and Doors  
2) Kitchen and Fixture Layout  
Quiz: Interior Finishes | Lab, Quiz & Homework | 2, 3, 5, 6 | 1, 2, 3, 4, 5 |
| Week 11 | Unit 35: Plumbing, heating, and air conditioning  
Unit 36: Electrical  
Revit Architecture: Electric plan | Revit:  
1) Roof Plan  
2) Electric Plan  
Quiz: MEP systems | Lab, Quiz & Homework | 2, 3, 5, 6 | 1, 2, 3, 4, 5 |
| Week 12 | Test 2  
Portfolio 2: Revit | Lab and Exam | 2, 3, 4, 5, 6, 7 | 1, 2, 3, 4, 5, 6 |
| Week 13 | Final Project Kick-off / Project Overview | Final Project: Developing Floor Plans | Final Project & Homework | 1, 2, 3, 4, 5, 6, 7 | 1, 2, 3, 4, 5, 6 |
| Week 14 | Thanksgiving Break | | | | |
| Week 15 | Final Project | Final project: Developing Floor Plans, and Roof Plans | Final Project & Homework | 1, 2, 3, 4, 5, 6, 7 | 1, 2, 3, 4, 5, 6 |
| Week 16 | Final Project  
*Final Project is due Wednesday, Dec 7, 2:50PM | Final project: Developing Elevations | Final Project & Homework | 1, 2, 3, 4, 5, 6, 7 | 1, 2, 3, 4, 5, 6 |
| Week 17 | **Final Examination:** Wednesday, December 14, 2016 @ 01:00 P.M. | | | | |