



Architectural and Engineering Design Department (AEDD) South Portland, Maine 04106

Title: Basic Architecture CAD
Credit Hours: 3
Instructor: Geneva Kimball

Catalog Number: AEDD165
Total Contact Hours: 60 Lecture: 30 Lab: 30
Email: gkimball@smccme.edu

Course Syllabus

Course Description

This CAD based course offers the fundamentals of architectural design as it relates to light wood construction consistent with, but not limited, to residential construction. Designed for the student with prior design and CAD courses, this course introduces building elements, CAD techniques, building code requirements, and professional and regional influences.

Co-requisite(s): AEDD-100 Print Reading or AEDD-105 CAD Graphics

Course Objectives

1. Demonstrate an acceptable understanding of graphic representation as it relates to architecture.
2. Demonstrate understanding of construction methods and materials.
3. Demonstrate sound planning techniques, working within material limits and code allowances.

Topical Outline of Instruction

Architectural graphic standards AIA
Floor plans – schematic, design development and construction documentation
Foundations – pier, slab and t-type
Floor framing plans and detailing
Wall section detailing
Roof section detailing
Building sections
Stairs
Thermal and moisture protection
Doors and windows
Kitchen and bath design and codes
Elevations

Course Requirements

1. Active attendance
2. Active participation
3. Completion of all assignments

Text, Tools, and/or Supplies

BUILDING CONSTRUCTION ILLUSTRATED / Francis D.K. Ching (any edition)
Technical Graphics Standards Manual, SMCC AEDD Department, pdf on R:/ drive and portal
Architectural Scale
Optional but useful:
Mechanical Pencil(s) and Eraser(s)
Circle Template
Lettering Template

Student Evaluation and Grading

40% worksheets, 20% exams, 30% Design Project, 10% attendance
See department policies below.

Department Policies

1. Grading – grading policies may vary by instructor

A	4.00	9.3-10
A-	3.67	9-9.2
B+	3.33	8.7-8.9
B	3.00	8.3-8.6
B-	2.67	8-8.2
C+	2.33	7.7-7.9
C	2.00	7.3-7.6
C-	1.67	7.0-7.2
D+	1.33	6.7-6.9
D	1.00	6.3-6.6
F	0.00	>6.3 FAILURE
P	NONE	Equivalent to a “C” (2.0) or better
AF	0.00	Administrative Failure
I	None	Incomplete*
W	None	Official Withdrawal from course
NS	None	Failure to appear for any session of class

*Incomplete grades are given at the discretion of the Instructor. Incomplete grades may only be given after an incomplete contract between the instructor and student has been signed and submitted to Enrollment Services.

2. Late work will drop a letter grade per week late. Assignments turned in more than 4 weeks late will receive a 6/10 which is a failing grade.
3. Any student who submits work done by someone else will, at the least, receive a failing grade for that assignment and must redo the assignment. Should the instructor see fit, the student involved will be reported to the Dean of Students in violation of the Student Code of Conduct which will result in the student receiving a failing grade for the class.
4. Any activity, conversation or behavior that is not considered appropriate for the classroom or professional environment will result in the request that the behavior cease. If it does not, the student(s) involved will be dismissed from class and referred to the dean of Students and may not return to class until they have met with the Dean of Students, Department Chair and Instructor.
5. Use of cell phones and other electronic devices during class which are not for class purposes is prohibited. Cell phones **do not** need to be turned off, but should be set to **vibrate** or **silenced** during class. Class time is for class activities only.
6. Personally owned computers are not required to be successful in this program, however they are highly recommended. All students have access to free Autodesk software downloads available at <http://students.autodesk.com/>. If you do not have access to your own computer to complete your homework, computer labs are available during open building hours 8:00 AM – 9:30 PM M-F. At least 3-6 hours of homework time outside each 3 credit course is normal and to be expected.
7. Hours for faculty members are posted on the faculty member’s door. You can make appointments with faculty via e-mail.
8. Only SMCC E-mail addresses will be used by faculty to communicate to students. E-mails between student and faculty must meet the following criteria: must have a subject line which refers to the class code; must be signed with student’s full name. See the full e-mail etiquette policy in R:\General\Department Policies.
9. Attendance policy – attendance is taken at the beginning of each class. If the student is late for a class it is the responsibility of the student to review their attendance and make sure that they have been marked Tardy rather than Unexcused Absence. Excused absences can be granted if prior communication is made with the instructor. The decision to excuse an absence is determined by the

individual instructor. Students may withdraw from a class up to the twelfth week into the semester to avoid a failing grade. Make note of the class withdrawal deadline date and time in the student handbook and academic calendar on the portal.

- a. **For classes that meet once a week** – no more than 3 unexcused absences are allowed **total**, no more than 2 classes may be missed **in a row**. A student who misses a class will receive a warning e-mail; if two weeks in a row are missed without communication the student will receive an Administrative Fail (AF) for the class. A student who has a total of 3 classes will receive an AF.
 - b. **For classes that meet twice a week** – no more than a total of 5 unexcused absences are allowed; no more than 3 classes may be missed **in a row**. If a student fails to attend two classes in a row he/she will receive a warning e-mail. If no correspondence has been made and the student fails to show for the third class in a row, the student will receive an AF for the class. Students that have missed a total of 5 classes will receive an AF.
10. All students are expected to take notes and maintain them for reference purposes throughout the class and future classes. Students must also be responsible for their own backup of course work. If work is lost it is NOT the AEDD's responsibility to replace or find it.
11. All work must follow the Technical Graphics Standards Manual for the AEDD. A copy of the manual has been placed in R:\Standards Various Sources.

Syllabus Statement general

End-of-Course Evaluation

In order to gain access to final course grades, students must complete evaluations for each course attended at SMCC. Evaluations are submitted online and can be accessed through the student portal site. Students can access the course evaluation report beginning two weeks before the end of classes. The deadline for submission of evaluations occurs 24 hours after the last day of classes each semester. Instructors will announce when the online course evaluation is available.

ADA (Americans with Disabilities Act):

Southern Maine Community College is an equal opportunity/affirmative action institution and employer. For more information, please call [207-741-5798](tel:207-741-5798). **If you have a disabling condition and wish to request accommodations in order to have reasonable access to the programs and services offered by SMCC, you must register with the Disability Services Coordinator, Sandra Lynham, who can be reached at 741-5923.** Further information about services for students with disabilities and the accommodation process is available upon request at this number. Course policies about online testing are modified to suit each individual's accommodations.

Student printing policy (new):

This policy identifies the cost per page for black and white as well as color printing in varying page sizes. Specifics of the policy are outlined below:

Per Page Costs

Each semester students receive a \$20 printing credit. The balance resets at the end of the semester and any remaining credits are removed. The cost varies depending upon page size and whether printing is done in black and white or color.

- a. There is a \$0.10 per page fee for standard 8.5" by 11" black and white documents.
- b. The reverse sides of duplex (double-sided) documents are free.
- c. There is a \$.50 per page fee for standard 8.5" by 11" color documents.
- d. There is a \$.20 per page fee for 8.5" by 14" (legal) or 11" by 17" (tabloid) black and white documents.
- e. There is a \$1.00 per page fee for 8.5" by 14" (legal) or 11" by 17" (tabloid) color documents.

Duplex charges (printing on both sides of a page) work in the following fashion: One page is \$0.10, two pages are \$0.10, three pages are \$0.20, and four pages are \$0.20, etc. The flipsides are free, but another sheet of paper is \$0.10. Please be aware that a document with any color at all (when printed to a color printer) will by default be printed in color. You are responsible for setting the print job to print black and white if you do not need color. For directions, please go to the IT Help tab in My SMCC.

How does it work?

The College's pay-for-print system monitors printing on all printers (including those in general access labs, library printers, the Academic Achievement Center, Noisy Lounge and technology labs). Students can check the number of pages they have printed by using the Printing Balance tool available on SMCC computers (located in the lower right corner of the screen, near the clock). Departments with work study students who need to print documents for the department should contact the HelpDesk at 741-5696 to have a special account set up.

Refunds

Print jobs are eligible for a refund in the event of mechanical or electronic error on the part of the printer, print server, or software used to submit the job. Jobs are not eligible for a refund in cases where the job was not set up correctly, was submitted multiple times, or the student is not satisfied with the result. To request a refund, please bring the offending print to the IT Department in the basement of the Ross Technology Center. Refunds will be granted in the form of a credit to the student's account.

Why is SMCC charging for printing?

The pay-for-print system is an effort to control escalating printing costs. Charging for printing helps offset the increasing cost of supplies and encourages students to conserve resources. To find ways to reduce your printing charges, please go to the IT Help tab on My SMCC. If you have questions about the pay-for-printing policy or your printing charges, please contact the HelpDesk at 741-5696 or send an email to helpdesk@smccme.edu.

Be sure to log OUT of the system when you've finished your printing, to prevent unauthorized access to your account.

Add-Drop Policy

Students who drop a course during the one-week "add/drop" period in the fall and spring semesters and the first three days of summer sessions receive a 100% refund of the tuition and associated fees for that course. Please note any course that meets for less than the traditional semester length, i.e., 15 weeks, has a pro-rated add/drop period. There is no refund for non-attendance.

Withdrawal Policy

A student may withdraw from a course only during the semester in which s/he is registered for that course. The withdrawal period is the second through twelfth week of the fall and spring semesters and the second through ninth week of twelve-week summer courses. This period is pro-rated for shorter-length courses. To withdraw from a course, a student must complete and submit the appropriate course withdrawal form, available at the Enrollment Service Center (no phone calls, please). The designation "W" will appear on the transcript after a student has officially withdrawn. A course withdrawal is an uncompleted course and may adversely affect financial aid eligibility. Failure to attend or ceasing to attend class does not constitute withdrawal from the course. There is no refund associated with a withdrawal.

Plagiarism Statement

If an instructor suspects that a student has knowingly committed a violation defined in the Maine Community College System Policy on Student Grade Appeals and Academic Misconduct, the instructor has the authority to review the alleged misconduct and determine the grade that the student should receive for the assignment and the course. The instructor may assign a failing grade for the assignment or course and may require the student to complete additional work for the course. The instructor may consult with the department chair and/or the College's

chief academic officer prior to making such decisions. If a student seeks to challenge an instructor's determination, the student should submit a grade appeal. Grade appeal forms are available in the Advising Office on the South Portland Campus or in the administrative offices in the Learning Commons on the Midcoast Campus. An instructor may also refer the matter to the College's disciplinary officer for review under the procedures of the MCCS Student Code of Conduct.

Lesson Plan

Unit 1 Introduction to course content

- Syllabus and lesson plan
- Graphics Standards
- Example plans
- House structural anatomy and terminology

HOMEWORK: **Drawing 1, Minimum House Design**

Worksheet 1A, Reading Architectural Scales
Worksheet 1B, Working with Drawing Ratios

Reading: Ching, Chapters 1 through 3
Technical Graphics Standards Manual, all
sections relating to Architectural Standards

Unit 2 Foundations: Pier

Introductions to the three basic foundation systems: Pier, Slab and T-Type

HOMEWORK: **Worksheet 2A – Pier Foundations Worksheet***

*Graphics Standards Practice as Needed

Unit 3 Foundations: Slab

HOMEWORK: **Worksheet 2B – Slab Foundations**

Unit 4 Foundations: T-Type

HOMEWORK: **Worksheet 2C – T-Type Foundation Plan and Detail**

Unit 5 Application of Foundations

HOMEWORK: **Assignment 2D – Foundation Plan and Details for the Floor Plan “Modern Home No. 144”**

Unit 6 Floor framing: lumber

HOMEWORK: **Worksheet 3A – Floor Framing Plan for Assignment 2D**
Worksheet 3B – Floor Framing Materials Worksheet

Floor Framing: Engineered

Worksheet 3C – Engineered Wood materials list

Reading: Ching, Chapter 4

EXAM	<u>FOUNDATIONS & FLOOR FRAMING EXAM</u>
Unit 7	<u>Wall Construction</u> HOMEWORK: Worksheet 4A – Wall Framing Elevation Reading: Ching, Chapter 5
Unit 8	<u>Wall Sections</u> HOMEWORK: Worksheet 4B – Wall Section
Unit 9	<u>Stairs</u> HOMEWORK: Worksheet 5A – Stairs Worksheet 5B – Add openings for stairs and chimney to floor framing plan Reading: Ching, Chapter 9 (9.02 to 9.12)
Unit 10	<u>Roof Construction, Thermal and Moisture Protection</u> HOMEWORK: Worksheet 6A – Add roof to the Wall Section 4B Reading: Ching, Chapters 6 and 7
Unit 11	<u>The Floor Plan</u> Typical residential living spaces and sizes – what kinds of rooms are in an average house? Critique of house plans. HOMEWORK: Worksheet 7A – Revit camp Revit Design Project 7B – Plan schematic
Unit 12	<u>Kitchens and Bathrooms</u> HOMEWORK: Revit Design Project 8A – add a kitchen and bathroom to the plan from 7B Reading: Ching, Chapter 9 (9.22 to 9.30)
Unit 13	<u>Doors and Windows</u> HOMEWORK: Revit Design Project 9A – Create a door and window schedule and tag all doors and windows from Worksheet 7B Reading: Ching, Chapter 8
Unit 14	<u>Elevations</u> HOMEWORK: Revit Design Project 10A – Project the elevations from the plan and section information
Unit 15	<u>Applying Dimensions</u> HOMEWORK: Revit Design Project 11 – Apply dimensions to Design Project 7B Reading: Technical Graphics Standards, pages on architectural dimensioning
FINAL	<u>FINAL EXAM</u>