

South Portland, Maine 04106

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Title: **Construction Design**

Catalog Number: **CONS 130**

Credit Hours: **3  
lab)**

Total Contact Hours: **60 hours (30 lecture, 30**

Instructor: **Meridith Comeau**

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## Course Syllabus

### Course Description

This course is the study of residential design. The student will learn how to properly generate the plans for a single family residence using Parametric modeling software. The student will learn how to draw all plans necessary for a given project to be constructed according to all building and energy codes. The student will learn how to evaluate a given piece of property and design a home for the property that uses the least amount of energy as possible.

### Course Objectives

After successfully completing the course, the student will be able to:

1. Generate plans for a residential home using computer aided design.
2. Design all floor plans necessary to construct a single family residence according to the International Residential Code and the Maine Energy Building Standards.
3. Generate cross sections of various building sections.
4. Interpret the information contained in a full set of working drawings.
5. Design a building with materials that reduce the carbon footprint of the proposed building.

### Course Requirements

The content of this course will be presented in a laboratory-classroom situation. Students are expected to participate in all field assignments and attend all classes. It is the student's responsibility to read and sign the Construction Technology Department Policy. **THIS CLASS WILL FOLLOW ALL DEPARTMENT POLICY RULES.**

### Safety

Students will be required to adhere to all department policies regarding safety.

### Grading

5%	Attendance
5%	Print reading
20%	Video Series
10%	Sketching
10%	Estimating and Materials
30%	Final Project
20%	Exam

### **Text, Tools and/or Supplies**

Handouts and videos will be provided by the instructor. Students are required to provide personal safety equipment, a calculator, and a flash drive.

### **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 Syllabus Statement**

Southern Maine Community College is an equal opportunity/affirmative action institution and employer. For more information, please call 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**. There will be some documentation for your teachers that must be supplied before accommodations can be given. Further information about services for students with disabilities and the accommodation process is available upon request at this number.

### **SMCC Pay-for-Print Policy**

Students can print 150 pages per semester free of charge. If you print over 150 pages, you will be charged 10 cents per page to your student billing account for tuition and fees.

Leftover pages from each semester will not be rolled over to the following semester.

The College's pay-for-print system monitors printing on all public printers (i.e. those in general access labs, library printers, the Academic Achievement Center, Noisy Lounge and technology labs). Each time you log-in to the system, the print station displays the remaining print quota. Once the printing quota has been exceeded, users will be charged \$ 0.10 per page or \$.05 per side if the printer prints on both sides on their student accounts on a monthly basis. Color printouts will be charged at 11 page units. This means each color printout will count as 11 pages toward the quota and will cost \$1.10.

### **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**

Adherence to ethical academic standards is obligatory. Cheating is a serious offense, whether it consists of taking credit for work done by another person or doing work for which another person will receive credit. Taking and using the ideas or writings of another person without clearly and fully crediting the source is plagiarism and violates the academic code as well as the Student Code of Conduct. If it is suspected that a student in any course in which s/he is enrolled has knowingly committed such a violation, the faculty member should refer the matter to the College's Disciplinary Officer and appropriate action will be taken under the Student Code of Conduct. Sanctions may include suspension from the course and a failing grade in the course. Students have the right to appeal these actions to the Disciplinary Committee under the terms outlined in the Student Code of Conduct.

## UNIT OUTLINE

- Unit 1      Introduction to course content  
Syllabus and lesson plan  
Day 1 Introduction to Construction Design – Print Reading and scales  
**HOMEWORK:**      **01A – Architectural scales**  
                                 **01B – Conversions – Areas – Volumes**
- Unit 2      Print Reading  
Day 1 – Conversions, Areas and Volumes  
**HOMEWORK:**      **01C – Architectural Drawings**  
Day 2 – Architectural Drawings  
**HOMEWORK:**      **01D – Residential Construction Details**
- Unit 3      Print Reading  
Day 1 – Residential Construction documents  
**HOMEWORK:**      **01E – Residential Construction Codes and Material limits**
- Unit 4      Video Series 1 - Camp Model  
Day 1 – Introduction to Revit and Instruction  
  
Day 2 – Lab Video Series – Ear buds required  
**HOMEWORK:**      **02A – Video Series 1 – Camp Model**
- Unit 5      Video Series 2 - Annotation  
Day 1 – Instruction and demonstration  
  
Day 2 – Lab Video Series – Earbuds required  
**HOMEWORK:**      **02B – Video Series 2 – Annotation**
- Unit 6      Sketching  
Day 1 – Slab and Pier  
**HOMEWORK:**      **03A – Slab plan and detail**  
  
Day 2 – T-Type Foundations  
**HOMEWORK:**      **03B – Pier plan and detail**
- Unit 7      MIDTERM and Video Series 3  
Day 1 – MIDTERM  
  
Day 2 – Video Series 3 – Slab – Earbuds required  
**HOMEWORK:**      **04A – Video Series 3 – Slab**
- Unit 8      Video Series 4 and 5  
Day 1 – Video Series 4 – Pier – Earbuds required  
**HOMEWORK:**      **04B – Video Series 4 – Pier**  
  
Day 2 – Video Series 5 – T-Type – Earbuds required  
**HOMEWORK:**      **04C – Video Series 5 – T-Type**
- March Break**
- Unit 9      Estimating and Materials  
Day 1 – Floor Framing  
**HOMEWORK:**      **05A – Estimating and Materials – Floor Framing**

Day 2 – Wall framing

**HOMEWORK: 05B – Estimating and Materials – Wall framing**

Unit 10

Estimating and Materials Cont.

Day 1 – Roof Framing

**HOMEWORK: 05C – Estimating and Materials – Roof Framing**

Day 2 – Stairs - Earbuds required

**HOMEWORK: 05D – Video Series 6 – Stairs**

Unit 11 FP

Final Project

Day 1 – Designing a good floor plan – review of *E-plans.com* house plans

**HOMEWORK: 06A – Scaled floor plan and elevations sketch**

Day 2 – Project set-up

Creating a project template from CAMP project to use for final project

Unit 12 FP

Kitchens and Bathrooms

**Day 1 – Kitchen lecture**

**HOMEWORK: 06B – Final Project Model**

**Day 2 – Bath Lecture**

**HOMEWORK: 06B – Final Project Model**

Unit 13 FP

Doors and Windows

**Day 1 – Doors and Windows**

**HOMEWORK: 06B – Final Project Model**

**Day 2 – Lab**

**Complete and submit 06B – Final Project Model – See due dates on portal**

Unit 14 FP

Annotation of final project

Day 1 – Lab, demonstration and instruction as needed

**HOMEWORK: 06C – Final Project Annotation**

Day 2 – Lab, demonstration and instruction as needed

**HOMEWORK: 06C – Final Project Annotation**

Unit 15 FP

Annotation of final project

Day 1 – Lab, demonstration and instruction as needed

**HOMEWORK: 06C – Final Project Annotation**

Day 2 – Lab, demonstration and instruction as needed

**HOMEWORK: 06C – Final Project Annotation**

Unit 16

Final Project and FINAL EXAM

Day 1 – Lab and review

**06C – Final Project Annotation is due**

Day 2 – **Final Exam**

<b>Assignments</b>	<b>Due Date</b>
01A - Print Reading -Architectural Scales	Monday 1/25
01B - Print Reading - Conversions, areas and volumes	Wednesday 1/27
01C - Print reading - Architectural drawings	Monday 2/1
01D - Print Reading - Residential Construction details	Wednesday 2/3
01E - Print Reading - Residential Construction codes and Materials limits	Monday 2/8
02A - Video Series 1 - Camp Model	Wednesday 2/10
02B - Video Series 2 - Annotation	Wednesday 2/17
03A - Sketched Slab plan and detail	Monday 2/22
03B - Sketched Pier plan and detail	Wednesday 2/24
Midterm	Monday 2/29
03C - Sketched T-Type plan and detail	Wednesday 3/2
04A - Video Series 3 -Slab	Monday 3/7
04B-Video Series 4 - Pier	Wednesday 3/9
04C-Video Series 5 - T-Type	Wednesday 3/9
05A - Estimating and Materials - Floor Framing	Wednesday 3/23
05B - Estimating and Materials - Wall framing	Monday 3/28
05C - Estimating and Materials - Roof Framing	Wednesday 3/30
05D - Video Series 6 - Stairs	Monday 4/4
06A - Final Project Sketch	Wednesday 4/6
06B - Final Project - Model	Wednesday 4/13
06C - Final Project - Annotation	Monday 5/9
Final Exam	Wednesday 5/11

***Due Dates are estimates for the semester and subject to change. See class Portal for current and up-to-date due dates.***