

SPRINGFIELD TECHNICAL COMMUNITY COLLEGE

**ACADEMIC AFFAIRS**

Course Number: CIVL 120 Department: Civil Engineering Technology

Course Title: Architectural Design & Spec Semester: Spring Year: 1997  
1

**Objectives/Competencies**

<b>Course Objective</b>	<b>Competencies</b>
1. To provide the student with an understanding of architectural drafting techniques necessary to draw complete sets of construction documents for residential and light commercial structures.	1. Demonstrate proper use of drafting tools, parallel edge, triangles, architectural and engineering scales and mechanical drafting pencil. 2. Demonstrate hierarchy of lines used in drawings to distinguish materials and emphasize important parts of a drawing. 3. Demonstrate methods of dimensioning for frame and masonry structures. 4. Understand drafting standards used for frame, masonry and concrete structures. 5. Draw neat and accurate drawings. 6. Prepare an accurately dimensioned floor plan, foundation plan, construction details exterior and interior elevations.
2. Introduction to the design process and the utilization and relationship of interior spaces through use of schematic design.	1. Understand the minimum standards for useable interior building space in a residential structure.

Course Objective	Competencies
<p>3. Basic residential and light commercial construction methods and materials.</p>	<ol style="list-style-type: none"> <li>1. Identify types of materials used for frame construction; lumber sizes and uses and the difference between studs, sills, joists rafters and headers.</li> <li>2. Know how to determine the required sizes for lumber used for beams, joists and rafters.</li> <li>3. Identify types of materials used in masonry construction, block and brick.</li> <li>4. Identify types of construction used for concrete foundations and footings and methods of determining sizes of same.</li> <li>5. Understand and prepare door and window schedules for construction documents.</li> <li>6. Be able to read and interpret floor plans, foundation plans, construction details and elevations.</li> </ol>
<p>4. Basic energy conservation considerations; mechanical and electrical considerations.</p>	<ol style="list-style-type: none"> <li>1. Use of insulation and insulation values; how to do preliminary heat loss calculations for sizing of the heating system.</li> <li>2. Able to understand electrical symbols used on residential construction drawings and the different types of electrical equipment, types of switches, outlets, circuit breaker requirements and wiring.</li> <li>3. Able to recognize minimum requirements for plumbing and plumbing and piping fixtures.</li> <li>4. Read and interpret blueprints for electrical and plumbing work.</li> </ol>

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