

SPRINGFIELD TECHNICAL COMMUNITY COLLEGE

**ACADEMIC AFFAIRS**

Course Number: ARBT-110 Department: \_\_\_\_\_

Course Title: Building Codes and Principles Semester: Spring Year: 2014

<b>Course Objective</b>	<b>Competencies</b>
<p>1. To introduce students to the new International Building Code, its origins, history and evolution</p> <p>2. To examine the issues of energy efficiency and environmental impact of our built environment.</p> <p>3. To familiarize students with the origins, properties and uses of the most common materials used in construction.</p>	<p>1. Students will learn specific applications of the Building Code as a minimum standard designed for structural integrity and occupant safety.</p> <p>2. Students will understand the origins of ancient codes dating back to 1800 BC.</p> <p>3. Students will learn about the evolution of today's modern Building Code from the early 20<sup>th</sup> Century through today.</p> <p>1. Students will become familiar with LEED (Leadership in Energy Efficient Design) Certification and its application in today's construction.</p> <p>Students will see how life cycle costing determines the value of different energy efficient methods.</p> <p>1. Students will discuss and become knowledgeable of the properties of:</p> <ul style="list-style-type: none"><li>a. concrete and its components</li><li>b. wood and wood technology</li><li>c. steel and plastics</li><li>d. roofing and weather protection</li><li>e. insulation and energy saving materials</li></ul> <p>2. Students will become familiar with fenestration and a variety of windows and doors.</p>

Course Objective	Competencies
<p>4. To examine soil types and their impact on construction projects.</p> <p>5. To familiarize students with the major structural components of a building.</p> <p>6. To explore the difference between Building Code and Zoning Regulation related issues.</p>	<p>1. Students will be able to identify the four major soil types and be able to discuss important characteristics of each type.</p> <p>2. Students will learn how soil types influence drainage and building support.</p> <p>1. Students will understand the difference between live loads, dead loads, and dynamic loads.</p> <p>2. Students will understand how beams, joists, girders, columns, studs and rafters are used as structural components.</p> <p>3. Students will become familiar with span tables in calculating floor joists and rafter dimensions.</p> <p>1. Students will learn about a variety of zoning types including residential, general business and industrial.</p> <p>2. Students will examine how a buildings use, location, and size are influenced by zoning regulations.</p>