

SPRINGFIELD TECHNICAL COMMUNITY COLLEGE

**ACADEMIC AFFAIRS**

Course Number: CIVL 430 Department: Civil Engineering Technology

Course Title: Transportation Engineering Semester: Spring Year: 1999

**Objectives/Competencies**

<b>Course Objective</b>	<b>Competencies</b>
1. Students will understand the basics of earthwork as related to road/highway work.  2. Students will understand the fundamentals of highway geometric design.	1. Students will be able to demonstrate earthwork calculations using: a. The Borrow-Pit method. b. The Average End Area method. c. The Prismoidal Formula. d. The Planimeter. 2. Students will be able to draw cross-sections using the coordinate method. 3. Students can demonstrate the marking of grade-stakes.  1. Students will be able to demonstrate the ability to design the following: a. Simple Horizontal Curve. b. Compound Horizontal Curve. c. Simple Vertical Curve. d. Compound Vertical Curve. e. The Passing of a Vertical Curve through a fixed point. 2. Students will be able to calculate both stopping and

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<p>3. Students will understand the basics of pavement thickness design.</p>	<p>passing right distances.</p> <ol style="list-style-type: none"> <li>1. Students will be able to identify the material components of both flexible and rigid pavements.</li> <li>2. Students will be able to make basic pavement thickness calculations for flexible pavements using:               <ol style="list-style-type: none"> <li>a. The "Full-Depth" method.</li> <li>b. The Conventional Method.</li> </ol> </li> <li>3. Students will be able to make basic pavement thickness calculations for rigid (Portland Cement Concrete) pavements.</li> </ol>
<p>4. Students will understand the fundamentals of parking lot design.</p>	<ol style="list-style-type: none"> <li>1. Students will demonstrate parking lot lay outs using current criteria.</li> </ol>
<p>5. Students will understand the fundamentals of intersection design based on AASHTO criteria.</p>	<ol style="list-style-type: none"> <li>1. Students will prepare drawings of:               <ol style="list-style-type: none"> <li>a. At-grade intersections.</li> <li>b. Grade separations.</li> </ol> </li> </ol>