



El Camino College  
COURSE OUTLINE OF RECORD – Official

<b>Course Acronym:</b>	CTEC
<b>Course Number:</b>	502
<b>Descriptive Title:</b>	Basic Forklift Operation
<b>Division:</b>	Industry and Technology
<b>Department:</b>	Construction Technology
<b>Course Disciplines:</b>	Construction Technology
<b>Catalog Description:</b>	In this noncredit course, students learn basic safety and operation of forklifts including lifting principles, load rating, stability, and operation techniques.
<b>Prerequisite:</b>	
<b>Co-requisite:</b>	
<b>Recommended Preparation:</b>	Possession of a valid California Driver's License or equivalent
<b>Enrollment Limitation:</b>	
<b>Hours Lecture (per week):</b>	20
<b>Hours Laboratory (per week):</b>	10
<b>Outside Study Hours:</b>	2
<b>Total Course Hours:</b>	30
<b>Course Units:</b>	0
<b>Grading Method:</b>	Pass/No Pass only
<b>Credit Status:</b>	Non Credit
<b>Transfer CSU:</b>	No
<b>Effective Date:</b>	
<b>Transfer UC:</b>	No
<b>Effective Date:</b>	
<b>General Education: ECC</b>	
<b>Term:</b>	
<b>Other:</b>	
<b>CSU GE:</b>	
<b>Term:</b>	
<b>Other:</b>	
<b>IGETC:</b>	
<b>Term:</b>	
<b>Other:</b>	

<p><b>Student Learning Outcomes:</b></p>	<p><b>SLO #1 Developing a Plan</b></p> <p>Upon completion of this course, students will be able to develop a plan for the safe operation and procedure for operating a forklift.</p> <p><b>SLO #2 Safe Operation</b></p> <p>Upon completion of this course, students will be able to demonstrate the ability to safely operate a forklift.</p> <p><b>SLO #3 Recognition and Application of Forklifts</b></p> <p>Upon completion of this course, students will be able to recognize the various types of forklifts and understand their application</p>
<p><b>Course Objectives:</b></p>	<ol style="list-style-type: none"> <li>1. Identify all operational and safety components on the forklift.</li> <li>2. Perform a pre-operational inspection as prescribed by the Occupational Safety and Health Administration (OSHA) in order to evaluate and predict safety hazards.</li> <li>3. Demonstrate the following: <ol style="list-style-type: none"> <li>a. Turning a forklift on and off</li> <li>b. Starting and stopping</li> <li>c. Raising and lowering lift</li> <li>d. Driving in forward and reverse direction</li> <li>e. Driving up and down a ramp with a load</li> <li>f. Driving in forward and reverse</li> <li>g. Slings a suspended load</li> </ol> </li> <li>4. Correctly and safely compensate if forklift tips.</li> <li>5. Calculate load capacity by referring to data plate.</li> <li>6. Interpolate load center rating with a variety of conditions</li> <li>7. Judge and estimate the number of maneuvers required to place a 20ft beam through a 16 foot entrance.</li> </ol>
<p><b>Major Topics:</b></p>	<p><b>I. Introduction to the Forklift (2 hours, lecture)</b></p> <ol style="list-style-type: none"> <li>A. History of lift truck industry</li> <li>B. Safety requirements</li> <li>C. Category and use of equipment</li> <li>D. Driving skills</li> <li>E. Characteristics of a forklift</li> <li>F. Types of forklifts</li> <li>G. Attachments</li> </ol> <p><b>II. Safety (3 hours, lecture)</b></p>

- A. OSHA standards
- B. Safety videos
- C. Safety tests

**III. Parts of a Forklift (2 hours, lecture)**

- A. Controls
- B. Forks
- C. Chassis
- D. Mast

**IV. Pre-Operational Check (2 hours, lecture)**

- A. Fluids
- B. Tires
- C. Leaks

**V. Data Plate (2 hours, lecture)**

- A. Mast and back tilt
- B. Capacity

**VI. Load Limitations (3 hours, lecture)**

- A. Center of gravity
- B. Static forces vs. dynamic forces
  - 1. Load characteristics
  - 2. Lift height
  - 3. Amount of tilt
  - 4. Tire condition
  - 5. Acceleration
  - 6. Travel speed
  - 7. Braking
  - 8. Surface condition

**VII. Forklift stability (3 hours, lecture)**

- A. Fulcrum
- B. Load
- C. Calculating stability

**VIII. Operation (10 hours, lab)**

- A. Start, stop
- B. Forward, reverse
- C. Loading and unloading
- D. Raising and lowering load
- E. Stacking
- F. Picking up a load
- G. Maneuvering
- H. Slings a load suspended from a chain or cable

	<p>I. Using the drum attachment J. Driving up and down a ramp</p> <p><b>IX. Liquefied Petroleum Gas (LPG) Forklifts (3 hours, lecture)</b></p> <p>A. Procedure for refueling or changing tank B. Characteristics of LPG</p> <ol style="list-style-type: none"> <li>1. Heavier than air</li> <li>2. Flammable</li> <li>3. Odor added</li> </ol>
<b>Total Lecture Hours:</b>	20
<b>Total Laboratory Hours:</b>	10
<b>Total Hours:</b>	30
<b>Primary Method of Evaluation:</b>	3) Skills demonstration
<b>Typical Assignment Using Primary Method of Evaluation:</b>	In a class setting, safely pick up and transport a pallet of ceramic tiles 20 yards and then stack it on top of another pallet.
<b>Critical Thinking Assignment 1:</b>	In a three- to five-minute oral presentation explain what the stability triangle is and its importance for the safe operation of a forklift.
<b>Critical Thinking Assignment 2:</b>	In a three- to five-minute oral presentation explain how to calculate forklift load center and why it is important to know the forklift load center.
<b>Other Evaluation Methods:</b>	<p>Matching Items Multiple Choice Objective Exam Performance Exams True/False</p>
<b>Instructional Methods:</b>	<p>Demonstration Lab Lecture Role play/simulation</p>
<b>If other:</b>	
<b>Work Outside of Class:</b>	<p>Answer questions Study</p>
<b>If Other:</b>	
<b>Up-To-Date Representative Texts:</b>	Not Applicable
<b>Alternative Texts:</b>	None
<b>Required Supplementary Readings:</b>	
<b>Other Required Materials:</b>	Instructor-generated materials and handouts
<b>Requisite:</b>	
<b>Category:</b>	

<b>Requisite course(s): List both prerequisites and corequisites in this box.</b>	
<b>Requisite and Matching skill(s): Bold the requisite skill. List the corresponding course objective under each skill(s).</b>	
<b>Requisite Skill:</b>	
<b>Requisite Skill and Matching Skill(s): Bold the requisite skill(s). If applicable</b>	
<b>Requisite course:</b>	California Driver's License
<b>Requisite and Matching skill(s): Bold the requisite skill. List the corresponding course objective under each skill(s).</b>	<p><b>In order for the student to be able to operate a forklift, it is recommended for a student to have a valid state driver's license and possess:</b></p> <ul style="list-style-type: none"> <li>• Basic motor vehicle operational knowledge</li> <li>• Understanding of motor vehicle laws</li> <li>• Knowledge of safe driving practices</li> <li>• Familiarity with typical automobile controls</li> </ul>
<b>Requisite Skill:</b>	or equivalent
<b>Requisite Skill and Matching skill(s): Bold the requisite skill. List the corresponding course objective under each skill(s). If applicable</b>	If a student does not possess a valid California Driver's License but has a valid military, out of state or international license, the student has the skills needed to enroll in this course.
<b>Enrollment Limitations and Category:</b>	
<b>Enrollment Limitations Impact:</b>	
<b>Course Created by:</b>	Ross Durand
<b>Date:</b>	05/04/2019
<b>Original Board Approval Date:</b>	05/18/2020
<b>Last Reviewed and/or Revised by:</b>	Ross Durand
<b>Date:</b>	11/20/2023
<b>Last Board Approval Date:</b>	01/17/2024
<b>Effective Term:</b>	FALL 2024