GAVILAN COLLEGE
5055 Santa Teresa Blvd
Gilroy, CA 95023

Course Outline

COURSE: JLE 153 DIVISION: 50 ALSO LISTED AS:

TERM EFFECTIVE: Spring 2023 CURRICULUM APPROVAL DATE: 03/14/2023

SHORT TITLE: TRAFFIC INTERMEDIATE

LONG TITLE: Traffic Collision Investigations Intermediate

Units	Number of Weeks	Type	Contact Hours/Week	Total Contact Hours
1	18	Lecture:	.5	9
		Lab:	1.75	31.5
		Other:	0	0
		Total:	2.25	40.5
		Total Learning Hrs:	58.5	

COURSE DESCRIPTION:

This course teaches the proper techniques for scene assessment, vehicle assessment, physical evidence, definitions and terminology, basic speed calculations, measuring and diagramming, and field and practical exercises in traffic collision investigations. This is a pass/no pass course. PREREQUISITE: JLE 100 POST Basic Certificate or Equivalent as determined by the Dean of Academy Instruction.

PREREQUISITES:
CAPP JLE 153 Requisite

COREQUISITES:

CREDIT STATUS: D - Credit - Degree Applicable

GRADING MODES
P - Pass/No Pass

REPEATABILITY: N - Course may not be repeated

SCHEDULE TYPES:
02 - Lecture and/or discussion
03 - Lecture/Laboratory
04 - Laboratory/Studio/Activity

STUDENT LEARNING OUTCOMES:

By the end of this course, a student should:

1. Identify and differentiate tire and friction marks, road scars and vehicle fluids at a mock traffic collision.
2. Identify the Nine Cell Matrix in traffic collisions.
3. Investigate a mock traffic collision and illustrate on a scaled diagram to include engineering features and physical evidence.

COURSE OBJECTIVES:

By the end of this course, a student should:

1. Posses the skills and techniques to respond, investigate and map a traffic collision to POST standards.

CONTENT, STUDENT PERFORMANCE OBJECTIVES, OUT-OF-CLASS ASSIGNMENTS

Curriculum Approval Date: 03/14/2023

LECTURE CONTENT:

I. Nine Cell Matrix (1 hour)
a. Phases of a traffic collision
i. Pre-collision
ii. At-collision
iii. Post-collision
b. Environments of a traffic collision
c. Three factors of a collision
i. Human
ii. Environment
iii. Mechanical
II. Highway Engineering (1 hour)
a. Highway features
i. Cut bank
ii. Edge drop
iii. Median
iv. Sight distance
b. Roadway features
i. Crown
ii. Centerline
iii. Grade
iv. Shoulder
c. Standard terminology
d. Alignment
i. Horizontal/Vertical curve
ii. Radius
iii. Tangent
III. Physical Evidence Identification (2 hours)
a. Tire marks
i. Tire friction mark
ii. Tire print
b. Basic marking mechanisms
i. Extreme acceleration
ii. Extreme deceleration
iii. Impending

iv. Locked
c. Side, Locked, Impending, Critical (SLIC)
i. Side-skid tire friction mark
ii. Locked-wheel tire friction mark
iii. Impending tire friction mark
iv. Critical speed tire friction mark
d. Types of tire friction marks
i. Skip skid
ii. Gap skid
iii. Flat tire mark (squib)
iv. Collision scrub
e. Road Scars
i. Scratches and scrapes
ii. Gouges and grooves
iii. Chops
iv. Chips
f. Debris
i. Types of debris
ii. Significance of debris
g. Vehicle / Body fluids
i. Spatter
ii. Dribble (fluid trail)
iii. Puddle (pool)
iv. Run-off
v. Soak-in
IV. Drag Factors (2 hours)
a. Definitions
i. Coefficient of friction
ii. Drag factor
iii. Resultant drag factor
b. Coefficient of friction
i. Methods to determine
ii. Factors that affect coefficient of friction
c. Resultant drag factor
i. Determining braking efficiency
ii. Establishing a drag factor
V. Basic Speed Calculations (2 hours)
a. Introduction
i. Conversion factors
ii. Basic speed equations
b. Application
i. Averaging
ii. Longest tire friction mark theorem
c. Introduction to the Combined Speed Equation
i. Equation
ii. Application
VI. Critical Speed (1 hour)
a. Introduction to the Critical Speed Equation

i. Equation
ii. Application

LAB CONTENT:

VII. Measuring and Diagramming (13 hours)

a. Importance of measuring

i. Ability to capture precise locations

b. Measuring equipment

i. Estimates or pacing
ii. Odometer
iii. Roll meter
iv. Measuring tapes
v. Surveying equipment

vi. Other types

c. Marking equipment

i. Lumbar crayons
ii. Paint sticks
iii. Chalk

iv. Marking paint
v. Stakes
vi. Index cards
vii. Evidence placards

d. Marking methods

i. Vehicles

ii. Tire friction marks
iii. Bodies
iv. Other items

e. Pre-measuring protocol

i. Develop a plan
ii. Scene walk through
iii. Sketches
iv. Safety aspects

f. Measuring systems

i. Spot-coordinate system
ii. Triangulation
iii. Stationing

g. Proper documentation

i. Documentation techniques

h. Scale diagramming

i. Grid paper overview
ii. Northwestern template
iii. Computer aided drafting

i. Drafting

i. Tools
ii. Techniques

j. Plotting points

i. Plotting data collected to scale on diagram - methodology

j. Plotting highway features
    i. Drawing curves
    ii. Use of the off-set tangent formula
    iii. Use of the radius formula

VIII. Field Exercises (13 hours)
a. Scene Assessment
    i. Temporary traffic control zone
    ii. Field notes
b. Scene processing
    i. Plan development
    ii. Physical evidence identification

iii. Marking and measuring
iv. Testing for coefficient of friction
c. Scale diagramming and speed calculations
i. Drawing field exercise collision to scale
ii. Calculating basic speed from crash data collected

X. Course Review (1.5 hours)
XI. Final Examination and Critique (4 hours)

METHODS OF INSTRUCTION:
Skills Demonstration, Lecture, Scenario Training

OUT OF CLASS ASSIGNMENTS
Required Outside Hours 4
Assignment Description
Write a traffic investigation report.

Required Outside Hours 4
Assignment Description
Create a legend and scaled diagram based on sketch from mock traffic collision.

Required Outside Hours 4
Assignment Description
Review Department Policy Manual

Required Outside Hours 4
Assignment Description
Review Penal and Vehicle codes.

Required Outside Hours 2
Assignment Description
Review instructor handouts

METHODS OF EVALUATION:

Objective examinations

Evaluation Percent 50

Evaluation Description

Written Exam

Students will be graded by POST certified instructor for competency in basic and critical speed calculations, terminology, physical evidence, measuring and diagramming. Students must score 70% or higher to pass the course.

Skill demonstrations

Evaluation Percent 50

Evaluation Description

Students will participate in a field exercise, sketch the scene and complete a scaled diagram of a mock traffic collision scene.

REPRESENTATIVE TEXTBOOKS:

Department Policy Manual, Agency, 2022

Reading Level 12, verified by Libby Flores

California Penal Code, Lawtech, California Legislature, 2022

ISBN 979-8777243461

Reading Level 12, verified by Doug Achterman

California Vehicle Code, Lawtech, California Legislature, 2022

ISBN B09N9V8L8Y

Reading Level 12, verified by Doug Achterman

Recommended Materials or Textbooks:

Instructor handouts Department Policy

ARTICULATION and CERTIFICATE INFORMATION

Associate Degree:
CSU GE:
IGETC:
CSU TRANSFER:
Transferable CSU, effective 201430
UC TRANSFER:
Not Transferable

SUPPLEMENTAL DATA:

Basic Skills: N
Classification: Y
Noncredit Category: Y
Cooperative Education:
Program Status: 2 Stand-alone
Special Class Status: N
CAN:
CAN Sequence:
CSU Crosswalk Course Department:
CSU Crosswalk Course Number:
Prior to College Level: Y
Non Credit Enhanced Funding: N
Funding Agency Code: Y
In-Service: N
Occupational Course: C
Maximum Hours:
Minimum Hours:
Course Control Number: CCC000637631
Sports/Physical Education Course: N
Taxonomy of Program: 210550