

**SOUTHEAST COMMUNITY COLLEGE
TRANSPORTATION OCCUPATIONS
POWERSPORTS TECHNOLOGY
COURSE SYLLABUS
November 24, 2020**

I. CATALOG DESCRIPTION

Course Number: MSTT2027
Course Title: Chassis II
Prerequisite: MSTT 1027

Course Description: This course covers repair and inspections of frame geometry, function and repair of technologically advanced suspension systems, proper procedures for maintaining and rebuilding of various types of steering heads, forks, shocks, swing arms and suspension components are covered. Performance suspension systems and setup, antilock and linked braking systems, spoked wheel lacing and truing are all covered in this course.

Credit Hour: 6.0
Class Hours: 38
Lab Hours: 158
Total Contact Hours: 196

II. COURSE OBJECTIVES: *Course will:*

- A.** Cover powersports vehicle frames and steering geometry.
- B.** Cover powersports vehicle suspension set-up.
- C.** Cover steering head rebuilding and set-up.
- D.** Cover cartridge forks.
- E.** Cover re-buildable shock absorbers.
- F.** Cover swing arm, control arm, and linkage inspection and rebuild.
- G.** Cover brake system inspection and repair.
- H.** Cover anti-lock braking systems.
- I.** Cover linked braking systems.
- J.** Cover braking system rebuilds.
- K.** Cover dismounting and mounting powersports vehicle tires.
- L.** Cover lacing and truing spoked wheels.
- M.** Cover test riding and repair evaluation.

III. STUDENT LEARNING OUTCOMES AND GENERAL EDUCATION LEARNING OUTCOMES

A. STUDENT LEARNING OUTCOMES: *Student will be able to:*

1. Describe the types of main frames used on powersports vehicles.
2. Explain the theory and operation of the front and rear suspension on powersports vehicles.
3. Disassemble front forks, clean, inspect components, repair and reassemble to manufacture's specifications.
4. Identify and understand new technologically advanced suspension components.
5. Change valving to affect the suspension performance in forks and shocks.
6. Rebuild shock absorbers.
7. Describe steering geometry terms like rake, trail, offset, and wheelbase and understand the effects of each.
8. Disassemble steering heads, clean, inspect, and/or replace components and reassemble to manufacture's specifications.
9. Disassemble swing arms, control arms, and linkages, clean, inspect and reassemble to manufacture's specifications.
10. Remove, service, and/or replace any chassis bearings in a powersports vehicle.
11. Rebuild hydraulic brake or clutch master cylinder to manufacturer's specifications.
12. Rebuild hydraulic brake caliper to manufacturer's specifications.
13. Properly bleed the hydraulic brake system on powersports vehicles.
14. Safely test ride the vehicle with special attention to brakes, suspension and handling.
15. Repair all types of powersports vehicle tires following manufacturer's recommendations.
16. Explain the sizes and profiles of powersports vehicle wheels and rims.
17. Disassemble and assemble spoke type motorcycle rims and accurately true them to manufacture's specifications.
18. Safely test ride the vehicle with special attention to wheels and tires.

B. GENERAL EDUCATION LEARNING OUTCOMES

GELO 3: Critical Thinking and Problem Solving

Outcome(s):

1. Collect, identify, interpret and analyze data.
2. Synthesize information to arrive at reasoned solutions to problems.

IV. CONTENT/TOPICAL OUTLINE

A. Powersports vehicle frames

B. Advanced suspension components, brakes, wheels, and tires

V. INSTRUCTIONAL MATERIALS

Required Text(s): Modern Motorcycle Technology with workbook, Edward Abdo

Required Tools: Powersports technology required tool set.

VI. METHODS OF PRESENTATION

A. Methods of presentation typically include a combination of the following:

1. Lecture
2. Small and large group discussion
3. Video presentation
4. Demonstration
5. Project boards
6. Handouts
7. Observations
8. Assigned lab projects
9. Fieldtrips

VII. METHODS OF EVALUATION

A. Methods of evaluation typically include a combination of the following:

1. Average test scores
2. Homework assignments
3. Skill exhibits
4. Class/lab attitude and participation

VIII. SPECIFIC COURSE REQUIREMENTS

- A. Accumulative grade point average of 2.0 (C) or higher.**
- B. Average of accumulative test scores must be a minimum of 70%.**
- C. Student will complete all lab assignments.**