**Big Bend**
COMMUNITY COLLEGE

**MASTER COURSE OUTLINE**                                                      **DATE: 4/29/20**
**COURSE TITLE**: Diesel I

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|---|---|---|
| Dept.: Agricultural Mechanics | Course Num: 161 | (Formerly:                    ) |
| CIP Code:  01.0205 | Intent Code: | Program Code: 123 |

**CREDITS**: 5

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|---|---|---|
| Total Contact Hrs Per Qtr.: 77 | Lecture Hrs: 33 | Lab Hrs: 44 |
| Distribution Design: | | Other Hrs: |

**Prepared By: Brett Iksic**

**COURSE DESCRIPTION** (as it will appear in the catalog)

This course is an introduction to diesel engine safety and operation.  Topics such as mechanical injection, valve adjustments, injector adjustments, injector timing, turbochargers, aftercoolers, and fuel delivery are covered. Students will also gain practical experience with basic diesel engine troubleshooting, repair, and maintenance.

**PREREQUISITES:** AGM 102 Agricultural Equipment and Workplace Safety (required) AGM 109 Shop Skills I (recommended).

**TEXTBOOK GUIDELINES:** Textbook determined by Agriculture Mechanics Faculty (Example: Diesel Technology 8th Edition, Andrew Norman).

**STUDENT LEARNING OUTCOMES**: *Upon successful completion of the course, students should be able to demonstrate the following knowledge or skills.*

1.  Demonstrate industry standard safety and operational practices.
2.  Describe diesel engine components, and their proper locations and functions.
3.  Perform overhead and injector timing adjustments.
4.  Troubleshoot, repair, and replace diesel engine components.
5.  Articulate the relationship between proper maintenance and engine performance.

**INSTITUTIONAL OUTCOMES**

3.  Students will be able to demonstrate teamwork, ethics, safety awareness, and/or workplace specific skills related to agricultural mechanics.

**COURSE CONTENT OUTLINE**

1.  Diesel Engine Safety and Operation
    -   Safety practices
    -   Operation
2.  Diesel Engine Inspection
3.  Diesel Engine Components and Systems
    -   Engine blocks and cylinder heads
    -   Fuel systems
    -   Air intake systems
    -   Exhaust systems
4.  Diesel Engine Adjustments and Repairs
    -   Injection timing
    -   Overhead adjustments
    -   Component removal and replacement
5.  Diesel Engine Maintenance

**DEPARTMENTAL GUIDELINES** (optional)

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**DIVISION CHAIR APPROVAL**                           **DATE**