# AYDIN ADNAN MENDERES UNIVERSITY
# COURSE INFORMATION FORM

| Course Title | Diesel Engines and Fuel Injection Systems | | | | | | |
|---|---|---|---|---|---|---|---|
| Course Code | OTE102 | | Couse Level | Short Cycle (Associate's Degree) | | | |
| ECTS Credit | 4 | Workload | 100 *(Hours)* | Theory | 3 | Practice | 1 | Laboratory | 0 |
| Objectives of the Course | This course aims to be able to do maintenance and repair of diesel fuel injection systems. | | | | | | |
| Course Content | In this course, students in the automotive division, will be able to maintain, perform control operations and repair diesel-powered vehicles with the help of technology, | | | | | | |
| Work Placement | N/A | | | | | | |
| Planned Learning Activities and Teaching Methods | Explanation (Presentation), Individual Study | | | | | | |
| Name of Lecturer(s) | Ins. Etem SAÇMACIOĞLU | | | | | | |

## Assessment Methods and Criteria

| Method | Quantity | Percentage (%) |
|---|---|---|
| Midterm Examination | 1 | 40 |
| Final Examination | 1 | 70 |

## Recommended or Required Reading

| | |
|---|---|
| 1 | Ahmet Kayan- Dizel Motorlar- Yüce Yayımları-2003 |
| 2 | Fahrettin Küçükşahin-Dizel Motorları-Beta Yayınları-İstanbul 2008 |

| Week | Weekly Detailed Course Contents | |
|---|---|---|
| 1 | Theoretical | Fuel System (Fuel tank, feed pump, fuel lines, filter |
| 2 | Theoretical | Supercharging Systems, Supercharging Systems Usage Causes of Internal Combustion Engines |
| 3 | Theoretical | Types of Diesel Engines Used Supercharging Systems |
| 4 | Theoretical | Mechanical Supercharging (Super Charge), Exhaust Turbo Compressor Supercharging |
| 5 | Theoretical | Intercooler System |
| 6 | Theoretical | Fuel Injection Pump, Fuel Injection Pump Type of Place |
| 7 | Theoretical | D.P.A. Type Pump |
| 8 | Theoretical | Electronic Fuel System |
| 9 | Theoretical | Common Rail Diesel Injection System |
| 10 | Theoretical | Comman Rail Diesel Injection System and Employee Sensors |
| 11 | Theoretical | Syringes |
| 12 | Theoretical | Check the injectors and Settings |
| 13 | Theoretical | Diesel Engine Electronic Control Units |
| 14 | Theoretical | Diagnos Device |

## Workload Calculation

| Activity | Quantity | Preparation | Duration | Total Workload |
|---|---|---|---|---|
| Lecture - Theory | 15 | 0 | 3 | 45 |
| Lecture  - Practice | 15 | 0 | 1 | 15 |
| Assignment | 10 | 0 | 2 | 20 |
| Individual Work | 1 | 0 | 18 | 18 |
| Midterm Examination | 1 | 0 | 1 | 1 |
| Final Examination | 1 | 0 | 1 | 1 |
| | | | Total Workload (Hours) | 100 |
| | | | [Total Workload (Hours) / 25*] = **ECTS** | 4 |

*25 hour workload is accepted as 1 ECTS

## Learning Outcomes

| | |
|---|---|
| 1 | Knows the basic principles of diesel engines and comments. |
| 2 | Diesel engines will recognize it as construction. |

| 3 | Knows diesel fuel injection system. |
|---|---|
| 4 | Knows the forming systems of the diesel engine and can solve the problem by analyzing the components. |
| 5 | Pump and injector test equipment to do tests, interpret test results. |

**Programme Outcomes** *(Automotive Technology)*

| 1 | Using the basic knowledge and skills acquired in his/her field of study, to have the ability to evaluate and interpret the data, to define and analyze the problems, to make solution suggestions based on evidence and proofs. |
|---|---|
| 2 | To choose and use efficiently contemporary techniques and means as well as information technologies required for the applications related to the field of study. |
| 3 | The ability to apply the processes related to industrial and service sector by examining. |
| 4 | To gain the ability to produce solutions to unforeseen situations, take responsibility in teams and to have the skill to conduct individual works. |
| 5 | To achieve an awareness of the necessity of lifelong learning and consistently self-improving besides of following the developments in science and technology. |
| 6 | To become skillful at using computer hardware and software in a baseline level required by the field of study. |
| 7 | To be aware of Business Law, Job Security, environmental protection and quality concepts. |
| 8 | To have a command of communication skills and foreign language in order to communicate efficiently and follow the latest developments in his/her field of study. |
| 9 | Acquiring enough conceptual and applied knowledge in Mathematics, Science and Basic Engineering issues related to his/her field. |
| 10 | To plan the processes in automotive technology field to meet the expectations of the sector. |
| 11 | To become skillful at making designs by means of technical and computer-aided drawings and simulation programs, and by using various software programs to be able to choose systems and components required in by the field apart from making the basic sizing computations and drawing the architectural and static projects and details. |
| 12 | Ability to use the methods and techniques of career planning and discussing the effects of character traits on career preferences. |
| 13 | To provide them with knowledge about substance use and addiction problem and prevention methods. |

**Contribution of Learning Outcomes to Programme Outcomes** *1:Very Low, 2:Low, 3:Medium, 4:High, 5:Very High*

|     | L1 | L2 | L3 | L4 | L5 |
|-----|----|----|----|----|----|
| P1  | 4  | 4  | 3  | 5  | 5  |
| P2  | 5  | 3  | 3  | 5  | 5  |
| P3  | 1  |    | 2  | 4  | 4  |
| P4  | 3  | 2  | 3  | 4  | 3  |
| P5  | 1  | 1  | 1  | 4  | 3  |
| P6  |    |    |    | 2  | 4  |
| P7  | 2  |    |    | 5  | 2  |
| P8  | 1  |    |    |    | 2  |
| P9  | 4  |    | 2  | 5  | 1  |
| P10 | 3  |    | 2  | 5  |    |
| P11 | 1  | 2  | 2  | 3  | 5  |