



<b>COURSE TITLE:</b>	Automotive Car Systems	<b>DURATION:</b>	08 (eight) weeks
<b>COURSE CODE:</b>	PYP012	<b>HOURS/WEEK:</b>	01 (one)
<b>CREDIT HOURS:</b>	1		
<b>PRE-REQUISITES:</b>	none		
<b>COURSE INSTRUCTOR:</b>	Dr. Muhammad Nadeem Sharif		
<b>COURSE DIRECTOR:</b>	Dr. Tayseer		

## 1. INTRODUCTION:

The primary goal of this course is to educate students on the fundamental working principle of automotive systems and their troubleshooting management.

## 2. COURSE DESCRIPTION, OBJECTIVES & CONTENTS:

### 2.1 Course Description:

Through this course, students will learn and understand the followings:

- Demonstrate an understanding of the working principle of petrol and electric vehicle
- Demonstrate an ability to diagnose and troubleshoot the basic car ignition system
- Examine the basics of car safety management and learn the wheel balancing
- Identify various car electrical components malfunction and learn their troubleshoot
- Understand the law of energy conservation

### 2.2 Course Main Objectives:

- To educate the students on the fundamental working principle of automotive systems and their troubleshooting management
- To equip the students with the skills to diagnose the car's basic electrical and mechanical issues by using analytical approaches
- To help the students to develop an understanding of safety protocols in the automotive industry through the medium of technical studies

## 2.3 Course Contents:

### Topics to be Covered

No	Topics	List of Topics	Contact hours
1	Introduction to Automotive Systems and Mechanical and Electrical components	1.1 Components of Engine 1.2 Engine Capacity 1.3 Types of the engine 1.4 Types of the battery	1
2	Introduction of Electric Vehicle	2.1 Working principle of electric vehicle 2.2 Environmental and future impact of EV	1
3	Working Principle of Petrol car engine	3.1 Four-stroke cycles 3.2 Fuel System <b>Quizzes, Assessment Test</b>	1
4	Introduction to car's cooling, exhaust, and lubrication system	4.1 How the radiator works 4.2 Component of the exhaust system 4.3 The use of lubricant in the engine	1
5	Introduction to the car's transmission system	5.1 The function of the clutch 5.2 Manual and automatics gears	1
6	Introduction to car's suspension and braking system	6.1 Working principle of Propeller shaft and differential 6.2 Disk and Drum Braking System <b>Quizzes, Assessment Test</b>	1
7	Introduction to the cars ignition system	7.1 The function of the battery, alternator, and ignition coil 7.2 Basic electrical circuits 7.2 Assemble, diagnose, and troubleshoot the cars ignition system	1
8	Project	8.1 <b>Practical Activity, Project Work Presentation</b>	1
<b>Total</b>			<b>8</b>

## 3. Schedule of Assessment Tasks for Students

#	Assessment method*	Week Due	The proportion of the Total Assessment Score
1	Attendance	Weekly	5%
2	Quizzes, short Test	Week 3-6	20%
3	Class participation	Every class	25%
4	Project Work, Group Presentation	Week 8	50%

## PSEP MODULAR COURSES' GRADING POLICY

**ATTENDANCE**

**5%**

**QUIZZES/SHORT TESTS**

**20%**

**CLASS PARTICIPATION**

**25%**

**PROJECTS/ASSIGNMENTS**

**50%**

## PSEP MODULAR COURSES' ATTENDANCE POLICY



#### 4. Reference textbooks and other teaching aids:

**Required Material: Lab Manual PYP012, Audio Video Lectures Prepared by Faculty**