



Module (Course Syllabus) Catalogue 2024-2025

College/ Institute	Erbil Technology College				
Department	Automotive Technique				
Module Name	Automotive Computer Control II				
Module Code	ACC702				
Degree	Technical Diploma	<input type="checkbox"/>	Bachelor	<input checked="" type="checkbox"/>	
	High Diploma	<input type="checkbox"/>	Master	<input type="checkbox"/>	PhD <input type="checkbox"/>
Semester	7				
Qualification					
Scientific Title					
ECTS (Credits)	6				
Module type	Prerequisite	<input type="checkbox"/>	Core	<input type="checkbox"/>	.Assist <input type="checkbox"/>
Weekly hours					
Weekly hours (Theory)	hr Class(2)		Total hrs Workload (53)		
Weekly hours (Practical)	hr Class(2)		Total hrs Workload (109)		
Number of Weeks	two-semester 14				
Lecturer (Theory)	Sazan Ali Kamal Mohammed				
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Lecturer (Practical)	Sarween, Ibraheem				

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Websites	

Course Book

Course Description	The purpose of this course is to promote advanced diagnostic automobile faults using diagnostic equipment's. Gaining an understanding of the Automobile Process Control Systems and methods used in a modern vehicle system. Therefore, a fundamental understanding of the principle of operation of a range of sensors / transducers and instrumentation techniques applicable in an industrial situation combined with an understanding and knowledge of Process control techniques and tuning methods equips the Engineer or Technician with the necessary skills and makes them invaluable in their workplace.
Course objectives	<p>Upon completion of this course the student will be able to:</p> <ol style="list-style-type: none"> 1. Automotive Fault Diagnosis 2. Understand the principles and fundamentals of Process Measurement and Instrumentation systems and Process variables 3. Automobile Mechanical and Electrical System Controlling system and components. 4. Controlling Symbols and units used and sample calculations 5. Understand Principles of operation of Sensors and Transducers 6. Practical activities to design, build, calibrate and OBD advanced Diagnosis
Student's obligation	The student must attendance the hall 2 hour and 2 hour in shop abidance the lecturer instruction wherein early attendance and bringing requisite tools and keep the hall clean and protect furniture.
Required Learning Materials	To avoid students being bared in the hall lecturer uses several tools, whiteboard, data show and other demonstration tools to interest students.

	Task	Weight)Marks (Due Week	Relevant Learning Outcome
	Paper Review			

Evaluation	Assignments	Homework	%5	2	
		Class Activity	%2		
		Report	%5	1	
		Seminar			
		Essay			
		Project	%5	1	
	Quiz	%8	4		
	.Lab	%10	6		
	Midterm Exam	%25			
	Final Exam	%40			
Total	%60				
Specific learning :outcome	<p>Upon the completion of this course students will be able to complete the following:</p> <ol style="list-style-type: none"> 1. To give an understanding of the principles of operation of a range of Diagnosis fault codes 2. Using a hands-on approach, enable the delegate to investigate the operation of an instrumentation system by designing conditioning circuits 3. Control system familiar and confident with a range of measurement techniques 4. Confidence and knowledge to apply the above techniques and principles to solve an unfamiliar and bespoke measurement situation in the workplace 5. Automobile Mechanical and Electrical System 				
Course :References	<ol style="list-style-type: none"> 1. Advanced Automotive Fault Diagnosis Third Edition 2. Measurement, Instrumentation and Sensors Handbook 3. Basic instrumentation measuring devices and basic pid control 4. Measurement and Control Basics, 3rd Edition 5. Internet 				
Course topics)Theory(Week	Learning Outcome	
Introduction to process control			1	1	

Process control loops, Single-loop Feedback Control, Time Elements of a Feedback Loop, Advanced Control Loops	2	1
Diagnostic techniques	3	2
Diagnostic process	4	2
Mechanical diagnostic techniques	5	3
Electrical diagnostic techniques	7-6	3
Tools and equipment	8-9	2
Sensors, actuators, and oscilloscope diagnostics	10	2
On-board diagnostics	11-13	5
Engine systems	14	5
Practical Topics	Week	Learning Outcome
Electrical and electronic fundamentals	1-3	1
Digital and Analogue system comparison	4-6	1
Diagnostic techniques	7-9	3
On-board diagnostics (automobile dashboard)	10-11	4
Computer's control, Data acquisition device	12-13	3
Process control by computer using Data acquis	14	2

Questions Example Design

: Compositional

1. What are the diagnostic process to identify the engine combustion stability?
2. How to diagnose the engine nozzle injectors using the diagnostic device?

2. True or false type of exams:

1. A thermometer is an instrument that is used to measure the temperature.
2. The MAS sensor if dirty it will influence the engine performance.

3. : Multiple choices

1. The pressure gauge bended bourdon tube is made of :
A. Steel
B. leather
C. camel hair
D. Brass

(T).

(T).

Extra notes:

Students must be any time ready for quizzes.

External Evaluator

I have read the terms of this article and acknowledge that it meets the required purpose.

Pshtiwan Mohammad Sharif

External Lecturer

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