Ministry of Higher Education and Scientific Research
Scientific Supervision and Evaluation Authority
Quality Assurance and Academic Accreditation Department
International Accreditation Department

Academic Program and Course Description Guide

2024

Introduction

The academic program is a coordinated and organized package of courses that include procedures and experiences organized in the form of study vocabulary, the main purpose of which is to build and refine the skills of graduates, which makes them qualified to meet the requirements of the labor market. It is reviewed and evaluated annually through internal or external audit procedures and programs, such as the external examiner program. The academic program description provides a brief summary of the main features of the program and its courses, indicating the skills that students are working to acquire based on the objectives of the academic program. The importance of this description is evident in that it represents the cornerstone in obtaining program accreditation and participates in writing the teaching materials under the supervision of the scientific committees in the scientific departments. This guide, in its second version, includes a description of the academic programs after updating the vocabulary and paragraphs of the previous guide in light of the developments and changes in the educational system in Iraq, which included a description of the academic program in its traditional form (annual, semester) system, in addition to adopting the description of the academic program circulated under the letter of the Department of Studies No. 2906/3 dated 5/3/2023 regarding the program for its work. In this field, we seek to emphasize the importance of writing a description of the academic program and courses to ensure the smooth running of the educational process.

Concepts and Terms

1. Academic Program Description: The academic program description provides a comprehensive overview of the program's vision, mission, objectives, and educational outcomes. This description serves as a strategic reference for achieving academic development, and accurately identifies how the program will be implemented to effectively achieve its objectives.

2. Course Description: Provides a brief and accurate description of each course, including its objectives and expected outcomes. The description should include clear details on how to make the most of the offered course material, and whether the student has acquired the required skills and knowledge.

3. Program Vision: The vision expresses the program's future aspirations. The program seeks to be a pioneer and distinguished locally and internationally, with a focus on innovation and quality in education, and achieving sustainability in providing educational programs that are in line with the needs of society and the labor market.

4. Program Mission: The mission clarifies the general objectives that the program seeks to achieve through education and learning. The mission includes an outline of how to develop students' capabilities and prepare them for the labor market in innovative and modern ways that are in line with technological and cognitive changes.

5. Program Objectives: A set of specific objectives that the program seeks to achieve over a specific period of time. These objectives include developing the student's knowledge and skills in measurable and evaluable ways, which contributes to improving the quality of the educational process and achieving distinguished educational outcomes.

6. Curriculum: *The curriculum includes all the courses offered by the program, whether theoretical or practical. The plan is integrated with the educational strategies used, and takes into account the number of study hours for each course to ensure a balance between theoretical and applied content.*

7. Learning Outcomes: *Learning outcomes represent a set of skills and knowledge that the student must acquire by the end of the academic program successfully. These outcomes are determined based on the program objectives, and are an important tool for evaluating the effectiveness of education and ensuring the achievement of high-quality educational outcomes.*

8. Teaching and Learning Strategies: *These are the strategies used by the faculty to ensure the achievement of the educational objectives of the program. These strategies include the use of various methods in education such as interactive learning, e-learning, in addition to classroom and extracurricular activities that contribute to enhancing a deep understanding of the educational content and achieving the required learning outcomes.*

Conclusion By *preparing this comprehensive academic description, we hope that the program will be able to meet the highest standards of academic quality, and will contribute effectively to improving educational outcomes and developing student skills in line with the requirements of the modern labor market. Through this guide, we aspire to raise the level of academic education and contribute to enhancing the university's position locally and internationally.*

Republic of Iraq
Ministry of Higher Education & Scientific Research
Supervision and Scientific Evaluation Directorate
Quality Assurance and Academic Accreditation
International Accreditation Dept.

Academic Program Specification Form for The Academic Year 2024-2025

University: Northern Technical University
College: Hawija Technical Institute
Dept.: Power Mechanics Techniques
Date of Form Completion :27-8-2024

Department Head Name/ Qusay Kamil Jasim
Date: 27/8/2024
Signature

Department Head Name: Dr. Mohammed Jyad
Date: 27 / 8 /2024
Signature

Quality Assurance And University Performance Manager

Data: 27 / 8 /2024

Signature

Dean's approval

PROGRAMME SPECIFICATION

This academic program description provides a concise summary of the main features of the program and the learning outcomes expected of the student to achieve, proving whether he has made maximum use of the available opportunities. It is accompanied by a description of each course within the program

1. Teaching Institution	Northern Technical University/ Hawija Technical Institute
2.University Department/Centre	Power Mechanics techniques
3.Program Title	Technical Sciences
4.Title of Final Award	Technical Diploma
5. The school system: Annual / Courses / Other Annual	Courses system
6. Accreditation	**ABET Academic Accreditation Program for Engineering and Technology**
7. Other external influences	
8. Date of production/revision of this specification	*27-8-2024*
9. Aims of the Program	

The power generation branch aims to prepare the technical staff that will be the link between the specialist and the skilled worker. The scientific branch prepares the graduate and provides him with theoretical, applied and practical information to be able to carry out the work assigned to him. Besides that; Work in power plants of various types (steam, gas, hydroelectric, diesel ... etc.) with the operation of components and their units; Carry out emergency and periodic maintenance work for the components and units of the various stations, along with their measuring devices; Working in pumping stations, operating and maintaining their various components.

Automobile Techniques Branch: aims to prepare the technical staff that will be a link between the specialist and the skilled worker. The department prepares and prepares the graduate and provides him with theoretical, applied and practical information to be able to carry out the work entrusted to him. Besides that, the ability to identify mechanical and electrical faults in cars; Carrying out regular maintenance for gasoline and diesel cars; The ability to manage and operate service and maintenance stations.

1. Learning Outcomes, Teaching, Learning and Assessment Methods

A. Knowledge and Understanding

A1- Knowing how parts and components work in cars, both types: diesel and gasoline.
A2- Knowing how to diagnose faults in cars
A3- Knowing the diagnosis of faults in electrical power production stations
A4- Knowing how to perform periodic maintenance of devices, systems and equipment at work sites.
A5- Transfer the above-mentioned theoretical information to the skilled worker.

B. Subject-specific skills

B1 - The ability to maintain and repair parts and components for cars (diesel and gasoline).
B2 - The ability to maintain and repair parts and components of electrical power production plants and systems.
B3 - The ability to operate electric power stations and water pumping stations.

Teaching and Learning Methods

Lectures, workshops, laboratories, methodological training, summer training, as well as scientific visits to various electric power plants.

Assessment methods

Oral exams, written exams, quarterly exams, final exams, daily assessment, practical exams in laboratories, and weekly reports.

C. Thinking Skills (Emotional and Value Objectives):

C1- Increasing the awareness of the student during education.
C2 - The student's participation in class activities and the delivery of the assignment on time.
C 3- Adherence to the rules of occupational safety while working in laboratories.
C4-Attention control and attention test (selective attention).
C5- Increasing the students' self-confidence.
C6- Managing time and not wasting it.
C7- Increasing the spirit of competition and enthusiasm among students.

Teaching and Learning Methods

1- Listen carefully to the teacher’s explanation.
2- Knowing the role of science and scientists in life.
3- Encourage and motivate the student to contribute to the explanation and discussion and increase his interaction in the class.
4- The student's interest in the calm and cleanliness of the class.

Assessment methods

1- Observe the student through his posts. 2- Interviewing the student for practical tests. 3- The student's cumulative record through educational committees located in the department. 4- Giving the student homework and asking to solve certain problems.
D- General and transferable skills (other skills relevant to employability and personal development). D1- Using the computer and the Internet to understand the working mechanism of some complex parts of the specialty. D2 - Using the computer in engineering and industrial drawing D3 - Using modern measurement and control equipment to conduct laboratory experiments. D4 - Using modern inspection techniques in diagnosing malfunctions of devices and equipment and determining ways to fix them.
Teaching and Learning Methods
1- Explanation and clarification in the lectures. 2- Practical lessons in workshops and laboratories. 3- Reports. 4- Graduation projects for students. 5- Summer training. 6- Systematic training. 7- Discussion seminars. 8- Guidance seminars
Assessment methods
1- Theoretical tests (oral and written). 2- Practical tests. 3- Semester and final exams. 4- Daily evaluation. 5- Reports.

11. programme structure

Courses for the two branches:

1. Automobile techniques/ first year

Seq	Subject	Theoretical (hours)	Practical (hours)	Total	Units	Notes
1	Human Rights and Democracy	**2**	**0**	**2**	**2**	Public
2	English Language 1	**2**	**0**	**2**	**2**	Public
3	Principles of Computer 1	**1**	**1**	**2**	**2**	Assistant
4	Arabic Language	**2**	**0**	**2**	**2**	Public
5	Mathematic 1	**2**	**0**	**2**	**2**	Assistant
6	Mathematic 2	**2**	**0**	**2**	**2**	Assistant
7	Mechanical Workshops	**0**	**3**	**3**	**3**	Specialized
8	Workshops	**0**	**3**	**3**	**3**	Specialized
9	Automotive Engines Maintenance1	**2**	**4**	**6**	**6**	Specialized
2	Automotive Engines Maintenance2	**2**	**4**	**6**	**6**	Specialized
11	Automotive Electrics and Electronics1	**2**	**2**	**4**	**4**	Specialized
12	Automotive Electrics and Electronics 2	**2**	**2**	**4**	**4**	Specialized
13	Thermodynamics	**2**	**2**	**4**	**4**	Specialized
14	Heat Transfer and Fluid	**1**	**2**	**3**	**3**	Specialized
15	Engineering Mechanics	**2**	**1**	**3**	**3**	Specialized
16	Engineering Drawing1	**0**	**3**	**3**	**3**	Assistant
2025	Engineering Drawing2	**0**	**3**	**3**	**3**	Assistant
	Total Hours	**24**	**30**	**54**	**54**	

Automobile Techniques/ Second Year

Seq	Subject	Hours			Units	Type
		Theo.	practical	Total		
1	English Language 2	2	0	2	2	Public
2	Ethics of the Profession	2	0	2	2	Public
3	Computer	1	1	2	2	Assistant
4	The crimes of the Baath regime in Iraq	2	0	2	2	Public
5	Arabic language	2	0	2	2	Public
6	Maintenance of automotive mechanical power transmission systems1	2	4	6	6	Specialized
7	Automotive electronic control systems1	2	2	4	4	Specialized
8	Internal Composition Engine1	2	2	4	4	Specialized
9	computer aided Engineering drawing for automotive parts	0	6	6	6	Assistant
2	Automotive Bodywork1	1	2	3	3	Specialized
11	Automotive Electrical and electronics1	1	2	3	3	Specialized
12	Maintenance brake, suspension and steering systems in the Automotive2	2	4	6	6	Specialized
13	Automotive electronic control systems2	2	2	4	4	Specialized
14	Internal Composition Engine2	2	2	4	4	Specialized
15	Automotive mechanics	4	0	4	4	Specialized
16	Automotive Bodywork2	1	2	3	3	Specialized
17	Automotive Electrical and electronics2	1	2	3	3	Specialized
18	Project	0	3	3	3	Specialized
	Total hours	29	34	63	63	

Power Generation techniques/ first year

eq	Subject	Theoretical (hours)	Practical (Hours)	Total (Hours)	Units	Notes
1	Human Rights and Democracy	**2**	**0**	**2**	**2**	Public
2	English Language 1	**2**	**0**	**2**	**2**	Public
3	Principles of Computer 1	**1**	**1**	**2**	**2**	Assistant
4	Arabic Language	**2**	**0**	**2**	**2**	Public
5	Mathematic 1	**2**	**0**	**2**	**2**	Assistant
6	Mathematic 2	**2**	**0**	**2**	**2**	Assistant
7	Mechanical Workshops1	**0**	**3**	**3**	**3**	Specialized
8	Mechanical Workshops 2	**0**	**3**	**3**	**3**	Specialized
9	Thermodynamics	**2**	**2**	**4**	**4**	Specialized
2	Electrical technology1	**2**	**2**	**4**	**4**	Specialized
11	Fluid	**2**	**2**	**4**	**4**	Specialized
12	Engineering Mechanics1	**2**	**2**	**4**	**4**	Specialized
13	Engineering Drawing1	**0**	**3**	**3**	**3**	Assistant
14	Heat Transfer	**2**	**2**	**4**	**4**	Specialized
15	Engineering Drawing	**0**	**3**	**3**	**3**	Assistant
16	Hydraulic Machines	**2**	**2**	**4**	**4**	Specialized
2025	Electrical technology	**2**	**2**	**4**	**4**	Specialized
18	Engineering Mechanics	**2**	**2**	**4**	**4**	Specialized
	Total Hours	**27**	**29**	**56**	**56**	

Power Generation techniques/ Second year

Seq	Subject	Hours			Units	Notes
		Theo.	Prac.	T		
1	English Language 2	2	0	2	2	Public
2	Ethics of the Profession	2	0	2	2	Public
3	The crimes of the Baath regime in Iraq	2	0	2	2	Public
4	Arabic language	2	0	2	2	Public
5	Principles of Computer 1	1	1	2	2	Assistant
6	Measurement Instruments1	2	2	4	4	Specialized
7	Hydraulic & Pneumatic Systems1	2	2	4	4	Specialized
8	Gas Turbine and Diesel Power Plant Technology1	2	3	5	5	Specialized
9	Steam Power Plant Technology1	2	3	5	5	Specialized
2	Electrical Technology1	2	2	4	4	Specialized
11	Industrial Drawing	0	3	3	3	Assistant
12	Measurement Instruments2	2	2	4	4	Specialized
13	Hydraulic & Pneumatic Systems2	2	2	4	4	Specialized
14	Gas Turbine and Diesel Power Plant Technology2	2	3	5	5	Specialized
15	Steam Power Plant Technology2	2	3	5	5	Specialized
16	Electrical technology	2	2	4	4	Specialized
17	Project	0	3	3	3	Specialized
	Total	29	31	60	60	

12. Personal Development Planning
1. Using modern resources, whether in the library or the Internet 2. Participation in training courses inside and outside the institute. 3. Technical and administrative advice. 4. Preparing applied and field research. 5. Preparing educational bags. 6. Cooperation with departments and institutions in the governmental and private sectors in the field of training, supervision and consultancy.
13. Admission criteria (setting regulations related to joining the college or institute)
1- Adoption of the average of student's credits on the basis of central acceptance by the Ministry of Higher Education and Scientific Research 2- The type of branch from which the student graduated, including: A- Scientific B- Professional (industrial). 3- The interview: where a committee of the department's lecturers is formed for the purpose of interviewing the students. 4- Medical examination for students.
14. The key sources of information about the programme
1. Textbooks approved by the Northern Technical University. 2. The resources available in the institute's library or on the Internet.

Curriculum Skills Outline																	
Please check the boxes corresponding to the individual learning outcomes from the program being evaluated																	
			Learning outcomes required from the program														
year/level	Course Name	basic or optional	Cognitive goals				Program specific objectives				Emotional and value goals				Transferred general and qualification skills (other skills related to employability and personal development)			
			A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4	D1	D2	D3	D4
FIRST	Engineering Thermodynamics	primary	¶	¶	¶	¶	¶	¶	¶	¶	¶	¶	¶	¶	¶	¶	¶	¶
	Automobile electricity	primary	¶	¶	¶	¶	¶	¶	¶	¶	¶	¶	¶	¶	¶	¶	¶	¶
SECOND	Automotive Maintenance	primary	¶	¶	¶	¶	¶	¶	¶	¶	¶	¶	¶	¶	¶	¶	¶	¶
	Automobile Electricity (2)	primary	¶	¶	¶	¶	¶	¶	¶	¶	¶	¶	¶	¶	¶	¶	¶	¶

Course description form

Course description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, demonstrating whether he has made the most of the available learning opportunities. It must be linked to the description of the program.

1. Teaching Institution	Northern Technical University/ Hawija Technical Institute
University Department/Centre	**Power Mechanics techniques**
3. Course name/code	**Automotive maintenance**
4. Forms of attendance available	**Weekly**
5. Semester/year	**Courses system**
6. Number of hours of study (total)	**240 (8 hours per week)**
7. Date this description was prepared	**27 / 8 /2024**
8. Aims of the course	
The student understands the parts and malfunctions of the engine, gearbox, clutch, transmission, front axle, rear axle, stops, car air conditioners, steering and steering group, and how to maintain these parts and make the necessary and required repairs.	

2. Course outcomes, Teaching, Learning and Assessment Methods

A - knowledge and understanding.

A1- The mechanism of action of the clutch.
A2-Knowing the mechanism of work of the powertrain.
A3- Knowing the working mechanism of the front axle and the rear axle.
A4-Knowing the mechanism of work of air conditioning devices in the car.
A 5- Knowing how the engine works.
A6- Knowing how the switch works.

B - Subject-specific skills

B1 - Ability to maintain and repair the clutch
B2 - Ability to maintain and repair the powertrain
B3 - Ability to maintain and repair the front axle and rear axle
B 4- The ability to maintain and repair the air-conditioning devices in the car

Teaching and learning methods
(Lecture, workshop, laboratory, summer training, methodological training)
Evaluation methods
Oral exams, written exams, semester exams, final exams, daily assessment
C- thinking skills C1- Graduation projects C2 - Classroom and extra-curricular assignments and reports. C3 - competitions and workshops. C4- Innovations and patents.
Teaching and learning methods
1- (Lecture, workshop, laboratory, summer training, methodological training)
Evaluation methods
Oral exams, written exams, semester exams, final exams, daily assessment
D - General and transferable skills (other skills related to employability and personal development). D1-Using the computer and the Internet to understand the working mechanism of some complex parts of the field D2 - Using the computer in engineering and industrial drawing D3 - Using modern electronic display methods to display pictures and videos related to the subject. D4 - Using modern inspection equipment to check the different parts and systems of cars.

11. Course Structure					
week	hours	Required Learning Outcomes	Unit Name/Subject Method	Teaching Method	Assessment method
1	8	Knowing the engine types	Basic engine nomenclature, engine classification	Theoretical lecture + practical experience	Paper test + practical test
2	8	Knowing the Four – stroke cycle and spark – ignition engine	Four – stroke cycle spark – ignition engine and its components, four – stroke cycle compression ignition engine and its components	Theoretical lecture + practical experience	Paper test + practical test
3	8	Knowing the Two – stroke cycle types	Two – stroke cycle spark – ignition engine, Two – stroke cycle compression – ignition engine, comparison of two stroke and four stroke engine.	Theoretical lecture + practical experience	Paper test + practical test
4,5	8	Knowing the Valves timing for 4-stroke cycle & 2-stroke cycle	Valves timing for 4- stroke cycle spark – ignition engine and four – stroke cycle compression ignition engine, variable valve timing [VVT, CVVT]. Valves timing for 2- stroke cycle spark – ignition engine and 2- stroke cycle compression – ignition engine, Scavenging systems for 2- stroke engines.	Theoretical lecture + practical experience	Paper test + practical test
6-7-8	8	Knowing the Engine performance and testing	Engine performance and testing , performance parameters for 4-stroke engine and 2- stroke engine, basic measurements indicators. Illustrative examples	Theoretical lecture + practical experience	Paper test + practical test
9-2-11	8	Calculate the performance of engines.	Performance of S. I. Engine, performance of C. I. Engine,effect of variable compression ratio on engine performance. Effect of strength mixture (Fr) on engine performance factors	Theoretical lecture + practical experience	Paper test + practical test

12	8	Calculate the engine heat balance	Engine heat balance sheet. Illustrative examples	Theoretical lecture + practical experience	Paper test + practical test
13	8	Study the combustion	Combustion – Combustion equations, heat of combustion - Theoretical flame temperature - chemical equilibrium and dissociation - Theories of Combustion - Pre-flame reactions - Reaction rates. Combustion in S. I. Engines, stages of combustion in S. I. Engine	Theoretical lecture + practical experience	Paper test + practical test
14	8	Study the effect of engine variables on combustion	Effect of engine variable on stages of combustion in S. I. Engine. Flame structure and speed, Cycle by cycle variations, Lean burn combustion, stratified charge combustion systems.	Theoretical lecture + practical experience	Paper test + practical test
15,16	8	Knowing the knocking in engines	Detonation or knocking in S. I. Engine, what, why, control, & octane, effects of detonation, Control of duration, pre-ignition, effect of pre-ignition on engine.	Theoretical lecture + practical experience	Paper test + practical test
2025	8	Study the combustion in S.I. engines	S.I. engine combustion chamber designs	Theoretical lecture + practical experience	Paper test + practical test
18,19	8		Carburetion in S. I. Engine, Gasoline - air mixtures. Mixture requirements - Mixture formation - Carburetor, Chokes. Simple carburetor – calculation of the Air-fuel ratio for a simple carburetor, design of carburetor, venture size, fixed venturi and variable venturi and constant vacuum types,	Theoretical lecture + practical experience	Paper test + practical test
20	8	Study the injection system in engines	Injection fuel systems in S.I. engine, Pneumatic and Electronic Fuel Injection Systems, Ignition systems requirements, Timing Systems,	Theoretical lecture + practical experience	Paper test + practical test

			breaker mechanism. Gasoline Injection – TBI, MPFI, GDI and Air-assisted Injection, Engine Management System, Mono point, Multi point, Direct injection systems and Air assisted systems – Principles and Features, Idle speed, lambda, knock and spark timing control.		
21	8	Study the functions and types of sensors	Sensors for Air flow, Pressure, Temperature, Speed, Exhaust Oxygen, Knock and Position in engine management systems – Principle of operation, construction and characteristics.	Theoretical lecture + practical experience	Paper test + practical test
22	8	Study the Combustion in C. I engines	Combustion in C. I engines, stages of combustion in C.I. engine, variable affecting, stages of combustion	Theoretical lecture + practical experience	Paper test + practical test
23	8	Know the Diesel knocking	Diesel knock methods of controlling diesel knock	Theoretical lecture + practical experience	Paper test + practical test
24	8	Study the design of combustion chamber	C. I. Engine combustion chamber designs, Stages of combustion, vaporization of fuel droplets and spray formation, air motion, swirl measurement,	Theoretical lecture + practical experience	Paper test + practical test
25	8	Study the fuel injection in C.I. engines	Fuel injection in C. I. Engine, requirements of diesel injection system, types of injection systems, types of fuel injectors and nozzles	Theoretical lecture + practical experience	Paper test + practical test
26	8	Study the fuel specification s	Fuel, specification, fuels for S. I. Engines, Octane number requirement, additives, fuels for C. I. Engine, cetane number requirement, additives, alternate fuels. Fuel – Quality standards for Automotive Engines – Lead free gasoline, low and ultra – low sulphur diesels, LPG, CNG,	Theoretical lecture + practical experience	Paper test + practical test

			Alcohols, Biodiesels, FT diesels, hydrogen.		
27	8	Study the Effect of supercharging on performance of the engine	Effect of supercharging on performance of the engine supercharging tipster- and supercharging, operation of turbocharger. Intercooling, Practical considerations for SI and CI engines	Theoretical lecture + practical experience	Paper test + practical test
28	8	Study the effect of additives on lubrication in engines	Engine friction and lubrication, additives	Theoretical lecture + practical experience	Paper test + practical test
29 ,30	8	Study the pollution and emissions from engines	Pollutants from S. I. Engine, effect of engine maintenance on exhaust emissions, emissions control. Diesel emissions, diesel smoke and its control comparison diesel and gasoline emissions, Current trends in engine technology - Multi-valving, Tuned manifolding, camless valve gearing, EGR, Part-load charge stratification in GDI systems, Current materials and production processes for engine components, Hybrid electric vehicular piston engines and their characteristics. Noise pollution, EMISSION MEASUREMENT, EMISSION CONTROL, Engine Design modifications, fuel modification, evaporative emission control, EGR, air injection, thermal reactors, Water Injection, catalytic converters, Common rail injection system, Particulate traps, Nox converters, SCR systems. GDI and HCCI concepts.	Theoretical lecture + practical experience	Paper test + practical test

Educational institution	**Northern Technical University - Hawija Technical Institute**
Scientific department /center	**Power Mechanics Techniques Automotives Branch**
Course name/code	**Arabic Language NTU103**
Available attendance forms	**My presence**
Semester/year	**First year / first semester**
Number of study hours (total)	**30**
Date this description was prepared	**27-8-2024**

1. Course objectives

Teach the student knowledge of the rules of the Arabic language and how to conduct official correspondence and correspondence between official institutions

2. Course outcomes and teaching, learning and evaluation methods

A- Cognitive objectives

1- Knowing common linguistic errors
2- The difference between dha and dha
3- Know the use of punctuation marks
4- Administrative discourse
5- Administrative correspondence

B - The skills objectives of the course .

1- **The art of communication between state departments**
2- Administrative correspondence

Teaching and learning methods

1- Theoretical lectures

Evaluation methods

1- Theoretical test
2- Duties
3- Reports

C- Emotional and value goals

-1Increasing the student's self-confidence
-2Managing time and not wasting it
-3Increase the spirit of competition

Teaching and learning methods

1- Giving lectures
2- Using modern means (calculators and the Internet(

Evaluation methods

1- Theoretical test
2- Duties
3- Reports

D - General and qualifying transferable skills (other skills related to employability and personal development.(

1- The ability to conduct administrative correspondence correctly
2- Avoid common linguistic mistakes
3- Use punctuation marks

3. Course structure

Chapter one

the week	hours	Required learning outcomes	Name of the unit/topic	Teaching method	Evaluation method
1	2	**introduction**	Introduction to linguistic errors - the marfu' ta', the long ta', and the open ta'	**Theoretical lecture**	**Paper test + report**
2	2	**General rules**	Rules for writing extended and short alifs - solar and lunar letters	**Theoretical lecture**	**Paper test + report**
3	2	**filling**	Dhaad and Dhaa	**Theoretical lecture**	**Paper test + report**
4	2	**filling**	Writing the hamza	**Theoretical lecture**	**Paper test + report**
5	2	**filling**	punctuation marks	**Theoretical lecture**	**Paper test + report**
6	2	**Principles of grammar**	The noun, the verb, and the difference between them	**Theoretical lecture**	**Paper test + report**
7	2	**rules**	Effects	**Theoretical lecture**	**Paper test + report**
8	2	**rules**	The number	**Theoretical lecture**	**Paper test + report**
10-9	4	**rules**	Applications of common linguistic errors	**Theoretical lecture**	**Paper test + report**

11	**2**	**rules**	Noun and Tanween - meanings of prepositions	**Theoretical lecture**	**Paper test + report**
12	**2**	**Addresses**	Formal aspects of administrative discourse	**Theoretical lecture**	**Paper test + report**
14-13	**4**	**Addresses**	The language of administrative discourse	**Theoretical lecture**	**Paper test + report**
15	**2**	**Correspondence**	Examples of administrative correspondence	**Theoretical lecture**	**Paper test + report**

4. Infrastructure

1- classrooms

5. Course development plan

1- Update vocabulary

Principles of Arabic grammar	**-1Required prescribed books**
Collector of Arabic lessons	**-2Main references (sources)**
Arab Language Magazine	**Recommended books and references (scientific journals, reports,...)**
https://brill.com/view/journals/mrkz/mrkz-overview.xml	**B - Electronic references, Internet sites...**

Educational institution	**Northern Technical University - Hawija Technical Institute**
Scientific department / center	**Power Mechanics Techniques Branch / Automotives**
Course name/code	**Computer NTU 102**
Available attendance forms	**My presence**
Semester/year	**First year / first semester**
Number of study hours (total)	**30**
Date this description was prepared	**2024-8-27**

1. Course objectives

Teaching the student about computer generations, its hardware and software components ,the Windows operating system ,what its features are, how to use it, the programs attached to it and how to benefit from them, as well as the concept of computer viruses and how to deal with them.

2. Course outcomes and teaching ,learning and evaluation methods

A- Cognitive objectives

6- Knowledge of computer generations
7- Windows computer operating system and how to use it
8- Knowledge of formatting floppy disks
9- Knowledge of software use
10- Knowledge of accessing the Internet
11- Know the concept of computer viruses and how to get rid of them

B - Objectives Course- specific skills .

3- **Gain the skill of using the Wimdos operating system**
4- Skill in using auxiliary programs such as media player And the scientific calculator calculater
5- Gain the skill of using applications such as programming languages
6- The skill of accessing the Internet and knowing its advantages
7- The skill of eliminating viruses that may infect the computer

Teaching and learning methods

2- Theoretical lectures
3- Practical applications

Evaluation methods

4- Theoretical test
5- Practical test
6- Reports

C- Emotional and value goals

-1Increasing the student's self-confidence
-2Managing time and not wasting it
-3Increase the spirit of competition

Teaching and learning methods

3- Giving lectures
4- Practical applications
5- Using modern means (calculators and the Internet(

Evaluation methods

4- Practical test
5- Theoretical test

D - General and qualifying transferable skills (other skills related to employability and personal development.(

4- Ability to format hard drives
5- Ability to print files
6- The ability to use the Internet and communicate with society and institutions

3. Course structure

Chapter one

the week	hours	Required learning outcomes	Name of the unit/topic	Teaching method	Evaluation method
2 – 1	**4**	**Background Information**	:Introduction to computers their generations, components)hardware andsoftware (	**Theoretical + lecture practical applications**	**+ Paper test practical test**
5-4-3	**6**	**Windows operating system**	Windows : operating system the concept of theWindows system its advantages, basic , requirements, operating the system, components of the main screen of the desktop, the concept oficons the , method of dealing with mouse activities the , importance and components of the task bar, making use ofstart ,to enter programs ,the concept of tasks Loaded exit the system and turn off .the calculator The concept of the window for any program and learning , about its main components dealing withRecycle bin ,my computer ,my Documents	**Theoretical + lecture practical applications**	**+ Paper test practical test**

8-7-6	**6**	**Formatting floppy disks and taking advantage of control programs**	Format floppy disks, copy folders and files, make use of cut and paste and know the properties of disks, folders and files Taking advantage of the Control panel programs: such as themouse , iconthe display icon how to change , the library desktop background, control the screen saver, change the appearance and colors of window menus, and the Remove prog icon. ,add in adding and deleting programs	**Theoretical + lecture practical applications**	**+ Paper test practical test**
11-10-	**6**	**Knowledge of using the run option and some additional programs**	Take advantage of theRun option to execute programs directly and learn how to get helpand .its various methods - Use entertainment programs such asMedia player Window In playing movies - Benefit from additional) programsAccessories (such asthe Calculator - drawing programs to create, save, and retrieve drawings through the .commands it provides Dealing with the Notes window, Notepad ,Word	**Theoretical + lecture practical applications**	**+ Paper test practical test**

13-12	**4**	**Know the types of software**	Software: Types of programs System software: Software application: Programming and computer programming languages:	**Theoretical + lecture practical applications**	**+ Paper test practical test**
14	**2**	**Knowledge of the Internet**	Using the Internet and how to deal with it	**Theoretical + lecture practical applications**	**+ Paper test practical test**
15	**2**	**Knowledge of viruses that infect computers**	The concept of computer viruses: how to become ,infected, their types treatment, and dealing with -them through antivirus programs available within the Windows operating system . environment	**Theoretical + lecture practical applications**	**+ Paper test practical test**

4. Infrastructure

2- classrooms

3- Computer lab

5. Course development plan

2- Update the methodological book

3- Developing the laboratory and increasing scientific vocabulary

Computer principles for beginners	**-1Required prescribed books**
Computer and off-the-shelf software	**-2Main references (sources)**
http://iajet.org/	**Recommended books and references)Scientific journals, reports(...,**
https://isindexing.com/isi/journaldetails.php?id=8735	**B - Electronic references, Internet sites...**

Educational institution	**Hawija - Northern Technical University Technical Institute**
Scientific department /center	**Power Mechanics Techniques Branch Automotives**
Course name/code	**English language2**
Available attendance forms	**My presence**
Semester/year	**Second Year**
Number of study hours (total)	**30**
Date this description was prepared	**2024-8-28**

1. Course objectives

- **primary and prominent role is in teaching writing compositional pieces and simple research related to the field of study**
- **Teaching students to use their skills in scientific research methods**
- **Developing students' skills by speaking and analyzing reading in books .**

B - The skills objectives of the course .

1- Learn how to talk to people
2- Developing the skill of scientific knowledge of engineering topics .
3- Developing skills in using methods to prevent the theft of intellectual rights .
4- Actual participation in class and interaction with students .

- Teaching and learning methods

1. **Providing students with the basics and topics related to previous educational outcomes through presentation or lecture**
2. **Solve a group of examples by groups of students and share the solution with them**
3. **Expand the discussion of speaking English with student participation**
4. **Continuous daily surprise and weekly tests**
5. **Guiding the student to some websites To benefit from it .**

Evaluation methods

1Evaluating students individually by giving them an opportunity to participate in the classroom through... answer the questions .
2- Evaluating students collectively through daily exams with practical and theoretical questions .
2- Evaluating students collectively by giving class assignments such as writing reports or doing assignments .
-4 permanent monthly exams for students to evaluate their general performance and understanding of the subject .
- 5final exams

C- Emotional and value goals

C-1 Observation and perception
C-2 Analysis and interpretation C-3 Conclusion and evaluation C-4 Preparation and evaluation

Teaching and learning methods

1. Using modern means to present the scientific and theoretical aspect, such as Show Data devices ,to attract attention and attract students so that the idea reaches the student better.
2. Giving students class assignments that require them to exert writing skills

Evaluation methods

- Monthly exams
- Daily exams
- Duties
- Regular attendance + daily participation

2. Course structure

Chapter one

the week	hours	Required learning outcomes	Name of the unit/topic	Teaching method	Evaluation method
1	2	The student understood the lecture	Numbers and possessive pronouns	Theoretical lecture	+ discussion Paper test
2	2	The student understood the lecture	, Numbers pronouns and countries	Theoretical lecture	+ discussion Paper test
3	2	The student understood the lecture	Personal and general questions	Theoretical lecture	+ discussion Paper test
4	2	The student understood the lecture	The family and its members	Theoretical lecture	+ discussion Paper test
5	2	The student understood the lecture	Sports, food and drinks	Theoretical lecture	+ discussion Paper test
6	2	The student understood the lecture	Languages and nationalities	Theoretical lecture	+ discussion Paper test
7	2	The student understood the lecture	Time , days and hours	Theoretical lecture	+ discussion Paper test
8	2	The student understood the lecture	Simple present	Theoretical lecture	+ discussion Paper test
9	2	The student understood the lecture	,The simple past years, and years	Theoretical lecture	+ discussion Paper test
10	2	The student understood the lecture	Questions and sentence negation 12 3 English	Theoretical lecture	+ discussion Paper test
11	2	The student understood the lecture	and adverbs in English	Theoretical lecture	+ discussion Paper test
12	2	The student understood the lecture	Signs And trends around us	Theoretical lecture	+ discussion Paper test

13	2	The student understood the lecture	Admiration in the English language	Theoretical lecture	+ discussion Paper test
14	2	The student understood the lecture	Trips And exploration	Theoretical lecture	+ discussion Paper test
15	2	The student understood the lecture	Social problems	Theoretical lecture	+ discussion Paper test

3. Course development plan

The course is always updated within the permitted percentage and by comparing the curriculum with prestigious international universities with a high international ranking

4. Infrastructure

• John & Liz Soars, "New Headway Plus Beginner Student's Book", 10th ed 2014	**-1Required prescribed books**
nothing	**-2Laboratories and equipment**

Educational institution	**Northern Technical University - Hawija Technical Institute**
Scientific department center/	**Power mechanics techniques / automotive/**
Course name/code	**Automotive electronic control systems 1 PMTA212**
Available attendance forms	**My presence**
Semester/year	**Second year /first semester**
Number of study hours (total)	**60**
Date this description was prepared	**2024-8-28**

1. Course objectives

1- Introducing the student to car inspection devices
2- Introducing the student to the types of car inspection devices
3- Introducing the student to the electronic systems involved in the automobile industry
4- Introducing the student to how to control automobile systems

2. Course outcomes and teaching, learning and evaluation methods

A- The cognitive goals

A1 - Ann Known requester Devices Examination in industry the cars -
A2 - Ann Known requester Steps Necessary And what is required Conduct it on Devices Examination And Systems e
A3 - Ann Known Methods Use Devices Examination

.B - The skills objectives of the course

B1.an Can requester Procedure Operations to examine the cars
B2. Can requester Procedure Operations to set Parts affected

Teaching and learning methods
lecture Theory , laboratory , clips Video , project Graduation(

Evaluation methods

the exams Oral tests Written , tests Process , reports Laboratory , examinations quarterly ,

C- Emotional and value goals

C 1. Ann Realize requester Importance Theme the control e Modern in the cars To follow Developments in this the field
C2. Ann Realize requester Importance Use Systems e Modern from Okay the use optimum For time And the effort And materials

Teaching and learning methods

- **lecture Theory , laboratory , project Graduation , visit Field For laboratories manufacturing the cars**

Evaluation methods

Note
Interviews Record Cumulative
. Written exams
.Daily exams and surprises
.Oral questions

D - General and qualifying transferable skills (other skills related to employability .(and personal development

D 1 - that Can requester Use Devices Necessary And materials Occasion
D2 - Acquire the skill of examination and determine its suitability for work

10- Course structure					
the week	hours	Required learning outcomes	Name of the unit/topic	Teaching method	Evaluation method
1	4	that Can requester Identify on Devices to examine Systems the cars Modern	Devices to examine the cars	+ Lecture film + screening laboratory	Daily + exams semester + final exams
2	4	Identify the engine's electronic control unit in terms of components and functions	Electronic control unit	+ Lecture film + screening laboratory	Daily + exams semester + final exams
3	4	Identify the electronic control units for various systems of modern cars	Electronic control unit	+ Lecture film + screening laboratory	Daily + exams semester + final exams
4	4	Explanation of the motor input units (sensors)	Input unit	+ Lecture film + screening laboratory	+ Daily exams semester + final exams
5	4	Explanation of the air temperature sensor with the engine coolant sensor	Sensors	+ Lecture film + screening laboratory	+ Daily exams semester + final exams
6	4	Explaining the first and second oxygen sensors ,in terms of location structure, function, and malfunctions	Sensors	+ Lecture film + screening laboratory	Daily + exams semester + final exams
7	4	Explanation of the catalytic converter with slap sensor in terms of ,location, installation function and malfunctions	Adapter	+ Lecture film + screening laboratory	+ Daily exams semester + final exams
8	4	Explanation of the absolute pressure sensor and the air flow sensor ,in terms of location ,installation, function and malfunctions	Sensors	+ Lecture film + screening laboratory	+ Daily exams semester + final exams
9	4	Explanation of the camshaft position sensor and the	Sensors	+ Lecture film + screening laboratory	Daily + exams semester + final exams

		crankshaft position sensor			
10	4	Explaining the vehicle speed sensor in terms of the types and functions it performs	Sensors	+ Lecture film + screening laboratory	Daily + exams semester + final exams
11	4	Explanation of the free speed valve, its ,installation, types function, and malfunctions	Speed valve	+ Lecture film + screening laboratory	Daily + exams semester + final exams
12	4	Explaining the types of fuel injection valves in modern cars and how to operate them	Fuel injection valves	+ Lecture film + screening laboratory	Daily + exams semester + final exams
13	4	Explaining the lost electronic ignition ,system, how it works its types and features	Electronic ignition system	+ Lecture film + screening laboratory	Daily + exams semester + final exams
14	4	Explaining the single electronic ignition ,system, how it works ,its types, advantages disadvantages, and malfunctions	Electronic ignition system	+ Lecture film + screening laboratory	Daily + exams semester + final exams
15	4	Explaining the electronic throttle control system in terms ,of components ,features, malfunctions and inspection methods	Electronic control system	+ Lecture film + screening laboratory	Daily + exams semester + final exams

11. Infrastructure	
Books	1- Required prescribed books
Reports Scientific And the network Arachnoid	2- Main references (sources
	A- Recommended books and references (...,Scientific journals, reports)
	B- Electronic references, with the Internet

12. Course development plan
to provide Laboratories Integrated Contains Systems the control all of which to provide Devices Examination all(the old And the talk(

12. Infrastructure	
Required reading: CORE TEXTS COURSE MATERIALS OTHERS	A systematic book on the studied subjects and any new lectures prepared by the instructor on the subject.
Special requirements (include for example workshops, periodicals, IT software, websites)	Books, periodicals, software and modern websites related to the subject.
Community-based facilities (include for example, guest Lectures, internship, field studies)	Recent research and scientific journals in the field of competence. The sites of universities, institutes and specialized research centers, engineering and technical sites, as well as the sites of major car companies in the world.

13. Course Development Plan	
Searching for the latest scientific developments in this subject, and collecting scientific material on modern car systems, as well as finding sufficient sources about developments in car technology, and hybrid cars in order to add them to the curriculum in a way that serves its development and keeping pace with the development in automotive science.	
Pre- requests	
Minimum number of students	60
Maximum number of students	120