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

Academic Program Specification Form For The Academic 2021-2022

University: Southern Technical University

College : Shatrah Technical Institute

Department : Mechanical Technology Department

Dean 's Name Head of Department
Assistant lecturer Salam adil ali
Date : 5 /9 /2021
Signature

Dean 's Assistant For Scientific Affairs
Assistant lecturer Turkey Dewan Hussain
Date : 5 /9 /2021
Signature

Quality Assurance And University Performance Manager

Prof.Dr. Mowafaq Abdul Aziz Al-Hasnawi

Date : 5 /9 /2021

Signature

TEMPLATE FOR PROGRAMME SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

PROGRAMME SPECIFICATION

This Program Specification provides a concise summary of the main features of the program and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It is supported by a specification for each course that contributes to the program.

1. Teaching Institution	**Southern Technical University**
2. University Department/Centre	Shatrah Technical Institute
3. Program Title	Mechanical Technology Department
4. Title of Final Award	Diploma in Technical/Mechanical
5. Modes of Attendance offered	annual
6. Accreditation	Accreditation Board for Engineering and Technology (ABET)
7. Other external influences	Scientific field visits, summer training , the library,The internet and the job market
8. Date of production/revision of this specification	1/9/2021
9. Aims of the Program	
1 - Qualifying the students of the department to be familiar with the theoretical and practical aspects of a number of basic sciences such as manufacturing processes And other sciences, as well as the ability to deal with modern technologies used in the field of production techniques Minerals, ensuring a database at a high level of accuracy for the graduate to deal with natural conditions and the exceptional required by the production process.	
2 - Working on developing a distinct personality for the student by developing cultural and social awareness of what qualifies him after Graduation from effective	

contribution to community service.
3- Working to find a suitable scientific environment to prepare highly specialized cadres while developing their ability to work **The theoretical and practical scientific field, which contributes to providing an information base on the nature of the implementation of production work in laboratories and factories.**
4 - Researching modern technologies and topics to identify problems that need more focused scientific research And the deep.

10. Learning Outcomes, Teaching, Learning and Assessment Methods

A. Knowledge and Understanding

A1. Qualifying students of the Department of Mechanical Technology with extensive knowledge in production and manufacturing sciences and mechanical properties of materials and computers so that the graduate can employ that knowledge in the field of production

A2. Qualifying students of the Department of Mechanical Technology to be familiar with the theoretical and practical aspects of a number of sciences
Basic sciences such as mechanics, mathematics, computer design, management and production control,
Metals and their tests, the principles of electrical techniques, the use of various production machines and others

A3. Identify the types of cutting, operating and forming machines used in different production methods and methods
Maintaining it during and after production

A4. Recognize the importance of occupational safety to reduce risks associated with various production processes

A5. Recognize the signs, symbols and terminology necessary to accomplish production requirements

A6. Learn about the applications of static, kinetic, and material resistance

B. Subject-specific skills

B1. The ability to identify abnormal deviations in the levels and nature of the criteria used in determining Production Operations of the Mechanical Technologies Department

B2. Acquires extensive knowledge and skill in the sciences of mechanical technologies, which enables the graduate to employ these Knowledge and skills in industrial production.

B3. The ability to acquire modern methods of learning, evaluating and critical thinking of production techniques cases Mechanics and its various effects

B٤. Ability to manage production projects, oral and written communications, and work

within a team Productivity and the skill of presenting results

B٥ Develops performance and understands the methods and issues of occupational safety at work.

Teaching and Learning Methods

١. Provide students with the basics and additional topics related to previous learning outcomes for skills, to

practical problems

2. Applying the theoretically studied topics on a practical level in the various laboratories of the institution

educational

3. Visiting the practical laboratories corresponding to the specialization within or outside the framework of the educational institution by the staff

Academic and technical

4. Using the classroom, the workshop, the laboratory, the practical side, and summer training as ways to implement the education mechanism

and learning

Assessment methods

١. Daily oral and written exams

2. Semester and final exams.

3. Degrees for participation, questions and discussion of theoretical and practical study topics during the course of the lectures.

4. Grades for homework.

C. Thinking Skills

C 1- Observation and perception that enables the student to reach the relationships between design and production

C 2- Analysis and interpretation that enable the student to reach the relationships between the quality of minerals and the nature of the elements

Employment. Through the implementation of graduation projects programs related to the production of equipment and tools used in the workshops and laboratories

C 3- Conclusion and evaluation by studying the technological path of implementing the requirements of production units

Assessment methods

1. Provide students with the basics and additional topics related to previous learning outcomes for skills, to practical problems

٢. Applying the theoretically studied topics on a practical level in the various laboratories of the institution educational

٣. Visiting the practical laboratories corresponding to the specialization within or outside the framework of the educational institution by the staff Academic and technical

C٤. Using the classroom, the workshop, the laboratory, the practical side, and summer training as ways to implement the education mechanism and learning

٥. Stimulating self-learning skill

٦. Use the display of models and legends

Assessment Methods

1. Daily oral and written exams

2. Semester and final exams.

3. Degrees for participation, questions and discussion of theoretical and practical study topics during the course of the lectures.

4. Grades for homework.

5. Degrees for writing reports and conducting scientific research in the context of the vocabulary of the scientific article

D. General and Transferable Skills (other skills relevant to employability and personal development)
D1. Implementation of preventive maintenance work for laboratory equipment and workshop machines
D٢.Optimal use of computer design programs
D٣.Courses within the scientific plan
D٤.Preparing scientific reports using internet technology

Teaching and Learning Methods

1 - Explanation and clarification
2 - Method of lecture
3- The practical aspect in laboratories and workshops
4 - summer training

Teaching and Learning Methods
1 - Explanation and clarification
2 - Method of lecture
3- The practical aspect in laboratories and workshops
4 - summer training

Assessment Methods

1 - Practical tests
2 - Theoretical tests
3- Preparing reports and studies
4 - Questionnaire forms

11. Program Structure

Level/Year	Course or Module Code	Course or Module Title	Credit rating		
			theoretical	practical	total
first		Manufacturing Operations /1	2	2	840 hours for the first stage during the year
		Material properties	2	—	

	workshops /1	—	6	school
	engineering mechanics	3	2	
	Maths	2	—	
	computer basics/1	—	2	
	engineering drawing	—	3	
	electrical technology	1	2	
	Human rights and democracy	2	—	
	English	2	—	
the second	manufacturing operations	2	2	780 hours per stage second of the year school
	Machine Parts Technology	3	—	
	metal	2	2	
	workshops /2	—	6	
	Graduation research project	—	2	
	industrial drawing	—	3	
	Management and occupational safety	2	—	
	Computer basics/2	—	2	
	English	2	—	

13. Personal Development Planning
A. Deepening teamwork effectively and in a team spirit **B. Time management and prioritization of work organization** **C. The ability to motivate and direct others** **D. Independence at work**
14. Admission criteria .
1. Branch of study: scientific, professional - industrial, including specializations (mechanics - welding - carpentry - metals) **2. Graduation rate: (according to the central admission plan)** **3. The evening study according to the central controls (scientific, professional - industrial) includes specializations (mechanics - welding - carpentry -** **metals - cars**
15. Key sources of information about the program **1. Southern Technical University website** **2. The website of the Technical Institute - Shatrah**

Curriculum Skills Map																			
please tick in the relevant boxes where individual Program Learning Outcomes are being assessed																			
Program Learning Outcomes																			
Year / Level	Course Code	Course Title	Core (C) Title or Option (O)	Knowledge and understanding				Subject-specific skills				Thinking Skills				General and Transferable Skills (or) Other skills relevant to employability and personal development			
first				A2	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4	D1	D2	D3	D4
		Manufacturing Operations /1	**Basic**	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
		Material properties	**Basic**	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
		workshops /1	**Basic**	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
		engineering mechanics	**Basic**	/	/	/	/	/	/	/		/	/	/		/	/	/	
		Maths	**Basic**	/	/	/	/	/	/			/	/	/		/	/	/	/
		computer basics/1	**Basic**	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
		engineering drawing	**Basic**	/	/	/		/	/	/		/	/	/		/	/	/	/
		electrical technology	**Basic**	/	/	/	/	/				/	/	/	/	/	/	/	/
		Human rights and	**Basic**	/	/	/	/	/				/	/	/	/	/	/	/	/

		democracy																	
		English	Basic	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
the second		manufacturing operations		/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
		Machine Parts Technology		/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
		metal		/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
		workshops /2		/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
		Graduation research project		/	/	/		/	/	/	/	/	/	/		/	/	/	
		industrial drawing		/	/	/	/	/	/	/	/	/	/	/		/	/	/	
		Management and occupational safety		/	/	/		/	/	/	/	/	/	/		/	/	/	
		Computer basics/2		/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	

		English		/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	

Academic Program Specification Form

For

Shatrah Technical Institute

Mechanical Technology Department

First class

TEMPLATE FOR COURSE SPECIFICATION COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the program specification.

1. Teaching Institution	Technical Institute - Shatrah
2. University Department/Centre	Mechanical Technology Department
3. Course title/code	Manufacturing Operations /1
4. Program(s) to which it contributes	Weekly (theoretical lessons in the classroom + practical lessons in the workshops)
5. Modes of Attendance offered	Annual
6. Semester/Year	2021-2022
7. Number of hours tuition (total)	(120 hours total) 4 hours (2 theory + 2 practical) per week
8. Date of production/revision of this Specification	
Graduating a cadre capable of working in the fields of manufacturing and production and preparing to contribute to the following works:	
9. Aims of the Course	
Graduating a cadre capable of working in the fields of manufacturing and production and prepared to contribute to the following works: 1- The ability to analyze operations into	

operating elements. 2- Preparing the technological path between the production units. 3- Preparing operating cards and orders for each unit and each machine, calculating the operating elements and time, and loading programs for the units. 4- Make preliminary calculations for operating costs

10· Learning Outcomes, Teaching ,Learning and Assessment Method
A- Knowledge and Understanding A 1- The ability to analyze operations into operating elements A 2- Preparing the technological path between production units A3 - Preparing operating cards and orders for each unit A 4- Preliminary calculations of operating costs A5 - Ability to design and analyze pairing systems A 6- The ability to understand the nature of the work of the parts of the machines and to understand the relationship that binds them with each other
B. Subject-specific skills B1 - Technical skills for studying tolerance tables B 2- Technical skills related to the study of surface finishing methods and schedules operated by different methods B3 - Fixing the workpieces on turning, milling, skimming and grinding machines B4 - Technical skills related to the design and production of gears B 5- Technical skills for working on different forming methods (rolling, drawing, extrusion)
Teaching and Learning Methods
1 - Explanation and clarification 2 - Presentation of models and illustrations 3 - Use of modern projectors 4 - Method of lecture 5- Use of devices and equipment available in laboratories and workshops
Assessment methods

1. Daily oral and written exams
2. Semester and final exams.
3. Degrees for participation, questions and discussion of theoretical and practical study topics during the course of the lectures.
4. Grades for homework.
5. Degrees for writing reports and conducting scientific research in the context of the vocabulary of the scientific article

C. Thinking Skills
C 1- Observation and perception
C 2- Analysis and interpretation
C3 - Conclusion and evaluation
C 4- Preparation and calendar

Teaching and Learning Methods

1. Explanation and clarification
2. Lecture method
3. The practical aspect in laboratories and workshops

Assessment methods

1. Daily oral and written examinations

2. Semester and final exams.

3. Degrees for participation, questions and discussion of theoretical and practical study topics during the course of the lectures.

4. Grades for homework.

5. Degrees for writing reports and conducting scientific research in the context of the vocabulary of the scientific article

11. Course Structure					
Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
١	4 hours per week The first (2 theory + 2 practical)	The student knows the definition of measurement and units of measurement, methods of measuring simple measuring devices	Definition of measurement and units of measurement, error and its causes, methods of measuring main dimensions, simple conveyor measuring devices	(lecture , workshop, laboratory, the side practical)	the exams orality, the exams editorial, the exams the operation exams quarterly, exams final, Evaluation daily)
٢		The student knows the use of measurement feet	Measurement feet (ovens) their parts , uses , types .		
٣		The student knows how to use micrometers	Micrometers, their types, uses, parts, the idea of working a micrometer		
٤		The student knows the measurement templates and their uses	Measurement templates and their uses, types, how to use them.		
٥		The student knows the measurement of angles and	Measuring angles and side shapes Angle measuring tools n Measuring tools		

		lateral forms of angle measurement tools.	(Heggs) of their types		
٦		The student knows the method of measuring the elements of the spiral, the outer and inner diameters, the step and the step diameter measurements, the electronic mechanical comparators.	Method of measuring screw elements, external and internal diameters, step measurement and step diameter, electronic mechanical comparators.		
٧		The student knows the optical device, and modern measurement methods (acoustic frequency measuring devices, optical digital).	Optical device, some modern measurement methods (acoustic frequency measuring devices, optical digital).		
٨		The student knows the filings and their role in industrial development, the Shankara process, the tools used and the processes included in the cold process, used files and their specifications, machines and	Refrigeration and its role in industrial development, the Shankara process, the tools used and the processes included in the cold process, used files and their specifications, machines and their types and methods of attaching artifacts to them, the uses of files, the method of cleaning the files		

		their types, and ways of attaching works to them, the uses of files, the method of cleaning the files.			
٩		The student knows the cutting with the saw, the conditions that must be met in the sawing process, the saw weapon, the crowns and their types, the embryos, the method of ageing and maintaining them, the types of hand hammer heads and the method of fixing them.	Saw cutting, conditions to be met in the sawing process, saw weapon, crowns and their types, embryos, method of ageing and maintenance, types of hand hammer heads and method of fixing them.		
١٠		The student knows drilling and grooving and types of drills, types of primes, types of primers, how to perform the drilling and grooving process	Drilling and granulating and types of drills, types of primes, types of primers, how to perform the drilling and granulating process		
١١		The student knows the models, their types, the	The models, their types, the wood used in their manufacture, the conditions that must be met in the		

		wood used in their manufacture, the conditions that must be met in the model	model.		
١٢	The student knows the tools and devices used in making the model, the aquarium molds, and how to design a simple model	The tools and devices used in the manufacture of the model, the molds of the aquarium, and the method of designing a simple model.			
١٣	The student knows plumbing, a history, methods, the main of plumbing (plumbing, sand casting, metal molds, other methods of plumbing) the advantages of the plumbing process.	Plumbing, history, methods, main plumbing (plumbing sand casting, casting with metal molds, other methods of plumbing) Advantages of the plumbing process.			
١٤	The student knows sand plumbing, plumbing sand, its specifications, components, plumbing sand, devices used and additions to plumbing sand	Plumbing sand, plumbing sand, its specifications, components, plumbing sand, devices used and additives to plumbing sand			

١٥	The student knows the dumps and the tools used in the preparation of sand molds, the process of dumping a simple model and the last seat, the parasitic molds and the molds used	Dumps and tools used in the preparation of sand molds, the process of dumping a simple model and the last seat, loam molds and molds used			
١٦	The student knows the definition of measurement and units of measurement, the error and its causes, methods of measuring the main dimensions, simple measuring devices, conveying	Definition of measurement and units of measurement, error and its causes, methods of measuring main dimensions, simple conveyor measuring devices			
١٧	The student knows the measurements feet (furnitures), their parts, uses, and types.	Measurement feet (furnaces) their parts, uses, and types			
١٨	The student knows micrometers, their types, uses, their parts, the idea	Micrometers, their types, uses, parts, the idea of working a			

	of micrometer work	micrometer			
١٩	The student knows the measurement templates and their uses, their types, how to use them	Measurement templates and their uses, types, and how to use them			
٢٠	The student knows the measurement templates and their uses, their types, and how to use them.	Measurement templates and their uses, types, how to use them.			
٢١	The student knows the measurement of angles and the shapes of the sides.	Angle measurement tools. Measurement forms (Heggs) are their types. Measuring angles and side shapes Angle measuring tools n Measuring tools (Heggs) of their types			
٢٢	The student knows the method of measuring the elements of the spiral, the outer and inner diameters, the step and the step diameter measurements, the electronic mechanical comparators.	Method of measuring screw elements, external and internal diameters, step measurement and step diameter, electronic mechanical comparators.			

٢٣	The student knows the optical device, some modern methods of measurement (acoustic frequency measuring devices, optical digital).	Optical device, some modern measurement methods (acoustic frequency measuring devices, optical digital).			
٢٤	The student knows the process of cutting with the saw, the conditions that must be met in the sawing process, the saw weapon, the crowns and their types, the embryos, the method of ageing and maintaining them, the types of hand hammer heads and the method of fixing them	Saw cutting, conditions to be met in the sawing process, saw weapon, crowns and their types, embryos, method of ageing and maintenance, types of hand hammer heads and method of fixing them			
٢٥	The student knows the process of drilling and granulating and the types of drills, types of primes, types of primers, how to perform the drilling and granulating process.	Drilling and granulating and types of drills, types of primes, types of primers, how to perform the drilling and granulating process			

٢٦	The student knows the models, their types, the wood used in their manufacture, the conditions that must be met in the model.	The models, their types, the wood used in their manufacture, the conditions that must be met in the model.			
٢٧	The student knows the tools and devices used in the manufacture of the model and the aquarium molds, and the method of designing a simple model ...	The tools and devices used in the manufacture of the model and quarry molds and the method of designing a simple model.			
٢٨	The student knows the process of plumbing, methods, the main of plumbing (plumbing sand casting, die-casting, other methods of plumbing) Advantages of the plumbing process ...	plumbing, history, methods, main of plumbing (plumbing sand casting, die-casting, other methods plumbing) Advantages of the plumbing process.			
٢٩	The student knows sand plumbing, plumbing sand specifications, components, plumbing sand, devices used and additions to	Sand plumbing, plumbing sand specifications, components, plumbing sand, devices used and additions to plumbing			

	plumbing sand...	sand.			
٣٠	The student knows the process of dumping and the tools used in preparing sand molds, the process of dumping a simple model and another seat, the parasitic molds and the molds used...	Dumps and tools used in the preparation of sand molds, the process of dumping a simple model and the last seat, loam molds and molds used			

12. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	Manufacturing processes
Special requirements (include for example workshops, periodicals, IT software, websites)	1. Introduction to Production Engineering 2. Production engineering technology and dimension design Metalworking books Metal Forming Books Scientific reports on free websites
Community-based facilities (include for example, guest Lectures , internship , field studies)	Youtube educational site Free books and research sites https://en.wikipedia.org/wiki/Computer-integrated manufacturing http://files.books.elebda3.net/elebda3.net-7468.pdf http://download-engineering-pdf-ebooks.com/80-1-library-books http://download-engineering-pdf-ebooks.com/86-1-library-books https://docs.google.com/viewerng/viewer?url=http://files.books.elebda3.net/elebda3.net-6816.pdf&hl=en http:///vv"v•nv.kemet.co.uk/blog/lapping/how-to-measure-flatness technical-article

13. Admissions	
Pre-requisites	The student from the second stage can be assigned to choose the subject of the graduation project and prepares 1. A preliminary paper on the technological course of implementing the project and the expected calculations for the parts of the project 2. The possibility of developing laboratories equipped with modern unconventional techniques such as laser cutting. 3. Possibility of providing modern devices and equipment, such as devices for measuring the degree of surface finish that are operated by roads. Various operation and configuration

TEMPLATE FOR COURSE SPECIFICATION COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

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1. Teaching Institution	Technical Institute - Shatrah
2. University Department/Centre	Mechanical Technology Department
3. Course title/code	Material properties
4. Program(s) to which it contributes	Weekly (theoretical lessons in the classroom)
5. Modes of Attendance offered	Annual
6. Semester/Year	2021-2022
7. Number of hours tuition (total)	(60 hours total) 2 hours (2 theory) per week
8. Date of production/revision of this specification	
Graduating a cadre capable of working in the fields of manufacturing and production and preparing to contribute to the following works:	
9. Aims of the Course	
1. The student will have good experience in the knowledge of mechanical, thermal, electrical, magnetic and chemical properties of materials that qualifies him to work in the public and private sectors in his field of specialization. 2. The student will be able to know the composition, types and uses of metallic and non-metallic materials.	

10· Learning Outcomes, Teaching ,Learning and Assessment Method
A- Knowledge and Understanding A1. Knowledge of mechanical, thermal, electrical, magnetic and chemical properties of materials A2. Knowledge of the composition of metallic and non-metallic materials, their types and uses.
B. Subject-specific skills B1 - The student will be able to use devices and carry out tests to know the mechanical properties of materials
Teaching and Learning Methods
1 - Explanation and clarification 2 - Presentation of models and illustrations 3 - Use of modern projectors 4 - Method of lecture 5- Use of devices and equipment available in laboratories and workshops
Assessment methods
1. Daily oral and written exams 2. Semester and final exams. 3. Degrees for participation, questions and discussion of theoretical and practical study topics during the course of the lectures. 4. Grades for homework. 5. Degrees for writing reports and conducting scientific research in the context of the vocabulary of the scientific article

C. Thinking Skills
C 1- Observation and perception
C 2- Analysis and interpretation
C3 - Conclusion and evaluation
C 4- Preparation and calendar

Teaching and Learning Methods

1. Explanation and clarification
2. Lecture method
3. The practical aspect in laboratories and workshops

Assessment methods

1. Daily oral and written examinations

2. Semester and final exams.

3. Degrees for participation, questions and discussion of theoretical and practical study topics during the course of the lectures.

4. Grades for homework.

5. Degrees for writing reports and conducting scientific research in the context of the vocabulary of the scientific article

D. General and Transferable Skills (other skills relevant to employability and personal development)
D1. The student will have good experience in the knowledge of mechanical, thermal, electrical, magnetic and chemical properties of materials that qualifies him to work in the public and private sectors in his field of specialization.
D2. The student will be able to know the composition, types and uses of metallic and non-metallic materials.
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11. Course Structure					
Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
١	4 hours per week The first (2 theory)	Learn the classification of engineering materials and their various properties..	Definition of measurement and units of measurement, error and its causes, methods of measuring the main dimensions, simple conveying measuring devices..	(lecture , workshop, laboratory, the side practical)	the exams orality, the exams editorial, the exams the operation exams quarterly, exams final, Evaluation daily)
٢		A review of the firsts of engineering materials..	Measurement feet (furnaces), their parts, uses, and types..		
٣		Learn to classify materials in terms of crystal structure...	Micrometers, their types, uses, parts, the idea of micrometers.		
٤		Learn the types of crystal shapes and know their properties...	Measurement templates and their uses, their types, how to use them.		
٥		Knowing some mechanical properties of materials…	Measuring angles and lateral shapes Angle measuring tools n Measuring tools (Hypes) their types.		
٦		Learn the methods of hardness testing...	Method of measuring screw elements, outer and inner diameters, step and step diameter measurements, electronic mechanical comparators.		
7		Learn the methods of hardness	Optical device, some modern measurement		

		testing	methods (acoustic frequency measuring devices, optical digital).		
٨		Learn the methods of durability testing…	the refrigerator and its role in industrial development, the Shankara process, the tools used and the processes involved in the cold process, used files and their specifications, machines and their types and methods of attaching works to them, the uses of files, the method of cleaning files.		
٩		Learn how to represent the exhaust valve on the drawing board...	Saw cutting, conditions to be met in the sawing process, saw blade, crowns and their types, embryos, how to age and maintain, types of hand hammer heads and how to install them.		
١٠		Knowledge of the electrical properties of materials…	Drilling and grooving, types of drills, types of primes, types of primers, how to perform the drilling and grooving process		
١١		Knowing the mechanical properties of materials…	the magnetic properties of materials (ferromagnetic materials, paramagnetic materials, diamagnetic materials, magnetic retardation, factors affecting magnetism)		
١٢	.	Knowledge of chemical properties of materials…	Chemical properties of materials (corrosion, electrochemical chain, oxidation)		
١٣	.	Learn how to extract iron and know its most important ores...	Iron, its most important ores, extraction, blast furnace, transformers		
١٤	.	Knowing the most important types of carbon steel and its uses...	Carbon steel, its most important types, properties, uses..		
١٥		Knowing the most important types of alloy steel and its uses ...	Alloy steel, its most important types, properties, uses		

١٦		Knowing the most important types of cast iron and its uses...	Cast iron, its most important types, properties, and uses.		
١٧		Knowing the most important types of cast iron and its uses...	Cast iron, its most important types, properties, and uses.		
١٨		Identifying copper metal and its most important alloys, properties and uses...	Copper, its alloys, properties, uses		
١٩		Identify the metal of aluminum and its most important alloys, properties and uses....	Aluminum, its alloys, properties, uses		
٢٠		Identifying nickel metal and its most important alloys, properties and uses..	Nickel, its alloys, properties, and uses.		
٢١		Identifying tin metal and its most important alloy, properties and uses..	Tin, zinc, manganese, its alloys, properties, uses		
٢٢		Identification of white metals and bearing alloys..	Other ferrous alloys: (white metals and bearing alloys).		
٢٣		Introduction to powder metallurgy..	Powder metallurgy (methods of obtaining metallic powders).		
٢٤		Learn about powder pressing and the sintering process...	Powder pressing, the sintering process		
٢٥		Knowledge of ceramic materials...	ceramic materials		
٢٦		Learn the types of glass and ways to manufacture and use it...	Glass, its types, manufacture, uses.		
٢٧		Identifying concrete and its uses...	Concrete, its industrial uses.		
٢٨		Knowledge of polymers, and types of polymerization...	Polymers, polymer molecules, types of polymerization		
٢٩		Learn the properties of plastics and their uses...	Properties and uses of plastics.		
٣٠		Learn the properties of plastics and their uses...	Properties and uses of plastics.		

12. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	**properties of materiel. Maen Yahya Al-Hamdani, Hashem Kazem Al-Jawahiri…**
Special requirements (include for example workshops, periodicals, IT software, websites)	**1 - Principles of metallurgy and materials engineering. F. Bailey, translation - Dr. Hussein Baqir Rahmatullah** **2 - Engineering Metallurgy (Applied Physics Metallurgy) A. Hickens, Translation - George Yacoub, Reda Muhammad Ali** **3 - Metals: Their Structure, Properties and Thermal Coefficients. Dr. Jaafar Taher Al-Haidari Adnan Nehme** **4-Properties of Engineering Materials Dr. Sabah Amin Karkaji, Dr. Walid Muhammad Salih, Dr. Talib Hussein Al-Sharif 5-Engineering Materials and their Tests Dr. Qahtan Khalaf Al-Khazraji, Adel Mahmoud Hussein, Abdel-Gawad Muhammad Sharif 6- Metal Physics Dr. Abdul Razzaq Ismail Khudair…**
Community-based facilities (include for example, guest Lectures , internship , field studies)	**International magazines** **Reputable scientific university websites** **Youtube educational site** **Free books and research sites**
13. Admissions	
Pre-requisites	**Follow up on the scientific development in engineering materials and their properties and add new vocabulary to the course to keep pace with development**

TEMPLATE FOR COURSE SPECIFICATION COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the program specification.

1. Teaching Institution	Technical Institute - Shatrah
2. University Department/Centre	Mechanical Technology Department
3. Course title/code	workshops/1
4. Program(s) to which it contributes	Weekly (practical lessons in the workshops)
5. Modes of Attendance offered	Annual
6. Semester/Year	2021-2022
7. Number of hours tuition (total)	(180 hours total) 6 hours (6 practical) per week
8. Date of production/revision of this specification	
Graduating a cadre capable of working in the fields of manufacturing and production and preparing to contribute to the following works:	
9. Aims of the Course	
Acquisition of manual skill to carry out operation and manufacturing operations using various manual tools and measuring tools and the ability to work and operate operating machines in the manner of operating in the optimal productive manner	

10· Learning Outcomes, Teaching ,Learning and Assessment Method
A- Knowledge and Understanding A1. The ability to analyze the arithmetic operations of the electrical circuit A2. Knowing the parts of the electric circuit and distinguishing between them A3.Knowing the working principle of electrical appliances A4 Maari Kifi took over the electric power
B. Subject-specific skills B 1 . The ability to solve problems in the workplace and learn the skills of different mechanical workshops. B2 - Ability to manage projects
Teaching and Learning Methods
1 - Explanation and clarification 2 - Presentation of models and illustrations 3 - Use of modern projectors 4 - Method of lecture 5- Use of devices and equipment available in laboratories and workshops
Assessment methods
1. Daily oral and written exams 2. Semester and final exams. 3. Degrees for participation, questions and discussion of theoretical and practical study topics during the course of the lectures. 4. Grades for homework. 5. Degrees for writing reports and conducting scientific research in the context of the vocabulary of the scientific article
C. Thinking Skills C 1- Observation and perception C 2- Analysis and interpretation C3 - Conclusion and evaluation C 4- Preparation and calendar

Teaching and Learning Methods

1. Explanation and clarification
2. Lecture method
3. The practical aspect in laboratories and workshops

Assessment methods

1. Daily oral and written examinations
2. Semester and final exams.
3. Degrees for participation, questions and discussion of theoretical and practical study topics during the course of the lectures.
4. Grades for homework.
5. Degrees for writing reports and conducting scientific research in the context of the vocabulary of the scientific article

D. General and Transferable Skills (other skills relevant to employability and personal development)

D 1- Implementation of preventive maintenance work for laboratory equipment and workshop machines

D2 - Optimum use of different gear design tables

D 3- Preparing exercise cards on different machines

D 4- Preparing scientific reports using internet technology

.

11. Course Structure					
Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
١+3	6 hours per week The first (6 practical)	Basic principles in carpentry of models, Finishing of model parts, composite models…	Model carpentry	(lecture , workshop, laboratory, the side practical)	the exams orality, the exams editorial, the exams the operation exams quarterly, exams final, Evaluation daily)
4+9		Casting of metals and their importance, casting of sand molds in a productive way, smelting of metals...	Casting of metals		
10+15		Chilling process, refrigeration process, drilling and granulating process, the importance of maintenance for machinery and equipment…	Refrigeration and maintenance		
16+21		Gas welding, equipment used, CO¬¬2 gas welding, on gas shielded arc welding	welding		

		processes…(Tig,mig)			
22+24		Bending billet cutting equipment, simple slits, calculating the severing and missing actuators singularity .	Plumbing and blacksmithing		
25+30		Turning operations, external ramming, tooth work, cutting speeds, eccentric turning training…	Turning		

12. Infrastructure	
R re · T · M L	Manufacturing processes
· OTHER	
Special requirements (include for example workshops, periodicals, IT software, websites)	1. Introduction to Production Engineering 2. Production engineering technology and dimension design 3.Metalworking books 4.Metal Forming Books 5.Scientific reports on free websites
Community-based facilities (include for example, guest Lectures , internship , field studies)	Youtube educational site Free books and research sites
13. Admissions	
Pre-requisites	

TEMPLATE FOR COURSE SPECIFICATION COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the program specification.

1. Teaching Institution	Technical Institute - Shatrah
2. University Department/Centre	Mechanical Technology Department
3. Course title/code	engineering mechanics
4. Program(s) to which it contributes	Weekly (theoretical lessons in the classroom + practical lessons in the workshops)
5. Modes of Attendance offered	Annual
6. Semester/Year	2021-2022
7. Number of hours tuition (total)	(150 hours total) 5 hours (3 theory + 2 practical) per week
8. Date of production/revision of this specification	
Graduating a cadre capable of working in the fields of manufacturing and production and preparing to contribute to the following works:	
9. Aims of the Course	
1- Effects of forces on bodies while they are at rest or in motion 2 The stresses and emotions that occur in the bodies due to the loads imposed on them	

10· Learning Outcomes, Teaching ,Learning and Assessment Method
A- Knowledge and Understanding A1 An ability to understand the basic principles of statics and kinetics. A2 Ability to analyze forces. – A3 The ability to understand friction and its types. – A4 The ability to analyze the center of gravity of bodies and areas. – A5 The ability to understand Newton's second law of motion. A6 The ability to matter the basic principles of resistive materials.
B. Subject-specific skills B1 Technical skills for studying force analysis methods B2 Technical skills related to studying and implementing the friction test. B3 Technical skills related to the study and implementation of tensile testing and compression testing. B4 Technical skills for studying and carrying out hardness tests.
Teaching and Learning Methods
1 - Explanation and clarification 2 - Presentation of models and illustrations 3 - Use of modern projectors 4 - Method of lecture 5- Use of devices and equipment available in laboratories and workshops
Assessment methods
1. Daily oral and written exams 2. Semester and final exams. 3. Degrees for participation, questions and discussion of theoretical and practical study topics during the course of the lectures. 4. Grades for homework. 5. Degrees for writing reports and conducting scientific research in the context of the vocabulary of the scientific article

C. Thinking Skills
C 1- Observation and perception
C 2- Analysis and interpretation
C3 - Conclusion and evaluation
C 4- Preparation and calendar

Teaching and Learning Methods

1. Explanation and clarification
2. Lecture method
3. The practical aspect in laboratories and workshops

Assessment methods

1. Daily oral and written examinations

2. Semester and final exams.

3. Degrees for participation, questions and discussion of theoretical and practical study topics during the course of the lectures.

4. Grades for homework.

5. Degrees for writing reports and conducting scientific research in the context of the vocabulary of the scientific article

11. Course Structure					
Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
١-13	5 hours per week The first (3 theory + 2 practical)	The student understands (the science of statics, summation, Momentum, poise, friction, center of gravity, moment of inertia) …	static science	(lecture , workshop, laboratory, the side practical)	the exams orality, the exams editorial, the exams the operation exams quarterly, exams final, Evaluation daily)
14-19		The student understands) motion, linear motion, curved trajectory, rotational motion law Newton's second in motion, Work, power, and energy) ...	the science of kinetics		
20-30		The student understands (the science of resistance materials, stresses axial, shear	Stress resistance		

		stress, Torsional stresses, types of loads, patterns of shear forces and bending moments…			

12. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	Engineering mechanics
Special requirements (include for example workshops, periodicals, IT software, websites)	1-Engineerig Mechanics Static & dynamics Bed ford & fowler Higdon & Stiles Engineering Machine Singh , Sadhu Strength of Martial Engineering Mechanics by singer
Community-based facilities (include for example, guest Lectures , internship , field studies)	Youtube educational site Free books and research sites

13. Admissions	
Pre-requisites	The possibility of developing laboratories equipped with modern non-traditional techniques The possibility of providing modern devices and equipment to conduct exams according to the vocabulary of the curriculum

TEMPLATE FOR COURSE SPECIFICATION COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the program specification.

1. Teaching Institution	Technical Institute - Shatrah
2. University Department/Centre	Mechanical Technology Department
3. Course title/code	Maths
4. Program(s) to which it contributes	Weekly (theoretical lessons in the classroom)
5. Modes of Attendance offered	Annual
6. Semester/Year	2021-2022
7. Number of hours tuition (total)	(60 hours total) 2 hours (2 theory) per week
8. Date of production/revision of this specification	
Graduating a cadre capable of working in the fields of manufacturing and production and preparing to contribute to the following works:	
9. Aims of the Course	
Introduce the student to the use of mathematics in other scientific topics and increase his ability to think logically when solving exercises, as well as increase his ability to develop and how to link data with his information to obtain a solution to the problem	

10· Learning Outcomes, Teaching ,Learning and Assessment Method
A- Knowledge and Understanding Introduce the student to the use of mathematics in other scientific subjects and increase his ability to think logically when solving A-1 exercises as well as increasing his ability to develop and how to link data with his information to get a solution to the problem.
B. Subject-specific skills The traditional way of lecturing. The use of modern technologies in some topics (smart board - SHOW DATA) and the use of modern laboratory equipment
Teaching and Learning Methods
1 - Explanation and clarification 2 - Presentation of models and illustrations 3 - Use of modern projectors 4 - Method of lecture 5- Use of devices and equipment available in laboratories and workshops
Assessment methods
1. Daily oral and written exams 2. Semester and final exams. 3. Degrees for participation, questions and discussion of theoretical and practical study topics during the course of the lectures. 4. Grades for homework. 5. Degrees for writing reports and conducting scientific research in the context of the vocabulary of the scientific article
C. Thinking Skills C 1- Observation and perception C 2- Analysis and interpretation C3 - Conclusion and evaluation C 4- Preparation and calendar
Teaching and Learning Methods

1. Explanation and clarification
2. Lecture method
3. The practical aspect in laboratories and workshops

Assessment methods

1. Daily oral and written examinations

2. Semester and final exams.

3. Degrees for participation, questions and discussion of theoretical and practical study topics during the course of the lectures.

4. Grades for homework.

5. Degrees for writing reports and conducting scientific research in the context of the vocabulary of the scientific article

D. General and Transferable Skills (other skills relevant to employability and personal development)
D1 - Implementation of preventive maintenance work for laboratory equipment and workshop machines
D2 - Optimum use of different gear design tables
D 3- Preparing exercise cards on different machines
D 4- Preparing scientific reports using internet technology
.

11. Course Structure					
Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
١-2	٢ hours per week The first (2 theory)	The student knows the determinants...	Determinants and their properties, solving simultaneous equations by the method of determinants (Cremer).	(lecture , workshop, laboratory, the side practical)	the exams orality, the exams editorial, the exams the operation exams quarterly, exams final, Evaluation daily)
3-5		The student knows differentiation, algebra of derivatives, multiple functions...	differentiation, algebra of derivatives, multiple functions		
6-8		The student knows the trigonometric, logarithmic and exponential functions and their derivatives, implicit functions, the chain rule…	Trigonometric, logarithmic and exponential functions and their derivatives, implicit functions, the chain rule.		
9-11		The student knows the graph of functions, the graph of the trigonometric function and the maximum and minimum limits.....	Drawing functions, drawing the trigonometric function and the maximum and minimum limits		
12-13		The student knows the applications of physical differential, velocity and	applications of physical differentiation, speed and acceleration and applications of geometric differential.		

		acceleration and applications of geometric differential			
14-15		The student knows the integration, laws, and its relationship to calculus, definite and indefinite integrals…	Integration, laws, and its relationship to calculus, definite and indefinite integral		
16-19		The student knows implicit integration, applications of geometric integration (areas and volumes) and physical ...	Implicit integration, applications of geometric integration (areas and volumes) and physical		
20-21		The student knows the general methods of substitution and partial integration and the use of exponential and logarithmic partial fractions….	General methods for substitution and partial integration and the use of exponential and logarithmic partial fractions		
22-26		The student knows the discrete, homogeneous and linear differential equations with their different applications...	The discrete, homogeneous and linear differential equations with their different		

			applications.		
27-28		The student knows the vectors (directional and quantitative multiplication and the calculation of angles between vectors….	Vectors (directional and quantitative multiplication and the calculation of angles between vectors).		
29-30		The student knows statistics (principles) and probability theory…	Statistics (principles) and probability theory		

12. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	Available free of charge in the department and the institute's library..
Special requirements (include for example workshops, periodicals, IT software, websites)	Available free of charge in the department and the institute's library..
Community-based facilities (include for example, guest Lectures , internship , field studies)	Scientific journals, reports. Youtube educational website. Websites for free books and research, including:

13. Admissions	
Pre-requisites	1. Creating curricula appropriate to the labor market 2. Holding scientific symposia and conferences aimed at updating curricula 3. Follow up on scientific developments in the field of specialization

TEMPLATE FOR COURSE SPECIFICATION COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the program specification.

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the program specification.

1. Teaching Institution	Technical Institute - Shatrah
2. University Department/Centre	Mechanical Technology Department
3. Course title/code	Computer basics/1
4. Program(s) to which it contributes	Weekly (theoretical lessons in the classroom)
5. Modes of Attendance offered	semester
6. Semester/Year	2021-2022
7. Number of hours tuition (total)	(30 hours total) 2 hours (2 theoretical) 15 weeks
8. Date of production/revision of this specification	
Graduating a cadre capable of working in the fields of manufacturing and production and preparing to contribute to the following works:	
9. Aims of the Course	
Getting to know the operating system and its importance and the tasks it performs, computer components and accessories, office application programs, connection to the Internet and getting to know the outside world	

10· Learning Outcomes, Teaching ,Learning and Assessment Method
A- Knowledge and Understanding A 1- Learn the basics of computers. Familiarity with modern operating systems A 2- Getting to know the main applications Microsoft office 2010 or 2013 A 3- Living with the Internet, learning about networks, dealing with e-mail, and online shopping

B. Subject-specific skills
B1 - work on the computer
B 2- Technical skills related to the knowledge and handling of computer parts.
B3 - Working on a word processor program
B4 - Working on the Excel accounting program
B5 - Working on the presentation program
B6 - Connecting the computer to the Internet
B 7- Creating and dealing with e-mail.
B8- Learn to search for information on the Internet

Teaching and Learning Methods

1 .meeting

2. Description

3. Discussion

Assessment methods

1. Daily oral and written exams
2. Semester and final exams.
3. Degrees for participation, questions and discussion of theoretical and practical study topics during the course of the lectures.
4. Grades for homework.
5. Degrees for writing reports and conducting scientific research in the context of the vocabulary of the scientific article

C. Thinking Skills
C 1- Observation and perception
C 2- Analysis and interpretation
C3 - Conclusion and evaluation
C 4- Preparation and calendar

Teaching and Learning Methods

1. Explanation and clarification
2. Lecture method
3. The practical aspect in laboratories and workshops

Assessment methods
1. Daily oral and written examinations 2. Semester and final exams. 3. Degrees for participation, questions and discussion of theoretical and practical study topics during the course of the lectures. 4. Grades for homework. 5. Degrees for writing reports and conducting scientific research in the context of the vocabulary of the scientific article
D. General and Transferable Skills (other skills relevant to employability and personal development) D1 - Implementation of preventive maintenance work for laboratory equipment and workshop machines D2 - Optimum use of different gear design tables D 3- Preparing exercise cards on different machines D 4- Preparing scientific reports using internet technology .

11. Course Structure					
Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1-5	2 hours per week The first (2 theory)	The student understands the basics of the computer and uses the calculator…	Operating systems, managing files, getting to know the types of computers.	(lecture , workshop, laboratory, the side practical)	the exams orality, the exams editorial, the exams the operation exams quarterly, exams final, Evaluation daily)
6-10		The student understands the hardware of the computer and uses the calculator…	the hardware of the computer, the control panel, the safe mode and the normal mode of the calculator, the definition of the software for the computer, the disk management program		
11-15		The student understands the application programs of the computer and uses the calculator …	To learn about office 2013 or 2010 word processing program.		

12. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	Computers and operating systems

Special requirements (include for example workshops, periodicals, IT software, websites)	Internet
Community-based facilities (include for example, guest Lectures , internship , field studies)	Youtube educational site Free books and research sites **https://en.wikipedia.org/wiki/Computer-integrated manufacturing** **http://files.books.elebda3.net/elebda3.net-7468.pdf** **http://download-engineering-pdf-ebooks.com/80-1-library-books** **http://download-engineering-pdf-ebooks.com/86-1-library-books** **https://docs.google.com/viewerng/viewer?url=http://files.books.elebda3.net/elebda3.net-6816.pdf&hl=ar** **http:///vv"v•nv.kemet.co.uk/blog/lapping/how-to-measure-flatness technical-article**

13. Admissions	
Pre-requisites	**The possibility of providing modern computers and linking the laboratory to the Internet**

TEMPLATE FOR COURSE SPECIFICATION COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

TEMPLATE FOR COURSE SPECIFICATION COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the program specification.

1. Teaching Institution	Technical Institute - Shatrah
2. University Department/Centre	Mechanical Technology Department
3. Course title/code	Engineering Drawing
4. Program(s) to which it contributes	Weekly (practical lessons in the computer lab)
5. Modes of Attendance offered	Annual
6. Semester/Year	2021-2022
7. Number of hours tuition (total)	(90 hours total) 3 hours (3 practical) per week
8. Date of production/revision of this specification	
Graduating a cadre capable of working in the fields of manufacturing and production and preparing to contribute to the following works:	
9. Aims of the Course	
Engineering drawing helps in expanding and strengthening the faculty of imagination and	

visualization, and by means of which he is able to understand, highlight and clarify the different parts of engineering structures.

10· Learning Outcomes, Teaching ,Learning and Assessment Method
A- Knowledge and Understanding A1. How to draw projections and models for a set of exercises is to be trained on a reverse process, which is to draw a stereo if you know its projections . A2 Draw figures using perspective. After the student is trained on how to draw projections and models . A3 Find the missing location . A4. Drawing models in oblique perspective.
B. Subject-specific skills The student will be able to use computers to design, connect and assemble mechanical parts)
Teaching and Learning Methods
1 - Explanation and clarification 2 - Presentation of models and illustrations 3 - Use of modern projectors 4 - Method of lecture 5- Use of devices and equipment available in laboratories and workshops
Assessment methods
1. Daily oral and written exams 2. Semester and final exams. 3. Degrees for participation, questions and discussion of theoretical and practical study topics during the course of the lectures. 4. Grades for homework. 5. Degrees for writing reports and conducting scientific research in the context of the vocabulary of the scientific article

C. Thinking Skills C 1- Observation and perception C 2- Analysis and interpretation C3 - Conclusion and evaluation C 4- Preparation and calendar
Teaching and Learning Methods
1. Explanation and clarification 2. Lecture method 3. The practical aspect in laboratories and workshops
Assessment methods
1. Daily oral and written examinations 2. Semester and final exams. 3. Degrees for participation, questions and discussion of theoretical and practical study topics during the course of the lectures. 4. Grades for homework. 5. Degrees for writing reports and conducting scientific research in the context of the vocabulary of the scientific article
D. General and Transferable Skills (other skills relevant to employability and personal development) The student will be able to use computers to design, connect and assemble mechanical parts .

11. Course Structure					
Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	٣ hours per week The first (٣ practical)	the importance of engineering drawing, using a computer (AutoCAD program) for drawing, drawing board sizes, drawing geometric shapes … …	Drawing geometric shapes	(lecture , workshop, laboratory, the side practical)	the exams orality, the exams editorial, the exams the operation exams quarterly, exams final, Evaluation daily)
2		Adjustments of drawings using the computer (AutoCAD program)…	Adjustments of drawings, drawing aids using a computer (AutoCAD program)		
3		Recognizing the types of lines for engineering drawing…	Types of lines for engineering drawing, engineering processes, dimensional placement		
4+5		Perspective drawing	Perspective drawing		
6+7+8		Projection theory, drawing simple projections...	. projection drawing		
9		Free hand	Free hand drawing		

		drawing			
10+11		Principal deviations, even angle…	Major deviations, even angle.		
12+15		The importance of engineering drawing, using a computer (AutoCAD program) for drawing, drawing board sizes, drawing geometric shapes...	The importance of engineering drawing, using a computer (AutoCAD program) for drawing, drawing board sizes, drawing geometric shapes.		
16+17		Drawing the main projections at even angles…	the main projections		
18+19		The conclusion of the third projection from the two projectors...	The conclusion of the projection		
20+21		Deducing perspective from two or three points...	Deducing perspective		
22+23		Cuts, shapes of cut lines according to the type of material...	Cuts, shapes of cut lines		
24+25		Drawing of cut plots from one plot...	Drawing of cut plots		

26+27		Partially cut projection drawing...	Partially cut projection drawing		
28+29+30		Draw a half-cut projection, draw a zigzag section…	Draw a half-cut projection		

12. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	engineering drawing
Special requirements (include for example workshops, periodicals, IT software, websites)	International magazines
Community-based facilities (include for example, guest Lectures , internship , field studies)	Reputable scientific university websites Youtube educational site Free books and research sites

13. Admissions	
Pre-requisites	Follow up on the scientific development in engineering drawing and modern engineering drawing programs

TEMPLATE FOR COURSE SPECIFICATION COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the program specification.

1. Teaching Institution	Technical Institute - Shatrah
2. University Department/Centre	Mechanical Technology Department
3. Course title/code	electricity technology
4. Program(s) to which it contributes	Weekly (theoretical lessons in the classroom + practical lessons in the workshops)
5. Modes of Attendance offered	Annual
6. Semester/Year	2021-2022
7. Number of hours tuition (total)	(90 hours total) 3 hours (1 theory + 2 practical) per week
8. Date of production/revision of this specification	
Graduating a cadre capable of working in the fields of manufacturing and production and preparing to contribute to the following works:	
9. Aims of the Course	
1- Ability to analyze electrical circuits 2- Connecting electrical circuits 3- Conducting laboratory calculations and measurements of electrical circuits and comparing them with theoretical results 4- Examine the electric motors and transformers and the possibility of making their own calculations 5- Learn about electrical circuit protection devices, how to use them and their principle of	

operation

10· Learning Outcomes, Teaching ,Learning and Assessment Method
A- Knowledge and Understanding A1. The ability to analyze the arithmetic operations of the electrical circuit A2. Knowing the parts of the electric circuit and distinguishing between them A3.Knowing the working principle of electrical appliances A4 Maari Kifi took over the electric power
B. Subject-specific skills B 1 . Technical skills for correct measurement methods B2. Technical skills for studying how to use different measuring devices B3. Technical skills for work How to use hand tools in the right way B4. Technical skills for electrical installation work B 5. Technical skills for working on different linking methods
Teaching and Learning Methods
1 - Explanation and clarification 2 - Presentation of models and illustrations 3 - Use of modern projectors 4 - Method of lecture 5- Use of devices and equipment available in laboratories and workshops
Assessment methods
1. Daily oral and written exams 2. Semester and final exams. 3. Degrees for participation, questions and discussion of theoretical and practical study topics during the course of the lectures. 4. Grades for homework. 5. Degrees for writing reports and conducting scientific research in the context of the vocabulary of the scientific article

C. Thinking Skills C 1- Observation and perception C 2- Analysis and interpretation C3 - Conclusion and evaluation C 4- Preparation and calendar
Teaching and Learning Methods
1. Explanation and clarification 2. Lecture method 3. The practical aspect in laboratories and workshops
Assessment methods
1. Daily oral and written examinations 2. Semester and final exams. 3. Degrees for participation, questions and discussion of theoretical and practical study topics during the course of the lectures. 4. Grades for homework. 5. Degrees for writing reports and conducting scientific research in the context of the vocabulary of the scientific article
D. General and Transferable Skills (other skills relevant to employability and personal development) D1. Optimal use of measuring instruments D2. The student will be able to know the composition, types and uses of metallic and non-metallic materials. D3. How to calibrate different measuring devices - D4. Preparing scientific reports using internet technology .

11. Course Structure

Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
١	٣ hours per week The first (١ theory + ٢ practical)	First - the basics of electricity	units of measurement	(lecture , workshop, laboratory, the side practical)	the exams orality, the exams editorial, the exams the operation exams quarterly, exams final, Evaluation daily)
٢		Electrical units and symbols, simple electrical circuit, current strength of electromotive force ...	Ohm's law		
٣		Potential difference, Ohm's law, ways to connect resistors (series, parallel, compound) Practical examples of solving electrical circuits...	straight hook and parallel		

٤		Second: alternating current (variable) Methods of obtaining alternating current, types of electric power plants ...	alternating current		
٥		Sine wave, waveform of current with time and frequency, definition of the effective value of alternating current and voltage ...	the effective value of current and voltage		
٦		Knowledge of the functions and power factor, applications and examples of the use of alternating current in practical life. Third: Electromagnetism ...	Power Factor		
٧		Magnetic field, properties of the field, properties	electromagnetism		

		of magnetism, types of magnetic materials, definitions (field density, field strength, magnetic driving force),			
٨		The magnetic effect of electric current Applications on the use of the property of the magnetic force of attraction...	the magnetic field		
٩		Three-way alternating current Single Face Alternating Current, Three Phase Alternating Current, Phase Marking Method, External Wiring System External ...	Three Phase Alternating Current		
١٠		The method of connection in the form of a star (Y), the face current and the line current from the star, the face voltage and the line voltage from the star, the power in the case of a three-phase system, the method of	star hook (Y)		

		connecting electrical loads… .			
١١		Delta (Δ) connection method, face current and line current in the case of delta face voltage and line voltage, power applications and examples of star and delta connection. Fifthly: Electrical transformers Sixth: Three-phase alternating current motors...	delta linkage(Δ)		
١٢		Types of motors, three-phase induction motors, their types, uses ...	Current motors three face		
١٣		Structure of impact motors (three-phase inductance), principle of magneto-rotating theory, principle of working theory of motors...	Principle of electric motors		
١٤		Methods of starting the movement in three-phase induction motors ...	Methods of starting the movement in induction motors		

١٥		Control methods for changing the speed of three-phase induction motors (change of poles, change of source voltage, change of frequency, change of direction of rotation) Seventh: Single-phase alternating current motors...	Control and control of changing the speed of induction motors		
١٦		Single-sided impact motors, their types, installation, uses, reversal of their cycles... .	Unidirectional impact actuators		
١٧		Starting Capacitor Single Unit Impact Motors, Their Installation, Uses ...	Capacitor Single Unit Impact Motors		
١٨		Single-motor split-face motors, their composition, uses...	Single-motor split-face motors		
١٩		Eighth: Protection (protection) for engines Fuses, their types, melting factor ...	Protection (protection) for engines		
٢٠		Circuit breakers, thermal monitors against overloading...	Cycle breakers		

٢١		Ninth – Methods for determining engine malfunctions ...	Types of engine malfunctions		
٢٢		The methods used to determine faults are the inability of the engine to rotate, the engine is rotating at a speed less than its perfect speed… .	Engine unable to rotate		
٢٣		Engine overheating while spinning, engine running noisy...	Engine overheating while spinning		
٢٤		How to treat and repair each of the previous faults ...	fix each of the previous faults		
٢٥		Control and control circuits used to operate motors manually and automatically.	Starting the engines manually and automatically		
٢٦		Safety and Sustainability of Engines…	Safety and Sustainability of Engines		
٢٧		Engine maintenance methods, required time periods, types of	Engine maintenance		

		maintenance…			
٢٨		Lubrication, lubrication, cleaning, axle bearings...	sustaining motors		
٢٩	...	Industrial security, occupational safety during the maintenance process	Occupational safety		
٣٠		Discussing Reports	Discussing Reports		

12. Infrastructure	
R re . . M .	1-Electrical Technology by – Theraga 2- Electrical Technology by – Hughes 3- Electrical Technology by – Erick
Special requirements (include for example workshops, periodicals, IT software, websites)	Electrical Basics Books Engines and Electrical Machines Books Scientific reports on free websites
Community-based facilities (include for example, guest Lectures , internship , field studies)	Youtube educational site Free books and research sites http://www.kutub.info/library/category/13 https://en.wikipedia.org/wiki/Electricity https://simple.wikipedia.org/wiki/Electricity http://science.howstuffworks.com/electricity.htm

13. Admissions	
Pre-requisites	The student from the second stage can be assigned to choose the subject of the graduation project and prepare an initial paper on the technological path for the implementation of the project and the expected calculations for the parts of the project The possibility of developing laboratories equipped with modern non-traditional technologies such as operating engines automatically I can provide modern devices and equipment such as three-phase devices

TEMPLATE FOR COURSE SPECIFICATION COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the program specification.

1. Teaching Institution	Technical Institute - Shatrah
2. University Department/Centre	Mechanical Technology Department
3. Course title/code	Human rights and democracy
4. Program(s) to which it contributes	Weekly (theoretical lessons in the classroom)
5. Modes of Attendance offered	Semester
6. Semester/Year	2021-2022
7. Number of hours tuition (total)	(30 hours total) 2 hours (2 theory) ١٥ week
8. Date of production/revision of this specification	
Graduating a cadre capable of working in the fields of manufacturing and production and preparing to contribute to the following works:	
9. Aims of the Course	
1. That the student be able to familiarize the student with the principles and values of human rights, introduce them to them, and raise generations to respect and adhere to them. 2. Learn about public freedoms and what these freedoms are in their details 3. The student is acquainted with the continuous awareness of human rights and the fundamental freedoms associated with them 4. He fights everything that aims to ignore it, undermine it, or touch its sanctity 5. Recognize the concept of democracy and its relationship to public liberties	

10· Learning Outcomes, Teaching ,Learning and Assessment Method
A- Knowledge and Understanding A 1- Continent to learn about the values and principles that a person can possess A 2- The meaning of human rights in ancient times, their importance and how to apply them A 3- Familiarization with governmental and non-governmental organizations concerned with human rights, how they work and their importance A 4- Preliminary calculations of operating costs A 5. Guarantees of respect and protection of human rights at the national level. Guarantees in the constitution and laws. Guarantees in constitutional oversight. Guarantees in freedom of the press and public opinion. The role of non-governmental organizations in respecting and protecting human rights. A 6- The ability to understand the nature of the work of the parts of the machines and to understand the relationship that links them with each other
B. Subject-specific skills B1 - Skills for studying human rights and their importance B 2- The skills of studying the constitution and its importance
Teaching and Learning Methods
1 - Explanation and clarification 2 - Presentation of models and illustrations 3 - Use of modern projectors 4 - Method of lecture 5- Use of devices and equipment available in laboratories and workshops
Assessment methods
1. Daily oral and written exams 2. Semester and final exams. 3. Degrees for participation, questions and discussion of theoretical and practical study topics during the course of the lectures. 4. Grades for homework.

5. Degrees for writing reports and conducting scientific research in the context of the vocabulary of the scientific article
C. Thinking Skills C 1- Observation and perception C 2- Analysis and interpretation C3 - Conclusion and evaluation C 4- Preparation and calendar
Teaching and Learning Methods
1. Explanation and clarification 2. Lecture method 3. The practical aspect in laboratories and workshops
Assessment methods
1. Daily oral and written examinations 2. Semester and final exams. 3. Degrees for participation, questions and discussion of theoretical and practical study topics during the course of the lectures. 4. Grades for homework. 5. Degrees for writing reports and conducting scientific research in the context of the vocabulary of the scientific article
D. General and Transferable Skills (other skills relevant to employability and personal development) D1. Preparing scientific reports using internet technology .

11. Course Structure					
Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
١	٢ hours per week The first (2 theory)	Human Rights: Concept, Objectives…	Human Rights	(lecture , workshop, laboratory, the side practical)	the exams orality, the exams editorial, the exams the operation exams quarterly, exams final, Evaluation daily)
٢		A- Mesopotamian Civilization B- Human Rights in Greek Civilization C- Human Rights in Roman Civilization...	Human Rights in Mesopotamia Civilization and Greek and Roman Civilization		
٣		The position of heavenly laws on human rights: 1- Christianity 2- Islamic religion...	Heavenly laws are human rights		
٤		Western Civilization and Human Rights: 1- Legal Sources of Human Rights in Britain: A - The Magna Carta of 1215 AD - The Petition of Rights in 1628 AD. ...	Western civilization and human rights		
٥		The natural school and social contract	The natural school and social		

		theory…	contract theory		
٦		The concept of administrative and financial corruption. Types of corruption by size. Types of corruption in terms of prevalence ...	The concept and types of administrative and financial corruption. Species		
7		The Impact of Corruption: Entities Responsible for Combating Corruption Globally…	Entities Responsible for Combating Corruption Globally		
٨		Democracy: its definition: democracy as a form of government…:	Democracy: its definition		
٩		Democracy as a pattern of human relations...	Democracy as a pattern of human relations		
١٠		Liberalism / Political Democracy / Its Characteristics…	Liberalism		
١١		Implementation of political democracy…	political democracy		
١٢	.	Economic-social democracy, characteristics of economic-social democracy, the role of the state in implementing economic-social democracy...	Economic-social democracy		
١٣	.	Forms of democracy (direct democracy - semi-direct democracy - representative	forms of democracy		

		democracy)...			
١٤		Forms of democracy (direct democracy - semi-direct democracy - representative democracy)... …	forms of democracy		
١٥		Comprehensive review of the mentioned materials to prepare for exams...	Comprehensive review		

12. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	**Human Rights & Democratic**
Special requirements (include for example workshops, periodicals, IT software, websites)	**human rights and democracy books**
Community-based facilities (include for example, guest Lectures , internship , field studies)	**Scientific reports on free websites** **books on human rights** **Youtube educational site** **Free books and research sites**

13. Admissions	
Pre-requisites	The student can be assigned to make reports on a human rights topic The possibility of conducting field visits to a human rights organization to learn more about its work and how to manage it and facilities provided in this field.

TEMPLATE FOR COURSE SPECIFICATION COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the program specification.

1. Teaching Institution	Technical Institute - Shatrah
2. University Department/Centre	Mechanical Technology Department
3. Course title/code	ENGLISH
4. Program(s) to which it contributes	Weekly (theoretical lessons in the classroom)
5. Modes of Attendance offered	semester
6. Semester/Year	2021-2022
7. Number of hours tuition (total)	(30 hours total) 2 hours (2 theoretical) 15 weeks
8. Date of production/revision of this specification	
Graduating a cadre capable of working in the fields of manufacturing and production and preparing to contribute to the following works:	
9. Aims of the Course	
1. Preparing students to specialize in English by teaching them different language skills 2. Identifying various methods and methods that help the student to master teaching skills effectively 3. Enabling the student to conduct theoretical, experimental and applied research	

10· Learning Outcomes, Teaching ,Learning and Assessment Method
A- Knowledge and Understanding A1 - Understand the purpose of studying foreign languages as a means of dialogue and understanding cultures. A2 - Emphasizing the consolidation of the concept of sound and correct languages in the structure. A3 - Knowledge and understanding of modern teaching methods and methods, in addition to the methods of assessment and evaluation used in English language teaching.
B. Subject-specific skills B1 - Identify the skills of written and oral exams B2 - Develop language teaching skills through balancing the use of those skills B3 - Finding training opportunities to develop speaking and listening skills
Teaching and Learning Methods
1 .meeting 2. Description 3. Discussion
Assessment methods
1. Daily oral and written exams 2. Semester and final exams. 3. Degrees for participation, questions and discussion of theoretical and practical study topics during the course of the lectures. 4. Grades for homework. 5. Degrees for writing reports and conducting scientific research in the context of the vocabulary of the scientific article
C. Thinking Skills C 1- Observation and perception C 2- Analysis and interpretation C3 - Conclusion and evaluation

C 4- Preparation and calendar
Teaching and Learning Methods
1. Explanation and clarification 2. Lecture method 3. The practical aspect in laboratories and workshops
Assessment methods
1. Daily oral and written examinations 2. Semester and final exams. 3. Degrees for participation, questions and discussion of theoretical and practical study topics during the course of the lectures. 4. Grades for homework. 5. Degrees for writing reports and conducting scientific research in the context of the vocabulary of the scientific article

11. Course Structure					
Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
١	2 hours per week The first (2 theory)	**Unit one :getting to know you tenses Questions Questions words**	**Unit one :getting to know you tenses Questions Questions words**	(lecture , workshop, laboratory, the side practical)	the exams orality, the exams editorial, the exams the operation exams quarterly, exams final, Evaluation daily)
٢		Unit two : live Present tenses Present simple Present continuous Have /have got „Mil	the way we live Present tenses Present simple Present continuous Have /have got „Mil		
٣		Unit three: it all went wrong Past tenses Past simple Past continuous	it all went wrong Past tenses Past simple Past continuous		
٤		Unit four Jet's go shopping Quantity Much and many Some and any Something ,anyone,nobody,everywhere A few, a little, a lot of Articles	Jet's go shopping Quantity Much and many Some and any Something ,anyone,nobody,everywhere A few, a little, a lot of Articles		
٥		Unit Five :what do you want to do Past tenses Verb patterns Future intentions Going to and will	what do you want to do Past tenses Verb patterns Future intentions Going to and will		
٦		Unit six: tell me! What's it like? What's it like? Comparative and superlative Adjectives	tell me! What's it like? What's it like? Comparative and superlative Adjectives		
٧		Unit seven :fame Present perfect and past simple For and since Tense revision	fame Present perfect and past simple For and since Tense revision		
٨		Unit eight: do's and don'ts Have(got) to Should must	do's and don'ts Have(got) to Should must		
٩		Unit nine: going places Time and	going places Time and conditional		

		conditional clauses what if	clauses what if		
١٠		Unit ten: scared to death Verbs patterns Infinitives What ,etc. Infinitive Something ,etc. Infinitive	scared to death Verbs patterns Infinitives What ,etc. Infinitive Something ,etc. Infinitive		
١١		Unit eleven :things that changed the world Passives	things that changed the world Passives		
١٢		Unit twelve :dreams and reality Second conditional might	dreams and reality Second conditional might		
١٣		Unit thirteen :earning a living Present perfect continuous Present perfect simple versus Continuous(	earning a living Present perfect continuous Present perfect simple versus Continuous(		
١٤		Unit fourteen: family ties Present perfect and past perfect and clarification Reported statements	family ties Present perfect and past perfect and clarification Reported statements		
١٥		Unit fifteen : revision	revision		

12. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	New Headway Pre intermediate
Special requirements (include for example workshops, periodicals, IT software, websites)	New Headway Pre intermediate
Community-based facilities (include for example, guest Lectures , internship , field studies)	Youtube educational site Free books and research sites

13. Admissions	
Pre-requisites	Use of modern audio testing equipment

Academic Program Specification Form
For
Shatrah Technical Institute
Mechanical Technology Department
Second class

TEMPLATE FOR COURSE SPECIFICATION COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the program specification.

1. Teaching Institution	Technical Institute - Shatrah
2. University Department/Centre	Mechanical Technology Department
3. Course title/code	Manufacturing Operations /2
4. Program(s) to which it contributes	Weekly (theoretical lessons in the classroom + practical lessons in the workshops)
5. Modes of Attendance offered	Annual
6. Semester/Year	2021-2022
7. Number of hours tuition (total)	(120 hours total) 4 hours (2 theory + 2 practical) per week
8. Date of production/revision of this specification	
Graduating a cadre capable of working in the fields of manufacturing and production and preparing to contribute to the following works:	
9. Aims of the Course	
1. The ability to analyze processes into operating elements 2. Preparing the technological path between production units 3. Preparing running cards and orders for each unit and for each machine, calculating items, running time and loading software for units 4. Preliminary calculations for operating costs	

10· Learning Outcomes, Teaching ,Learning and Assessment Method

A- Knowledge and Understanding

A1 - The ability to analyze operations into operating elements

A2 - Preparing the technological path between production units

A3 - Preparing cards and operating orders for each unit

A4 - Preliminary calculations of operating costs

A5 - The ability to design and analyze pairing systems

A6 - The ability to understand the nature of the work of the machine parts and the relationship they have with each other

B. Subject-specific skills

B1 - - Skills objectives of the course.

B1 - Technical skills for studying tolerance tables

B2 - Technical skills for studying surface finishing methods and schedules operated by different methods

B3 - Technical skills for work fixing works on lathes, milling, skimming and grinding machines

B4 - Technical skills for gear design and production

B5 - Technical skills for working on different forming methods (rolling, drawing, extrusion).

Teaching and Learning Methods

1 - Explanation and clarification 2 - Presentation of models and illustrations 3 - Use of modern projectors 4 - Method of lecture 5- Use of devices and equipment available in laboratories and workshops
Assessment methods
1. Daily oral and written exams 2. Semester and final exams. 3. Degrees for participation, questions and discussion of theoretical and practical study topics during the course of the lectures. 4. Grades for homework. 5. Degrees for writing reports and conducting scientific research in the context of the vocabulary of the scientific article
C. Thinking Skills C 1- Observation and perception C 2- Analysis and interpretation C3 - Conclusion and evaluation C 4- Preparation and calendar
Teaching and Learning Methods
1. Explanation and clarification 2. Lecture method 3. The practical aspect in laboratories and workshops
Assessment methods
1. Daily oral and written examinations 2. Semester and final exams. 3. Degrees for participation, questions and discussion of theoretical and practical

study topics during the course of the lectures.

4. Grades for homework.

5. Degrees for writing reports and conducting scientific research in the context of the vocabulary of the scientific article

D. General and Transferable Skills (other skills relevant to employability and personal development)

D1 - Execution of preventive maintenance works for laboratory equipment and workshop machines

D2 - Optimum use of different gear design schedules and connecting parts, permanent and temporary

D3 - Preparing exercise cards on different machines with the appropriate gears to produce teeth for spirals

D4 - Preparing scientific reports using internet technology

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11. Course Structure					
Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
١	4 hours per week The first (2 theory + 2 practical)	The student knows manufacturing processes and their classification…	A general introduction to manufacturing processes, classification of manufacturing processes, initial formation, operating processes, surface finishing processes, bonding processes, and other processes that affect the change of properties.	(lecture , workshop, laboratory, the side practical)	the exams orality, the exams editorial, the exams the operation exams quarterly, exams final, Evaluation daily)
٢		The student knows the manufacturing processes by removing feathers and manufacturing processes without removing feathers..	Classification of manufacturing processes, manufacturing processes by removing feathers (traditional turning, traditional milling and digital control machines, skimming, grinding), classification of manufacturing processes without removing feathers (plumbing, welding, forming Extrusion, rolling, rolling and forging), classification of		

			manufacturing processes by unconventional (modern) methods Classification of manufacturing processes, manufacturing processes by removing feathers (traditional turning, traditional milling and digital control machines, skimming, grinding), classification of manufacturing processes without removing feathers (plumbing, welding, forming Extrusion, rolling, rolling and forging), classification of manufacturing processes by unconventional (modern) methods		
٣		The student knows the basic elements of the machining process...	Manufacturing processes by removing feathers, general concepts, the materials used and economic feasibility, the machines used in the machining process, the basic elements of the machining process.		
٤		The student knows the turning process	the traditional turning process, the tail lathe, the turret lathe, the technical		

		and the technical specifications of the lathe, the angles of the turning pen, the classification of the turning pen…	specifications of the lathe, the angles of the turning pen, the classification of the turning pen in terms of the materials it is made of, the types of the turning pens, the types of the angles of the pens Turning, the effect of pen angles on the cutting process, the theory of feather formation		
٥		The student knows the methods of fixing the workpieces, cutting conditions and calculating the cutting speed and cutting times…	Methods of fixing the workpieces on the lathe, the basic factors in choosing the cutting speed, cutting conditions and calculating the cutting speed and cutting times, the use of special tables for the basic elements of the machining process, speed maps and the illustration.		
٦		The student knows the processes of teething. And their classification…	Teething operations, types of teeth used and their classification according to use, systems used in classifying teeth, mechanical operation of teeth and calculating times, mechanical operation of cons, types of cons and methods of implementation on the lathe		
٧		The student knows the sources of heat generated during the cutting process, the emerging cut-off, its benefits and harms…	Sources of heat generated during the cutting process, the emerging cut-off, the benefits and harms of the emerging cut-off, the use of cooling during the cutting process, functions and properties of the coolant, types of coolants and their classification.		
٨		The student	other side uses of the traditional lathe, maintenance of the lathe, production		

		knows the operation cards...	planning, an introduction to the operation cards or the technological path.		
٩		The student knows the technological path and how to benefit from the operating card…	The concept of the technological path and how to take advantage of the operating card to make a specific path, preparing the operating card for a specific product and calculating the times		
١٠		The student knows preparing the operating card for a specific product and calculating the times...	Tower mapping machines, programmed lathe machines, general idea, automation operations, the work mechanism of programmed machines,		
١١		The student knows the programming of digital control machines…	the processes of installing the material and zeroing the axes of the digital control machines, programming the digital control machines, the preparatory, auxiliary and additional commands and their symbols, exercises.		
١٢		The student knows the			

		skimming process… the skimming process, its movements and products, the types of skimming machines (the butcher, the vertical, the tap, the cart), the capabilities and products of each type, the parts and components of the skimming machines, the mechanics of the cutting stroke and the return stroke.			
١٣		The student knows the accessories of	Skimming machine accessories (stabilization equipment, dividing		

		skimming machines (stabilization equipment, dividing equipment)…	equipment), types of skimming process, tables of cutting rates and calculating the time of skimming.		
١٤		The student knows the grinding process, an introduction to the grinding mechanism, the movements ...	the grinding process, an introduction to the grinding mechanism, the basic movements, the classification of grinding stones, the symbols of the grinding stones.		
١٥		The student knows the types of grinding machines and the products of each machine…	Types of grinding machines and the products of each machine, surface grinding machines (horizontal, vertical), cylindrical grinding machines (external, internal, central and floating), grinding machines of the number of pieces.		
١٦		The student knows the milling process... the milling process, its movements	the milling process, its movements and products, types of milling machines, components and parts of milling machines, types of milling knives and their uses.		

		and products, types of milling machines, components and parts of milling machines, types of milling knives and their uses.			
١٧		The student knows the accessories of milling machines, ways to install milling machines…	Milling machine attachments, ways to install milling machines (directly by clamps, and indirect by types of clamps and angles), ways to install knives, fixing by rotary clamps and fixed clamps.		
١٨		The student knows the division head device, division methods…	the division head device, division methods (direct, indirect, differential or differential, angle division), types of milling operations and the products of each operation..		
١٩		The student	Types of gears, cylindrical gear milling, technical		

		knows the types of gears, the technical specifications of gears…	specifications of the cylindrical gear, cylindrical gear elements, the selection table of the gear milling knife number..		
٢٠		The student knows helical gear, helical gear components and technical specifications…	Helical gear, helical gear components and technical specifications, milling knife selection and gear shift calculations.		
٢١		The student knows the bevel gears and their technical specifications…	Bevel gears and their technical specifications, calculating the milling and turning angle of the bevel gear, rack and pinion gears and worm gears.		
٢٢		The student knows the milling time calculations...	the milling time calculations, the milling time calculation in the case of a closed duct, the open duct on one side, on two sides, calculating the milling time in the case of using the circumferential cut knife.		
٢٣		Unconventional	Unconventional cutting		

		cutting machines…	machines: Electric spark cutting, ultrasonic cutting, advantages and disadvantages of the process, limitations of use and products, design of cutting kit, removal rate of metal..		
٢٤		The student knows the process of electrochemical cutting of metals...	Electrochemical cutting of metals, advantages, disadvantages, products, design of the cutting kit, removal rate of metal..		
٢٥		The student knows the process of waterjet cutting, laser cutting…	waterjet cutting, laser cutting, advantages, disadvantages, products, cutting head design, studying the variables of each method and their impact on the removal rate and accuracy.		
٢٦		The student knows the formation of	metal formation, the theory of formation, the basics of cold and hot forming, types of formation.		

		metals, the theory of formation …			
٢٧		The student knows the process, the rolling process, the extrusion process…	the rolling process, the foundations of the rolling process, the rolling methods and their products, the type of machines used. Extrusion process, extrusion theory, direct extrusion, indirect extrusion, extrusion process products, material dimensions.		
٢٨		The student knows the process of cutting and perforating ...	the process of cutting and perforating, the foundations of the shearing process, types of molds, dimensions of the material, calculating the shear capacity.		
٢٩		The student knows the process of dumping and the tools used in preparing sand molds, the process of	the dumps and the tools used in the preparation of sand molds, the process of dumping a simple model and another seat, the parasitic molds and the molds used		

		dumping a simple model and another seat, the parasitic molds and the molds used ...			
٣٠		The student knows the unconventional methods…	in metal forming Unconventional methods in metal forming, (hydrostatic forming, magnetic batch forming, hydroelectric forming, forming with an explosive charge) Characteristics and characteristics of each process.		

12. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	Manufacturing processes
Special requirements (include for example workshops, periodicals, IT software, websites)	1. Introduction to Production Engineering 2. Production engineering technology and dimension design Metalworking books Metal Forming Books Scientific reports on free websites
Community-based facilities (include for example, guest	Youtube educational site

Lectures , internship , field studies)	Free books and research sites https://en.wikipedia.org/wiki/Computer-integrated manufacturing http://files.books.elebda3.net/elebda3.net-7468.pdf http://download-engineering-pdf-ebooks.com/80-1-library-books http://download-engineering-pdf-ebooks.com/86-1-library-books https://docs.google.com/viewerng/viewer?url=http://files.books.elebda3.net/elebda3.net-6816.pdf&hl=en http:///vv"v•nv.kemet.co.uk/blog/lapping/how-to-measure-flatness technical-article

13. Admissions	
Pre-requisites	Creating curricula appropriate to the labor market. Holding scientific symposia and conferences aimed at updating the curricula. Follow up on scientific developments in the field of specialization

TEMPLATE FOR COURSE SPECIFICATION COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the program specification.

1. Teaching Institution	Technical Institute - Shatrah
2. University Department/Centre	Mechanical Technology Department
3. Course title/code	Machine parts technology
4. Program(s) to which it contributes	Weekly (theoretical lessons in the classroom)
5. Modes of Attendance offered	Annual
6. Semester/Year	2021-2022
7. Number of hours tuition (total)	(90 hours total) 3 hours (3 theory) per week
8. Date of production/revision of this specification	
Graduating a cadre capable of working in the fields of manufacturing and production and preparing to contribute to the following works:	
9. Aims of the Course	
The machine parts aim to clarify the role of the mechanical parts in the machine system and the relationship that connects the parts to each other and how to make some calculations to design these parts. Determine all the factors affecting them.	

10· Learning Outcomes, Teaching ,Learning and Assessment Method

A- Knowledge and Understanding

A1 - The ability to strip and identify the resistance of materials

A2 - What are the types of machine parts and how to assemble them?

A3 - The ability to design machine parts A4 - The ability to define the types of connecting parts of machines, permanent connection, welding joints and riveted connections

A 5 - The ability to identify the types of connecting parts of machines, temporary fastening, such as connecting spirals

A6 - The ability to design gears, shafts, bearings, cams and belts

B. Subject-specific skills

B١ - Technical skills in the design and manufacture of gears and the method of connecting them to the transmission of power

B2 - Technical skills for spring design and where to use it

B3 - Technical skills related to the design work of welding joints, plugs and any part of the machine parts mathematically and linking them to transmit movement

Teaching and Learning Methods

1 - Explanation and clarification

2 - Presentation of models and illustrations

3 - Use of modern projectors

4 - Method of lecture

5- Use of devices and equipment available in laboratories and workshops

Assessment methods

1. Daily oral and written exams
2. Semester and final exams.
3. Degrees for participation, questions and discussion of theoretical and practical study topics during the course of the lectures.
4. Grades for homework.
5. Degrees for writing reports and conducting scientific research in the context of the vocabulary of the scientific article

C. Thinking Skills
C 1- Observation and perception
C 2- Analysis and interpretation
C3 - Conclusion and evaluation
C 4- Preparation and calendar

Teaching and Learning Methods

1. Explanation and clarification
2. Lecture method
3. The practical aspect in laboratories and workshops

Assessment methods

1. Daily oral and written examinations

2. Semester and final exams.

3. Degrees for participation, questions and discussion of theoretical and practical study topics during the course of the lectures.

4. Grades for homework.

5. Degrees for writing reports and conducting scientific research in the context of the vocabulary of the scientific article

D. General and Transferable Skills (other skills relevant to employability and personal development)

D1 - Execution of preventive maintenance works for laboratory equipment and workshop machines

D2 - Optimum use of different gear design schedules and connecting parts, permanent and temporary

D3 - Preparing exercise cards on different machines with the appropriate gears to produce teeth for spirals

D4 - Preparing scientific reports using internet technology

11. Course Structure					
Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
١	4 hours per week The first (2 theory)	The student understands the resistance of materials and their applications…	A review of the resistance of materials	(lecture , workshop, laboratory, the side practical)	the exams orality, the exams editorial, the exams the operation exams quarterly, exams final, Evaluation daily)
٢+3		The student understands the types of riveted connections, their design and the efficiency of the connection…	The riveted connections, their types, design and efficiency of the connection.		
4+5		The student understands welded connections, their types and design…	Welded connections, their types and design		
6+7		The student understands threaded connections	The threads The design of the screws The design of the power transmission screws		

		The design of the screws The design of the power transmission screws…			
8+9		The student understands the types of key connections The design of the submersible sockets…	The types of socket connections The design of the sockets		
10+11		The student understands frictional joints, their types and design. Frictional joints are their types and design.			
12+13		The student understands the types and design of springs…	the types and design of springs		
14+15		The student understands the types of belts and their design...	Types of belts and their design		
16+17		The student understands the design of the columns ….	understands the design of the columns		
18+19		The student understands bearings…	Bearings		
20		The student understands	the choice of ball supports		

		the choice of ball supports…			
21+22	.	The student understands the design of gears by the Lewis equation…	the design of gears by the Lewis equation		
23+24	.	The student understands a gear chain…	a gear chain.		
5+26	.	Student understands simple gearbox design…	simple gearbox design.		
27+28		The student understands worm gears…	worm gears		
29+30		The student understands humps	humps		

12. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	machine parts
Special requirements (include for example workshops, periodicals, IT software, websites)	1-Strength of Material by Ferdinal L .Singer 2-Strength of Materials by R.S.Khurmi. 3-Machine Design by R.S. Khurmi, J.K. Gupta 4-Machine Design by Paul H.Black . 5- Schaums Outline Series of Machine Design by Hall , Holowenko , Laughin
Community-based facilities (include for example, guest Lectures , internship , field studies)	Scientific reports on free websites Youtube educational site Free books and research sites

13. Admissions	
Pre-requisites	Creating curricula appropriate to the labor market. Holding scientific symposia and conferences aimed at updating the curricula. Follow up on scientific developments in the field of specialization

TEMPLATE FOR COURSE SPECIFICATION COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the program specification.

1. Teaching Institution	Technical Institute - Shatrah
2. University Department/Centre	Mechanical Technology Department
3. Course title/code	metal
4. Program(s) to which it contributes	Weekly (theoretical lessons in the classroom + practical lessons in the workshops)
5. Modes of Attendance offered	Annual
6. Semester/Year	. 2020-2021
7. Number of hours tuition (total)	(120 hours total) 4 hours (2 theory + 2 practical) per week
8. Date of production/revision of this specification	
Graduating a cadre capable of working in the fields of manufacturing and production and preparing to contribute to the following works:	
9. Aims of the Course	
1. The ability to analyze samples of all metals and know the properties of the metal. 2. Preparing the technological path to conduct engineering tests for various minerals. 3. The ability to conduct various thermal treatments. 4. The ability to identify ways to prevent the diaper on the metal from corrosion.	

10· Learning Outcomes, Teaching ,Learning and Assessment Method
A- Knowledge and Understanding A1 - Ability to analyze samples for various metals A2 - Preparing the technological path between all tests A3 - Carrying out mechanical tests on metals A4 - Carrying out destructive and non-destructive tests for all metals A5 - The ability to study all thermal parameters A6 - The ability to understand the nature of the work of the devices and equipment used in the laboratory
B. Subject-specific skills B1 - Technical skills for correct examination methods B2 - Technical skills for studying how to use different measuring devices B3 - Technical skills for work How to use the types of solutions used in the laboratory B4 - Technical skills for studying thermal equilibrium schemes for all types of metals B5 - Technical skills for the prevention of different modes of erosion
Teaching and Learning Methods
1 - Explanation and clarification 2 - Presentation of models and illustrations 3 - Use of modern projectors 4 - Method of lecture 5- Use of devices and equipment available in laboratories and workshops
Assessment methods
1. Daily oral and written exams 2. Semester and final exams. 3. Degrees for participation, questions and discussion of theoretical and practical study topics during the course of the lectures.

4. Grades for homework.
5. Degrees for writing reports and conducting scientific research in the context of the vocabulary of the scientific article

C. Thinking Skills
C 1- Observation and perception
C 2- Analysis and interpretation
C3 - Conclusion and evaluation
C 4- Preparation and calendar

Teaching and Learning Methods

1. Explanation and clarification
2. Lecture method
3. The practical aspect in laboratories and workshops

Assessment methods

1. Daily oral and written examinations

2. Semester and final exams.

3. Degrees for participation, questions and discussion of theoretical and practical study topics during the course of the lectures.

4. Grades for homework.

5. Degrees for writing reports and conducting scientific research in the context of the vocabulary of the scientific article

D. General and Transferable Skills (other skills relevant to employability and personal development)
D1 - Implementation of different thermal treatments
D2 - Optimum use of measuring devices
D3 - How to perform the various tests
D4 - Preparing scientific reports using Internet technology

11. Course Structure					
Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
١	4 hours per week The first (2 theory + 2 practical)	Definition of mineralogy, crystallization, dendritic crystallization, effect of cooling rate on the structure of minerals	Introduction to metallurgy	(lecture , workshop, laboratory, the side practical)	the exams orality, the exams editorial, the exams the operation exams quarterly, exams final, Evaluation daily)
٢		Installation of metal blocks (casting freeze) Common defects in casting	safflower freezing		
٣		Coefficient of atomic crowding, crystal directions, crystal levels, the phenomenon of rooting...	Coefficient of atomic crowding		
٤		Defects crystal lattice, point, linear...	Crystal lattice, point, linear.		
٥		Defects crystal lattice, point, linear... Crystal lattice, point, linear. Flexible forming and plastic forming (sliding, twinning)…	Flexible forming and plastic forming		

٦		Tension hardening, cold forming, hot forming...	Emotional retaliation		
٧		Restoration, recrystallization, crystal growth...	Restoration, recrystallization		
٨		Tensile, stress-strain curve, fracture, fracture types, transition from ductile fracture to brittle fracture...	strain-strain curve		
٩		Fatigue, the mechanism of occurrence of fatigue, factors affecting the limit of fatigue, anti-fatigue materials ...	fatigue		
١٠		Crawl, creep mechanism, creep curve, creep limit extraction method, creep resistant materials...	creep		
١١		Compound, phase, solid solution, system, equilibrium, composition of alloys, mechanical mixture, eutectic ...	thermodynamic equilibrium chart		

١٢		Thermal equilibrium diagram for a fully soluble binary system in the liquid and solid state, the thermal equilibrium diagram for a fully soluble binary system in the liquid state and insoluble in the solid state (eutectic)	thermodynamic equilibrium chart		
١٣		Thermal equilibrium diagram for a fully soluble binary system in the liquid state and finite solubility in the solid state	thermodynamic equilibrium chart		
١٤		Thermal equilibrium diagram of a fully soluble binary system in the liquid state and is a chemical compound when freezing	thermodynamic equilibrium chart		
١٥		Iron, dissolution of carbon in iron, thermal equilibrium diagram of iron / carbon system, the most important reactions included in the diagram	thermodynamic equilibrium chart		
١٦		Supplement the heat equilibrium diagram for the iron/carbon system	thermodynamic equilibrium chart		
١٧		The formation of austenite, the mechanism of transformation from austenite to perlite	thermodynamic equilibrium chart		

١٨		Austenite transformations with constant degree and transformations by continuous cooling	thermodynamic equilibrium chart		
١٩		Thermal coefficients (annealing, equalization, standardization)	thermodynamic equilibrium chart		
٢٠		Heat coefficient supplementation (standardization and revision) subzero thermal coefficients, aging	thermodynamic equilibrium chart		
٢١		Surface hardening (carbonization of all kinds and subsequent heat treatments and nitridation)...	Surface hardening		
٢٢		Alloy steel, the effect of alloying elements on the properties of steel.... .	alloy steel		
٢٣		Stainless steel, number steel....	stainless steel		
٢٤		Cast iron, factors affecting the form of carbon in cast iron,	cast iron		

		types of cast iron, comparison between white and gray cast iron, heat treatments for cast iron ...			
٢٥		Supplementing the production of cast iron and its most important types...	cast iron		
٢٦		Definition of corrosion, direct and indirect economic costs of corrosion, manifestations of corrosion, the mechanism of occurrence of corrosion….	corrosion		
٢٧		Negativity, Faraday's law General erosion, galvanic corrosion, cavernous erosion... .	corrosion		
٢٨		Optimum selection of material, perimeter softening, design and operation, methods of corrosion prevention…	Corrosion		
٢٩		Surface treatments using modern technologies, laser, plasma, anodizing...	Surface treatments		

٣٠		Definition of nanomaterials and ways to use them…	Nanomaterials		

12. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	Engineering Metallurgy
Special requirements (include for example workshops, periodicals, IT software, websites)	Metallurgy for Engineering – Rollason Engineering physical Metallurgy Scientific reports on free websites
Community-based facilities (include for example, guest Lectures , internship , field studies)	Youtube educational site Free books and research sites

13. Admissions	
Pre-requisites	1. The student from the second stage can be assigned to choose the subject of the graduation project and prepares A preliminary paper on the technological course of implementing the project and the expected accounts for the parts of the project. 2. The possibility of developing laboratories equipped with modern unconventional techniques such as laser cutting 3. The possibility of providing modern devices and equipment, such as devices for measuring the degree of surface finishing that are operated by different methods of operation and formation .

TEMPLATE FOR COURSE SPECIFICATION COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the program specification.

1. Teaching Institution	Technical Institute - Shatrah
2. University Department/Centre	Mechanical Technology Department
3. Course title/code	the workshops/٢
4. Program(s) to which it contributes	Weekly (practical lessons in the workshops)
5. Modes of Attendance offered	Annual
6. Semester/Year	2021-2022
7. Number of hours tuition (total)	(180 hours total) 6 hours (6 practical) per week
8. Date of production/revision of this specification	
Graduating a cadre capable of working in the fields of manufacturing and production and preparing to contribute to the following works:	
9. Aims of the Course	
Acquisition of manual skill to carry out operation and manufacturing operations using various manual tools and measuring tools and the ability to work and operate operating machines in the manner of operating in the optimal productive manner	

10· Learning Outcomes, Teaching ,Learning and Assessment Method

A- Knowledge and Understanding

A1. Acquisition of manual skill to carry out operation and manufacturing operations using various manual tools and measuring tools and the ability to work and operate operating machines in the manner of operating in the optimal productive manner

B. Subject-specific skills

B1 - Ability to manage projects

B2 - The ability to solve problems in the workplace and the crisis in this field

Teaching and Learning Methods

1 - Explanation and clarification

2 - Presentation of models and illustrations

3 - Use of modern projectors

4 - Method of lecture

5- Use of devices and equipment available in laboratories and workshops

Assessment methods

1. Daily oral and written exams
2. Semester and final exams.
3. Degrees for participation, questions and discussion of theoretical and practical study topics during the course of the lectures.
4. Grades for homework.
5. Degrees for writing reports and conducting scientific research in the context of the vocabulary of the scientific article

C. Thinking Skills
C 1- Observation and perception
C 2- Analysis and interpretation
C3 - Conclusion and evaluation
C 4- Preparation and calendar

Teaching and Learning Methods

1. Explanation and clarification
2. Lecture method
3. The practical aspect in laboratories and workshops

Assessment methods

1. Daily oral and written examinations

2. Semester and final exams.

3. Degrees for participation, questions and discussion of theoretical and practical study topics during the course of the lectures.

4. Grades for homework.

5. Degrees for writing reports and conducting scientific research in the context of the vocabulary of the scientific article

D. General and Transferable Skills (other skills relevant to employability and personal development)
D1 - Improving their debating skills
D2 - Raising their research perceptions and transferring students from the stage of education to learning
.

11. Course Structure					
Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
١	6 hours per week The first (6 practical)	Identifying the parts of the machine, milling cutters, milling flat surfaces...	milling, horizontal milling machine, the main unit	(lecture , workshop, laboratory, the side practical)	the exams orality, the exams editorial, the exams the operation exams quarterly, exams final, Evaluation daily)
٢		Dividing heads and their uses, straight gear milling...	Milling, horizontal milling machine, main unit		
٣		Milling of helical gears and inclined racks…	Milling, horizontal milling machine, main unit		
٤		Milling of works by dividing angles, internal sewer milling...	Milling, horizontal milling machine, the main unit		

٥		Maintenance of the milling machine, dismantling and installing the mandrel shaft, opening the machine table, maintaining and installing it, opening the gearbox of the main cutting...	Milling, horizontal milling machine, main unit		
٦		Getting acquainted with grinding machines, grinding stones, surface grinding machines, grinding flat, parallel, perpendicular and inclined surfaces, grinding different ducts, and round ducts…	Grinding		
٧		Cylindrical grinding, external and internal	Cylindrical grinding		

		cylindrical grinding processes…			
٨		Eccentric grinding and crankshaft grinding...	Eccentric grinding		
٩		The age of the number machine...	the age of the number		
١٠		Maintenance of grinding machines (general internal and external cylindrical grinding machine)…	Grinding machines maintenance		
١١		Skimming and vertical scrapers…	Skimming		
١٢		Sewer work on circular works using splitters on planers… .	Dividing devices on planers		
١٣		Maintenance of the scraping machine: Skimming machine maintenance The cart…	Skimming machine maintenance		

١٤		Eccentric turning and turning using the quadruple eyelet and methods of fixing the special works ...	decentralized lathe		
١٥		Eccentric turning and turning using the quadruple eyelet and methods of fixing the special works ...	decentralized lathe		
١٦		Tower lathes…	Tower lathes		
١٧		1 - The pens and the number used, the method of adjusting them and preparing for making various items. 2- How to prepare process tracking maps...	pens and numbers		
١٨		1- Dismantling and maintaining the triple and quadruple samples. 2- Dismantling the moving crow and carrying out maintenance…	Lathe maintenance		
١٩		Definition of machine parts,	Machines programmed using G-Code		

		movement axes, control panel, definition and operation of the machine in practice...			
٢٠		The program, the structure of the program, how to program the milling machines, the functions used in the programmed machines…	The machines programmed using G-Code		
٢١		Linear motion functions (G1, G2), segment zero point storage functions (reference points)…	Machines programmed using G-Code		
٢٢		Making a program to implement a circular cut (a quarter of a circle, a semi-circle, a full circle) and applying it to the calculator using simulation programs and implementing it practically on the machine...	Machines programmed using G-Code		
٢٣		Fixed functions, punching function, machine maintenance How to replace	programmed using G-Code		

		several parts ... Machines			
٢٤		Identify the parts of a programmed lathe machine. Control panel keys and the function of each of them, the number of pieces, the machine axes. Using the CAD-CAM program to design an engineering product and implement the product on the calculator in a simulation method...	Programmed machines that run CAD system - CAD-CAM program		
٢٥		Learn how to replace the damaged number or define a new kit. Implementation of an integrated product on the machine, starting from the design stage	CAD-CAM program		

		on the CAD/CAM program, through the simulation process, and ending with the implementation of the product on the machine …			
٢٦		Identify the parts of the programmed milling machine: the control panel keys and the function of each, the number of pieces, the machine axes...	Programmable milling machine parts		
٢٧		Learn how to replace the damaged number or define a new one...	the programmed milling machine		
٢٨		Using the CAD/CAM program to design an engineering product and implement the product on the calculator in a simulation way …	a programmed milling machine		
٢٩		Learn how to replace the damaged number or define a new one...	the programmed milling machine		
٣٠		Implementation of many exercises on lathe and milling	Exercises on programmed milling machines		

		machines...			

12. Infrastructure

Re re · C TE · C M · C	Manufacturing processes
Special requirements (include for example workshops, periodicals, IT software, websites)	1. Introduction to Production Engineering 2. Production engineering technology and dimension design 3.Metalworking books 4.Metal Forming Books 5.Scientific reports on free websites
Community-based facilities (include for example, guest Lectures , internship , field studies)	Youtube educational site Free books and research sites

13. Admissions

Pre-requisites	1. Creating curricula that are compatible with the labor market - 2. Holding scientific seminars and conferences aimed at updating the curricula 3. Follow up on scientific developments in the field of specialization

TEMPLATE FOR COURSE SPECIFICATION COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the program specification.

1. Teaching Institution	Technical Institute - Shatrah
2. University Department/Centre	Mechanical Technology Department
3. Course title/code	Graduation research project
4. Program(s) to which it contributes	Weekly (theoretical lessons in the classroom)
5. Modes of Attendance offered	annual
6. Semester/Year	2021-2022
7. Number of hours tuition (total)	(60 hours total) 2 hours (2 practical) 30 weeks
8. Date of production/revision of this specification	
Graduating a cadre capable of working in the fields of manufacturing and production and preparing to contribute to the following works:	
9. Aims of the Course	
Students' implementation of integrated productive work and their familiarization with the methods of collective production in the implementation of projects and their applications to the theoretical, applied and practical curricula previously taught during all teaching periods	

10· Learning Outcomes, Teaching ,Learning and Assessment Method
A- Knowledge and Understanding A1 - Identifies the salient objectives of the project. He learns how to deal with his group of students in order to support teamwork, draw maps and develop designs for the project
B. Subject-specific skills B1 - Defines the outstanding objectives of the project. He learns how to deal with his group of students in order to support teamwork, draw maps and develop designs for the project B2 - The ability to solve problems in the workplace and the crisis in this field
Teaching and Learning Methods
1 .meeting 2. Description 3. Discussion
Assessment methods
1. Daily oral and written exams 2. Semester and final exams. 3. Degrees for participation, questions and discussion of theoretical and practical study topics during the course of the lectures. 4. Grades for homework. 5. Degrees for writing reports and conducting scientific research in the context of the vocabulary of the scientific article
C. Thinking Skills C 1- Observation and perception C 2- Analysis and interpretation C3 - Conclusion and evaluation

C 4- Preparation and calendar

Teaching and Learning Methods

1. Explanation and clarification
2. Lecture method
3. The practical aspect in laboratories and workshops

Assessment methods

1. Daily oral and written examinations
2. Semester and final exams.
3. Degrees for participation, questions and discussion of theoretical and practical study topics during the course of the lectures.
4. Grades for homework.
5. Degrees for writing reports and conducting scientific research in the context of the vocabulary of the scientific article

D. General and Transferable Skills (other skills relevant to employability and personal development)

D1 - The student will have good experience using AutoCAD that qualifies him to work in the public and private sectors in his field of specialization

D2 - The student will be able to draw and print the most difficult mechanical drawings

.

11. Course Structure

Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	2 hours per week The first (2 practical)	Discussing the projects that are selected and defining the style and work plan ...	selecting them and defining the work plan	(lecture , workshop, laboratory, the side practical)	the exams orality, the exams editorial, the exams the operation exams quarterly, exams final, Evaluation daily)
2		Defining and distributing responsibilities and setting a timetable for the implementation of the project...	Define and distribute responsibilities		
3		Preparing drawings and operating cards for the various mechanics laboratories for the parts of the project….	Setup graphics and playback cards		
4-14		Executing the project in the laboratory units and preparing reports for the stages that have been reached with the weekly	Project execution		

		follow-up of the workflow of production rates and operating obstacles... .			
15		Discussing the students by a committee and evaluating the implementation plans for the better, and it is considered an evaluation for the end of the first semester...	Discussing the students		
16-17		Resume the implementation of the paragraphs of the project and the completion of the practical side...	Resume the practical side		
18-28		Discussing project details and directing students to prepare the report in its final form (considered the evaluation of the second semester)... Preparing the report in its final form			
29		Completing the project with its theoretical and practical aspects, and preparing for the final discussion…	Finishing the project with its theoretical and practical aspects		

30		Final discussion of the project… Final discussion			

12. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	Manufacturing processes
Special requirements (include for example workshops, periodicals, IT software, websites)	1. Introduction to Production Engineering 2. Production engineering technology and dimensional design Metalworking books Metal Forming Books Scientific reports on free websites
Community-based facilities (include for example, guest Lectures , internship , field studies)	Youtube educational site Free books and research sites

13. Admissions	
Pre-requisites	1. The student from the second stage can be assigned to choose the subject of the graduation project and prepares A preliminary paper on the technological course of implementing the project and the expected accounts for the parts of the project. 2. The possibility of developing laboratories equipped

	with modern unconventional technologies such as laser cutting and CAD/CAM laboratories 3. The possibility of providing modern devices and equipment, such as devices for measuring the degree of surface finishing that are operated by various methods of operation and formation Notice : Projects are selected so that they are productive with scientific and economic benefit and benefit from engineering information for the manufacture of laboratory equipment and mechanical machines (such as: resistance device, sample support device, mechanical presses, plastic injection machine, design and manufacture of various molds).

TEMPLATE FOR COURSE SPECIFICATION COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the program specification.

1. Teaching Institution	Technical Institute - Shatrah
2. University Department/Centre	Mechanical Technology Department
3. Course title/code	industrial drawing
4. Program(s) to which it contributes	Weekly (lab lessons)
5. Modes of Attendance offered	annual
6. Semester/Year	2021-2022
7. Number of hours tuition (total)	(90 hours total) 3 hours (3 practical) 30 weeks
8. Date of production/revision of this specification	
Graduating a cadre capable of working in the fields of manufacturing and production and preparing to contribute to the following works:	
9. Aims of the Course	
To provide the student with the necessary skill to read technical drawings, know symbols, engineering terms and standard specifications, and draw simple and complex assembled mechanical parts and the most encountered in the student's practical life by computer using AutoCAD system.	

10· Learning Outcomes, Teaching ,Learning and Assessment Method
A- Knowledge and Understanding A1 - Computer drawing using AutoCAD system for mechanical parts A2 - Understand how to assemble mechanical parts and turn them into an integrated machine A3 - Converting three-dimensional objects to projections and vice versa A4 - Drawing mechanical models and how to put dimensions on them
B. Subject-specific skills B1 - The student will be able to draw any model given to him
Teaching and Learning Methods
1 .meeting 2. Description 3. Discussion
Assessment methods
1. Daily oral and written exams 2. Semester and final exams. 3. Degrees for participation, questions and discussion of theoretical and practical study topics during the course of the lectures. 4. Grades for homework. 5. Degrees for writing reports and conducting scientific research in the context of the vocabulary of the scientific article
C. Thinking Skills C 1- Observation and perception C 2- Analysis and interpretation C3 - Conclusion and evaluation

C 4- Preparation and calendar

Teaching and Learning Methods

1. Explanation and clarification
2. Lecture method
3. The practical aspect in laboratories and workshops

Assessment methods

1. Daily oral and written examinations

2. Semester and final exams.

3. Degrees for participation, questions and discussion of theoretical and practical study topics during the course of the lectures.

4. Grades for homework.

5. Degrees for writing reports and conducting scientific research in the context of the vocabulary of the scientific article

D. General and Transferable Skills (other skills relevant to employability and personal development)
D1 - The student will have good experience using AutoCAD that qualifies him to work in the public and private sectors in
His field of expertise
D2 - The student will be able to draw and print the most difficult mechanical drawings
.

11. Course Structure					
Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1-3	٣ hours per week The first (٣ practical)	List of two-dimensional drawing (Draw) ….	2D drawing	(lecture , workshop, laboratory, the side practical)	the exams orality, the exams editorial, the exams the operation exams quarterly, exams final, Evaluation daily)
4-7		The list (modify)	(modify)		
8-9		List (Object Snap).	(Object Snap)		
10-11		Layers.	layers		
12-13		Dimensions).	Dimensions		
14-15		Principles of drawing in AutoCAD in three dimensions ...	Drawing in AutoCAD in three dimensions		
16		Pulleys and belts, their types and uses, with drawing two plates to assemble parts containing belt wheels of different types… .	Pulleys and belts		

17-18		Types of gears, gears of justice, basic definitions, drawing of the gear gear with an assembly plate to engage the gear of the gear ...	types of gears		
19-20		Bevel gears, with a drawing of an assembly plate to engage the bevel gear… .	bevel gears		
21-22		Introduction to Autodesk Inventor…	Autodesk Inventor		
23		2D drawing environment…	2D drawing		
24-25		Compilation environment…	Compilation environment		
26-27		Dynamic Analysis and Motion Environment…	Dynamic Analysis and Motion		
28		Additions to fees…	Additions to fees		
29		Introduction to Mastercam Program…	Mastercam Program		
30		Tool Track Extraction to Cut a Die…	Exercise		

12. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	Industrial drawing of Professor Youssef Al-Radi
Special requirements (include for example workshops, periodicals, IT software, websites)	Arabic sources -1 "Engineering Drawing", Abdul Rasoul Khafaf

	-2 "Technology of engineering drawing", Libert and Yan foreign sources 3- "Fundamental of engineering drawing", Feench and Vierck. 4- "Engineering drawing", S. Bogolyubove N. Voinov
Community-based facilities (include for example, guest Lectures , internship , field studies)	Youtube educational site Free books and research sites

13. Admissions	
Pre-requisites	1. Delete the part related to the Autodesk Inventor program from week 20-30, because it was not used as a main program in - 2 As compensation for the weeks we suggest deleting the Autodesk Inventor program, we recommend returning some topics that have been removed. 3. Deleted them previously, such as worm gears, in addition to increasing the number of hours (weeks) of some topics by increasing the number of laboratory exercises This is due to its importance and the insufficiency of the current clocks for it, such as clutches, couplings, bearings, equidistant and bevel gears

TEMPLATE FOR COURSE SPECIFICATION COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the program specification.

1. Teaching Institution	Technical Institute - Shatrah
2. University Department/Centre	Mechanical Technology Department
3. Course title/code	Machine parts technology
4. Program(s) to which it contributes	Weekly (theoretical lessons in the classroom)
5. Modes of Attendance offered	Annual
6. Semester/Year	2021-2022
7. Number of hours tuition (total)	(90 hours total) 3 hours (3 theory) per week
8. Date of production/revision of this specification	
Graduating a cadre capable of working in the fields of manufacturing and production and preparing to contribute to the following works:	
9. Aims of the Course	
1. Ability to define quality control schemes for deviation 2. Preparing control charts for the variables (control chart for arithmetic mean). 3. The ability to identify the factors controlling quality, and to develop and improve the quality. 4. Preliminary calculations of labor costs	

10· Learning Outcomes, Teaching ,Learning and Assessment Method

A- Knowledge and Understanding
A1 - Teaching the student the concept of quality control
A2 - The importance of management in various industries in a way that serves to improve productivity
A3 - The importance of management in various industries in a manner that serves to reduce the percentage of spoilage

B. Subject-specific skills
B1 - The importance of management in various industries in a way that serves to improve productivity
B2 - The importance of management in various industries in a manner that serves to reduce the percentage of spoilage
B3 - The concept of the technological system of management

Teaching and Learning Methods

1 - Explanation and clarification

2 - Presentation of models and illustrations

3 - Use of modern projectors

4 - Method of lecture

5- Use of devices and equipment available in laboratories and workshops

Assessment methods

1. Daily oral and written exams
2. Semester and final exams.
3. Degrees for participation, questions and discussion of theoretical and practical study topics during the course of the lectures.
4. Grades for homework.
5. Degrees for writing reports and conducting scientific research in the context of the vocabulary of the scientific article

C. Thinking Skills
C 1- Observation and perception
C 2- Analysis and interpretation
C3 - Conclusion and evaluation
C 4- Preparation and calendar

Teaching and Learning Methods
1. Explanation and clarification 2. Lecture method 3. The practical aspect in laboratories and workshops
Assessment methods
1. Daily oral and written examinations 2. Semester and final exams. 3. Degrees for participation, questions and discussion of theoretical and practical study topics during the course of the lectures. 4. Grades for homework. 5. Degrees for writing reports and conducting scientific research in the context of the vocabulary of the scientific article
D. General and Transferable Skills (other skills relevant to employability and personal development) D1 - Implementation of preventive maintenance plans for laboratory equipment and workshop machines D2 - Feasibility study for industrial projects D3 - Methods of calculating wages, possessions, types of possessions D4 - Preparing scientific reports using Internet technology

11. Course Structure					
Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
١	٢ hours per week The first (2 theory)	Management and its development, stages and development management, basic principles of management, Characteristics of management levels…	management and its development	(lecture , workshop, laboratory, the side practical)	the exams orality, the exams editorial, the exams the operation exams quarterly, exams final, Evaluation daily)
٢		Industrial management, its functions, engineering Industrial, characteristics of industrial management…	Industrial management		
3		Industrial unit arrangement: Classification of types of unit arrangements - Industrial…	Industrial unit arrangement		

4		An idea for a feasibility study for projects Industrial. For industrial project Stages of feasibility studies…	About the feasibility study for projects industrial		
5		Production planning, the concept of planning Production, planning and control objectives production... ..	production planning		
6		Types of production, production planning methods Linear programming techniques and method Graphics and mode of transport....	Production planning methods		
7		Discussing reports submitted by students with the test of	production planning methods		
8		Work-study, work-study methods study method, study	Study of work and time Standard		

		time, Measurement of work...			
9		Maintenance, importance of maintenance, concept Technological system..	Maintenance concept		
10		Types of maintenance, types of holidays ...	types of maintenance		
11		Training, concept of training, importance Training, training methods	Training concept		
12		costs, classification of costs, wages. .	industrial costs and wages		
13		Methods of calculating wages, incentives, Types of incentives.. .	industrial costs and wages		
14		Methods of calculating wages, incentives, Types of incentives..	industrial costs and wages		
15		Industrial safety,	Industrial safety		

		accident, types Accidents, road accidents , Protective equipment and its types ...			
16		quality control: The meaning of control, the meaning of quality...	Quality control		
17		definition of quality, specification of quality, Quality control factors, development ، Improving the quality, design, quality Conformity, Standard Specification International..	Standard Specifications International and Iraqi.		
18	.	Quality control methods, methods Inspection and inspection, adjustment steps Quality, sampling methods, table Sample inspection.. ..	methods of quality control and examination plans by samples		
19	.	Operating characteristic curve, quality design, data collection) And their analysis (...	methods of quality control and examination plans by samples		
20	.	control charts	control charts		

21		control schemes: Preparing and using the mean diagram. Preparing and using a Pareto chart..	Control charts		
22		Chart setup with deviation normative Preparing the defect diagram...	control schemes		
23		Scatter plot, method of preparation Scatterplot…	Control plots		
24		skew quality control charts Standard and the percentage of defective units. Histogram) Prepared and its use(...	types of schemes the control		
25		control charts for variables. The control scheme for the arithmetic mean…	types of schemes the control		
26		control charts for variables. R-Chart and Range Control Chart For standard deviation	types of schemes the control		

		δ-chart…			
27		feature control charts Units Ratio Control Chart Defective P-chart .)..	types of schemes the control		
28		Features control charts) control scheme the number of defects in One single C-Chart.) ..	types of schemes the control		
29		feature control charts control chart for average number Defects in the vocabulary set U-chart.)	types the control Chart		
30		Discussing reports submitted by students With test	discussion reports		

12. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	Industrial Administration - Technical Institutes Authority 1990
Special requirements (include for example workshops, periodicals, IT software, websites)	Industrial Engineering Dar Al-Kutub for Printing and Publishing University – – Basra, first edition 2222 Total quality management and ISO requirements Total Quality Management - Scientific reports on free websites
Community-based facilities (include for example, guest	Scientific reports on free websites Youtube educational site Free books and research sites

Lectures , internship , field studies)	

13. Admissions	
Pre-requisites	1. The student from the second stage can be assigned to choose the subject of the graduation project and prepares A preliminary paper on the technological course of implementing the project and the expected accounts for the parts of the project. 2. The possibility of developing laboratories equipped with modern technologies

TEMPLATE FOR COURSE SPECIFICATION COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the program specification.

1. Teaching Institution	Technical Institute - Shatrah
2. University Department/Centre	Mechanical Technology Department
3. Course title/code	Computer basics/٢
4. Program(s) to which it contributes	Weekly (theoretical lessons in the classroom)
5. Modes of Attendance offered	semester
6. Semester/Year	2021-2022
7. Number of hours tuition (total)	(30 hours total) 2 hours (2 theoretical) 15 weeks
8. Date of production/revision of this specification	
Graduating a cadre capable of working in the fields of manufacturing and production and preparing to contribute to the following works:	
9. Aims of the Course	
Introducing the student to the use of the two-dimensional and three-dimensional engineering drawing program (AutoCAD 2D & 3D) with applications in his field of specialization	

10· Learning Outcomes, Teaching ,Learning and Assessment Method
A- Knowledge and Understanding A 1 . Learn about AutoCAD, how to install it, and how to operate it A 2 . Understand all the commands needed to draw A3. The ability to understand and draw 2D and 3D graphics A 4 . Ability to print and clone stored files
B. Subject-specific skills B 1 . The student will be able to draw any model given to him
Teaching and Learning Methods
1 .meeting 2. Description 3. Discussion
Assessment methods
1. Daily oral and written exams 2. Semester and final exams. 3. Degrees for participation, questions and discussion of theoretical and practical study topics during the course of the lectures. 4. Grades for homework. 5. Degrees for writing reports and conducting scientific research in the context of the vocabulary of the scientific article
C. Thinking Skills C 1- Observation and perception C 2- Analysis and interpretation C3 - Conclusion and evaluation C 4- Preparation and calendar

Teaching and Learning Methods

1. Explanation and clarification
2. Lecture method
3. The practical aspect in laboratories and workshops

Assessment methods

1. Daily oral and written examinations
2. Semester and final exams.
3. Degrees for participation, questions and discussion of theoretical and practical study topics during the course of the lectures.
4. Grades for homework.
5. Degrees for writing reports and conducting scientific research in the context of the vocabulary of the scientific article

D. General and Transferable Skills (other skills relevant to employability and personal development)

D1 - The student will have good experience using AutoCAD that qualifies him to work in the public and private sectors in his field of specialization

D2 - The student will be able to draw and print the most difficult mechanical drawings

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11. Course Structure

Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	2 hours per week The first (2 practical)	The student understands AutoCAD	Introduction to AutoCAD, Screen settings (Snap, Limit, Grid, Pan, Zoom,….)	(lecture , workshop, laboratory, the side practical)	the exams orality, the exams editorial, the exams the operation exams quarterly, exams final, Evaluation daily)
2-4		The student understands the drawing list....	the drawing list		
5-6		Student understands revisions..	list of revisions (modify		
7		The student understands Snap…	List (Object Snap).		
8		The student understands layers.	layers.		
9		… the dimensions...	Dimensions).		
10		The student understands writing, hashing	Writing, hashing		
11		The student understands storing	storing files, importing files from other programs and exporting them		

		files and importing files ….			
12		The student understands making and importing parts from programs...).	making blocks and importing parts from other programs such as: dividing an element with equal distances (Divide), distributing elements along a path (Measure		
13-14		The student understands the applications of drawing on the computer …	applications of drawing on the computer according to the specialization of the department		
15		The student understands printing and cloning…	Typing, cloning and outputting files to the plotter.		

12. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	1 1- "Auto CAD Smart Book", Mostafa Abd El-Basset. 2- "Mastering Auto CAD 2002", George Omura. -3 "Exercises in 2D and 3D Drawing", Amjad Ali Jassim. "Computer Aided Drawing", PE Technical Education and Vocational Training
Special requirements (include for example workshops, periodicals, IT software, websites)	International Computer Journals
Community-based facilities (include for example, guest Lectures , internship , field studies)	Youtube educational site Free books and research sites

13. Admissions	
Pre-requisites	**The possibility of providing modern computers and linking the laboratory to the Internet**

TEMPLATE FOR COURSE SPECIFICATION COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the program specification.

1. Teaching Institution	Technical Institute - Shatrah
2. University Department/Centre	Mechanical Technology Department
3. Course title/code	ENGLISH
4. Program(s) to which it contributes	Weekly (theoretical lessons in the classroom)
5. Modes of Attendance offered	semester
6. Semester/Year	2021-2022
7. Number of hours tuition (total)	(30 hours total) 2 hours (2 theoretical) 15 weeks
8. Date of production/revision of this specification	
Graduating a cadre capable of working in the fields of manufacturing and production and preparing to contribute to the following works:	
9. Aims of the Course	
1. Preparing students to specialize in English by teaching them different language skills 2. Identifying various methods and methods that help the student to master teaching skills effectively 3. Enabling the student to conduct theoretical, experimental and applied research	

10· Learning Outcomes, Teaching ,Learning and Assessment Method
A- Knowledge and Understanding A1 - Understand the purpose of studying foreign languages as a means of dialogue and understanding cultures. A2 - Emphasizing the consolidation of the concept of sound and correct languages in the structure. A3 - Knowledge and understanding of modern teaching methods and methods, in addition to the methods of assessment and evaluation used in English language teaching.
B. Subject-specific skills B1 - Identify the skills of written and oral exams B2 - Develop language teaching skills through balancing the use of those skills B3 - Finding training opportunities to develop speaking and listening skills
Teaching and Learning Methods
1 .meeting 2. Description 3. Discussion
Assessment methods
1. Daily oral and written exams 2. Semester and final exams. 3. Degrees for participation, questions and discussion of theoretical and practical study topics during the course of the lectures. 4. Grades for homework. 5. Degrees for writing reports and conducting scientific research in the context of the vocabulary of the scientific article
C. Thinking Skills C 1- Observation and perception C 2- Analysis and interpretation C3 - Conclusion and evaluation

11. Course Structure					
Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
١	2 hours per week The first (2 theory)	Unit one :it's a wonderful world! Auxiliary verb Naming the tenses Questions and negatives Short answers	Auxiliary verb Naming the tenses Questions and negatives Short answers	(lecture , workshop, laboratory, the side practical)	the exams orality, the exams editorial, the exams the operation exams quarterly, exams final, Evaluation daily)
٢		Unit two :Get happy Present tenses Present simple Present continuous Simple or continuous Present passive	happy Present tenses Present simple Present continuous Simple or continuous Present passive		
٣		Unit three: Telling tales Past tenses Past simple and continuous Past simple and past perfect Past passive	Telling tales Past tenses Past simple and continuous Past simple and past perfect Past passive		
٤		Unit four :Doing the right thing Modal verb (1)-oldigation and permission Have (got) to ,can,be allowed to should ,must	Doing the right thing Modal verb (1)-oldigation and permission Have (got) to ,can,be allowed to should ,must		
٥		Unit Five :on the move Future forms Going to and will Present continuous	on the move Future forms Going to and will Present continuous		
٦		Unit six : I just love it Questions with like Verb patterns	I just love it Questions with like Verb patterns		
٧		Unit seven: the world of work Present perfect Present perfect verses past simple Present perfect passive	: the world of work Present perfect Present perfect verses past simple Present perfect passive		
٨		Unit eight: just imagine I Conditionals First conditional	: just imagine I Conditionals First conditional Second conditional		

		Second conditional Time clauses	Time clauses		
٩		Unit nine: getting on together Modal verbs (2)-probability Must ,could ,might ,can't Must have ,could have, might have, can't have	getting on together Modal verbs (2)-probability Must ,could ,might ,can't Must have ,could have, might have, can't have		
١٠		Unit ten obsessions Present perfect continuous Questions and answer Present perfect simple verses	obsessions Present perfect continuous Questions and answer Present perfect simple verses		
١١		Unit eleven: tell me about it! Indirect questions	tell me about it! Indirect questions		
١٢		Unit twelve: tell me about it! Question	dreams and reality Second conditional might		
١٣		Unit thirteen: life's great events! Reported speech Reported speech(	life's great events! Reported speech Reported speech(		
١٤		Unit fourteen: life's great events! Reported questions Reported requests/commands	life's great events! Reported questions Reported requests/commands		
١٥		Unit fifteen : revision	revision		

12. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	New Headway Pre intermediate
Special requirements (include for example workshops, periodicals, IT software, websites)	New Headway Pre intermediate
Community-based facilities (include for example, guest Lectures , internship , field studies)	Youtube educational site Free books and research sites

13. Admissions	
Pre-requisites	Use of modern audio testing equipment