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 2024-2025

University: Southern Technical University

College : Shatrah Technical Institute

Department : Mechanical Technology Department

Dean 's Name Head of Department
Assistant lecturer Salam adil ali
Date : 25 /9 /2024
Signature

Dean 's Assistant For Scientific Affairs
Assistant lecturer Turkey Dewan Hussain
Date : 25 /9 /2024
Signature

Quality Assurance And University Performance Manager

Prof.Dr. Mowafaq Abdul Aziz Al-Hasnawi

Date : 25 /9 /2024

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	Semester system
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	25/9/2024
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

1. 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

First semester/ First stage

Level/Year	Course or Module Code	Course or Module Title	Credit rating		
			theoretical	practical	Total = 29 hours. Weekly
					435 hours For the first stage During the first semester
First		Exact Measurements	2	2	
		Properties of Materials	2	—	
		workshops /1	—	6	
		Engineering Static Mechanics	2	3	
		Mathematics/1	2	—	
		Engineering Drawing/1	—	3	
		Electricity Technology/1	1	2	
		English language/1	2	—	
		Human Rights and Democracy	2	—	

First semester/ Second stage

				Credit rating
Level/Year	Course or Module	theoretical	practical	Total = 28 hours. Weekly
second	Machine parts technology/1	3	—	420 hours For the second stage During the first semester
	Operations Process	2	2	
	Metallurgy/1	2	2	
	workshops /2	—	6	
	Graduation Project	—	2	
	Industrial Drawing/1	—	3	
	Industrial Management	2	—	
	English language/2	2	—	
	The Crimes of the Baath regime in Iraq	2	—	

11. Program Structure

Second semester/ First stage

Level/Year	Course or Module Code	Course or Module Title	Credit rating		
			theoretical	practical	Total = 27 hours. Weekly
First		Manufacturing Processes	2	2	405 hours For the first stage During the second semester
		Engineering Materials	2	—	
		workshops /1	—	6	
		Engineering Dynamic Mechanics	2	3	
		Mathematics/2	2	—	
		Computer Fundamentals/1	—	2	
		Engineering Drawing/2	—	3	
		Electricity Technology/2	1	2	

Second semester/ Second stage

Level/Year	Course or Module Code	Course or Module Title	theoretical	practical	Credit rating
second		Machine parts technology/2	3	—	Total = 26 hours. Weekly
		Forming processes	2	2	
		Metallurgy/2	2	2	390 hours For the second stage During the second semester
		Workshopes/2	—	6	
		Graduation Project	—	2	
		Industrial Drawing/2	—	3	
		Quality management and control	2	—	
		Computer Fundamentals/2	—	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																			
First semester/ First stage																			
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
		Exact Measurements	**Specialized**	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
		Properties of Materials	**Specialized**	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	annual	**workshops /1**	**Specialized**	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
		Engineering Static Mechanics	**Specialized**	/	/	/	/	/	/	/		/	/	/		/	/	/	
		Mathematics/1	**Assistanted**	/	/	/	/	/	/			/	/	/		/	/	/	/
		Engineering Drawing/1	**Assistanted**	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
		Electricity Technology/1	**Assistanted**	/	/	/		/	/	/		/	/	/		/	/	/	/
		English language/1	**General**	/	/	/	/	/				/	/	/	/	/	/	/	/
		Human Rights and Democracy	**General**	/	/	/	/	/				/	/	/	/	/	/	/	/

Curriculum Skills Map																			
First semester/ Second Stage																			
the second		**Machine parts technology/1**		/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
		Operations Process		/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
		Metallurgy/1		/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
	annual	**workshops /2**		/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
	annual	**Graduation Project**		/	/	/		/	/	/	/	/	/	/		/	/	/	
		Industrial Drawing/1		/	/	/	/	/	/	/	/	/	/	/		/	/	/	
		Industrial Management		/	/	/		/	/	/	/	/	/	/		/	/	/	
		English language/2		/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	

please tick in the relevant boxes where individual Program Learning Outcomes are being assessed																			
Program Learning Outcomes																			
Second Semester/ First Stage																			
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 Processes	**Specialized**	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
		Engineering Materials	**Specialized**	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	annual	**workshops /1**	**Specialized**	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
		Engineering Dynamic Mechanics	**Specialized**	/	/	/	/	/	/	/		/	/	/		/	/	/	
		Mathematics/2	**Assistanted**	/	/	/	/	/	/			/	/	/		/	/	/	/
		Computer Fundamentals/ 1	**Assistanted**	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
		Engineering Drawing/2	**Assistanted**	/	/	/		/	/	/		/	/	/		/	/	/	/
		Electricity Technology/2	**Assistanted**	/	/	/		/	/	/		/	/	/		/	/	/	/

Second Semester/ Second Stage																			
the second		Machine parts technology/2		/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
		Forming processes		/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
		Metallurgy/2		/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
	annual	workshops /2		/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
	annual	Graduation Project		/	/	/		/	/	/	/	/	/	/		/	/	/	
		Industrial Drawing/2		/	/	/	/	/	/	/	/	/	/	/		/	/	/	
		Quality management and control		/	/	/		/	/	/	/	/	/	/		/	/	/	
		Computer Fundamentals/ 2		/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
		The Crimes of the Baath regime in Iraq		/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	

Academic Program Specification Form

For

Shatrah Technical Institute

Mechanical Technology Department

First Semester/ First stage

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	Exact Measurements
4. Program(s) to which it contributes	Weekly (theoretical lessons in the classroom + practical lessons in the workshops)
5. Modes of Attendance offered	Semester
6. Semester/Year	2024-2025
7. Number of hours tuition (total)	(60 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

11. Course Structure					
Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	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)
2		The student knows the use of measurement feet	Measurement feet (ovens) their parts , uses , types .		
3		The student knows how to use micrometers	Micrometers, their types, uses, parts, the idea of working a micrometer		
4		The student knows the measurement templates and their uses	Measurement templates and their uses, types, how to use them.		
5		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		
6		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.		
7		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).		
8		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.			
9		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.		
10		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		
11		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.		
12	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.			
13	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.			
14	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			

15	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			

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

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	Properties of Materials
4. Program(s) to which it contributes	Weekly (theoretical lessons in the classroom)
5. Modes of Attendance offered	Semester
6. Semester/Year	. 2024-2025
7. Number of hours tuition (total)	(30 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. .

11. Course Structure					
Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	2 hours per week The first (2 theory)	The student knows the Definition of engineering materials	Definition of engineering materials	(lecture , workshop, laboratory, the side practical)	the exams orality, the exams editorial, the exams the operation exams quarterly, exams final, Evaluation daily)
2		The student knows the Atom, element, types of bonds in engineering materials	Atom, element, types of bonds in engineering materials		
3		The student knows the Crystalline and amorphous materials	Crystalline and amorphous materials		
4		The student knows the Crystal forms (H.C.P) (F.C.C) (B.C.C).	Crystal forms (H.C.P) (F.C.C) (B.C.C).		
5		The student knows the Mechanical properties of materials. (Stress, strain, stress-strain curve, ductility, collapse)	Mechanical properties of materials. (Stress, strain, stress-strain curve, ductility, collapse)		

6+7		The student knows the Hardness, hardness test.	Hardness, hardness test.		
8		The student knows the Durability, durability tests.	Durability, durability tests.		
9		The student knows the Thermal properties of materials (thermal expansion, thermal conductivity)	Thermal properties of materials (thermal expansion, thermal conductivity)		
10		The student knows the Electrical properties of materials (ionic materials, insulating materials, metallic materials, factors affecting conductivity).	Electrical properties of materials (ionic materials, insulating materials, metallic materials, factors affecting conductivity).		
11		The student knows the Magnetic properties of materials (Ferromagnetic materials, paramagnetic materials, diamagnetic materials, magnetic retardation, factors affecting magnetism).	Magnetic properties of materials (Ferromagnetic materials, paramagnetic materials, diamagnetic materials, magnetic retardation, factors affecting magnetism).		
12	.	The student knows the Chemical properties of materials (Corrosion, electrochemical series, oxidation)	Chemical properties of materials (Corrosion, electrochemical series, oxidation)		
13	.	The student knows the Carbon steel, its most important types, properties, uses. Iron, its most important ores, extraction, blast furnace, transformers.	Carbon steel, its most important types, properties, uses. Iron, its most important ores, extraction, blast furnace, transformers.		
14	.	The student knows the Carbon steel, its most important types, properties, and uses.	Carbon steel, its most important types, properties, and uses.		

15		The student knows the Alloy steel, its most important types, properties, and uses.	Alloy steel, its most important types, properties, and uses.		

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	. 2024-2025
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
1-3	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 Static Mechanics
4. Program(s) to which it contributes	Weekly (theoretical lessons in the classroom + practical lessons in the workshops)
5. Modes of Attendance offered	. Semester
6. Semester/Year	. 2024-2025
7. Number of hours tuition (total)	(75 hours total) 5 hours (2 theory + 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	
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
1-13	5 hours per week The first 2 theory + 3 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)
14-15		The student understands) motion, linear motion, curved trajectory, rotational motion law Newton's second in motion, Work, power, and energy) ...	the science of kinetics		

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	Mathematics/1
4. Program(s) to which it contributes	Weekly (theoretical lessons in the classroom)
5. Modes of Attendance offered	Semester
6. Semester/Year	. 2024-2025
7. Number of hours tuition (total)	(30 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
1-2	2 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		

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

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/1
4. Program(s) to which it contributes	3 hr .practical lessons in the computer lab Weekly
5. Modes of Attendance offered	Semester
6. Semester/Year	. 2024-2025
7. Number of hours tuition (total)	(45 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	3 hours per week The first (3 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 drawing	Free hand drawing		
10+11		Principal deviations, even	Major deviations, even angle.		

		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.		

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/1
4. Program(s) to which it contributes	Weekly (theoretical lessons in the classroom + practical lessons in the workshops)
5. Modes of Attendance offered	. Semester
6. Semester/Year	. 2024-2025
7. Number of hours tuition (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
1	3 hours per week The first (1 theory + 2 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)
2		Electrical units and symbols, simple electrical circuit, current strength of electromotive force ...	Ohm's law		
3		Potential difference, Ohm's law, ways to connect resistors (series, parallel, compound) Practical examples of solving electrical circuits...	straight hook and parallel		

5		Second: alternating current (variable) Methods of obtaining alternating current, types of electric power plants ...	alternating current		
5		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		
6		Knowledge of the functions and power factor, applications and examples of the use of alternating current in practical life. Third: Electromagnetism ...	Power Factor		
7		Magnetic field, properties of the field, properties	electromagnetism		

		of magnetism, types of magnetic materials, definitions (field density, field strength, magnetic driving force),			
8		The magnetic effect of electric current Applications on the use of the property of the magnetic force of attraction...	the magnetic field		
9		Three-way alternating current Single Face Alternating Current, Three Phase Alternating Current, Phase Marking Method, External Wiring System External ...	Three Phase Alternating Current		
10		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… .			
11		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)		
12		Types of motors, three-phase induction motors, their types, uses ...	Current motors three face		
13		Structure of impact motors (three-phase inductance), principle of magneto-rotating theory, principle of working theory of motors...	Principle of electric motors		
14		Methods of starting the movement in three-phase induction motors ...	Methods of starting the movement in induction motors		

15		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		

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	English language/1
4. Program(s) to which it contributes	Weekly (theoretical lessons in the classroom)
5. Modes of Attendance offered	semester
6. Semester/Year	. 2024-2025
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
1	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)
2		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		
3		Unit three: it all went wrong Past tenses Past simple Past continuous	it all went wrong Past tenses Past simple Past continuous		
4		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		
5		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		
6		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		
7		Unit seven :fame Present perfect and past simple For and since Tense revision	fame Present perfect and past simple For and since Tense revision		
8		Unit eight: do's and don'ts Have(got) to Should must	do's and don'ts Have(got) to Should must		
9		Unit nine: going places Time and	going places Time and conditional		

		conditional clauses what if	clauses what if		
10		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		
11		Unit eleven :things that changed the world Passives	things that changed the world Passives		
12		Unit twelve :dreams and reality Second conditional might	dreams and reality Second conditional might		
13		Unit thirteen :earning a living Present perfect continuous Present perfect simple versus Continuous(	earning a living Present perfect continuous Present perfect simple versus Continuous(		
14		Unit fourteen: family ties Present perfect and past perfect and clarification Reported statements	family ties Present perfect and past perfect and clarification Reported statements		
15		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

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	. 2024-2025
7. Number of hours tuition (total)	(30 hours total) 2 hours (2 theory) 15 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
1	2 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)
2		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		
3		The position of heavenly laws on human rights: 1- Christianity 2- Islamic religion...	Heavenly laws are human rights		
4		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		
5		The natural school and social contract	The natural school and social		

		theory…	contract theory		
6		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		
8		Democracy: its definition: democracy as a form of government…:	Democracy: its definition		
9		Democracy as a pattern of human relations...	Democracy as a pattern of human relations		
10		Liberalism / Political Democracy / Its Characteristics…	Liberalism		
11		Implementation of political democracy…	political democracy		
12	.	Economic-social democracy, characteristics of economic-social democracy, the role of the state in implementing economic-social democracy...	Economic-social democracy		
13	.	Forms of democracy (direct democracy - semi-direct democracy - representative	forms of democracy		

		democracy)...			
14		Forms of democracy (direct democracy - semi-direct democracy - representative democracy)... …	forms of democracy		
15		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.

Academic Program Specification Form

For

Shatrah Technical Institute

Mechanical Technology Department

First Semester/ Second stage

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/1
4. Program(s) to which it contributes	Weekly (theoretical lessons in the classroom)
5. Modes of Attendance offered	Semester
6. Semester/Year	. 2024-2025
7. Number of hours tuition (total)	(45 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
1	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)
2+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		

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	Operations Process
4. Program(s) to which it contributes	Weekly (theoretical lessons in the classroom + practical lessons in the workshops)
5. Modes of Attendance offered	Semester
6. Semester/Year	. 2024-2025
7. Number of hours tuition (total)	(60 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 .

11. Course Structure					
Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	4 hours per week The first (2 theory + 2 practical)	The student knows Geometric tolerances, pairs, pair systems, tolerance layers, coupling units, basic deviations,	. Geometric tolerances, pairs, pair systems, tolerance layers, coupling units, basic deviations,	(lecture , workshop, laboratory, the side practical)	the exams orality, the exams editorial, the exams the operation exams quarterly, exams final, Evaluation daily)
2		The student knows the Types of tolerances, hole basic system, column basic system, symbols of duals, tolerances for loose dimensions, detailed duals, selection of duals and their economic advantages	Types of tolerances, hole basic system, column basic system, symbols of duals, tolerances for loose dimensions, detailed duals, selection of duals and their economic advantages		
3		The student knows. Geometric tolerances in shape and position and types of shape	Geometric tolerances in shape and position and types of shape and position tolerances.		

		and position tolerances. ..			
4		The student knows the Measurement specifiers, design of measurement specifiers, types of measurement specifiers (internal measuring specifiers, external measuring specifiers, adjustable measuring specifiers, solid measuring specifiers, special measuring specifiers).	Measurement specifiers, design of measurement specifiers, types of measurement specifiers (internal measuring specifiers, external measuring specifiers, adjustable measuring specifiers, solid measuring specifiers, special measuring specifiers).		
5		The student knows the Classification of metal fabrication, metal working, introduction to the theory of blade formation and influencing factors, methods of fixing workpieces, including round and non-round, the cutting edges used, and the longitudinal and transverse	Classification of metal fabrication, metal working, introduction to the theory of blade formation and influencing factors, methods of fixing workpieces, including round and non-round, the cutting edges used, and the longitudinal and transverse feed shares. .		

		feed shares.			
6		The student knows the Identifying the pens used and how to install them for crafts, shaping lathe pens.	Identifying the pens used and how to install them for crafts, shaping lathe pens.		
7		The student knows the types of turning pen angles, the effect of turning pen angles on the cutting process, types of turning pen metals, cutting conditions, cutting elements, uses of cutting speeds, and the use of tables and speed maps, classification of cutting tools with respect to operating methods and number of cutting edges	Identifying the types of turning pen angles, the effect of turning pen angles on the cutting process, types of turning pen metals, cutting conditions, cutting elements, uses of cutting speeds, and the use of tables and speed maps, classification of cutting tools with respect to operating methods and number of cutting edges.		
8		The student knows the The cutting edge, the emerging cutting edge and the theory of its formation, the factors that affect it, the factors that lead to reducing its size, cooling and its importance for	The cutting edge, the emerging cutting edge and the theory of its formation, the factors that affect it, the factors that lead to reducing its size, cooling and its importance for cutting operations, various cooling liquids.		

		cutting operations, various cooling liquids.			
9		The student knows the How to conduct an operating card for a group of operations, calculate its components, and calculate the cutting time for each operation	How to conduct an operating card for a group of operations, calculate its components, and calculate the cutting time for each operation		
10		The student knows How to take advantage of the sequence card to make a product path through the different units. Factors that affect the choice of cutting speed (1- The effect of the properties of the cutting tool. 2- The effect of the operating elements. 3- The effect of the properties of the metal being worked.	How to take advantage of the sequence card to make a product path through the different units. Factors that affect the choice of cutting speed (1- The effect of the properties of the cutting tool. 2- The effect of the operating elements. 3- The effect of the properties of the metal being worked. ,		
11		The student	Turret turning machines,		

		Turret turning machines, automatic, studying the processes that can be operated and analyzing the processes on the product, how to prepare operating cards	automatic, studying the processes that can be operated and analyzing the processes on the product, how to prepare operating cards		
12		The student Types of tools used and their arrangement on the front and rear hexagonal and quadrilateral heads	Types of tools used and their arrangement on the front and rear hexagonal and quadrilateral heads		
13		The student	Studying how to program		

		knows the Studying how to program automatic programmed lathes and the factors influencing the operating steps	automatic programmed lathes and the factors influencing the operating steps		
14		The student knows the	Milling, learning about the operations that can be performed on milling machines, parts and components of horizontal and vertical milling machines, and the nature of the work of each part.		
15		The student knows the Types of grinding machines and the products of each machine, surface grinding machines (horizontal, vertical), cylindrical grinding machines (external,	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.		

		internal, central and floating), grinding machines of the number of pieces.			

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	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	Metallurgy/1
4. Program(s) to which it contributes	Weekly (theoretical lessons in the classroom + practical lessons in the workshops)
5. Modes of Attendance offered	. Semester
6. Semester/Year	. 2024-2025
7. Number of hours tuition (total)	(60 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

11. Course Structure					
Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	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)
2		Installation of metal blocks (casting freeze) Common defects in casting	safflower freezing		
3		Coefficient of atomic crowding, crystal directions, crystal levels, the phenomenon of rooting...	Coefficient of atomic crowding		
4		Defects crystal lattice, point, linear...	Crystal lattice, point, linear.		
5		Defects crystal lattice, point, linear... Crystal lattice, point, linear. Flexible forming and plastic forming (sliding, twinning)…	Flexible forming and plastic forming		

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

12		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		
13		Thermal equilibrium diagram for a fully soluble binary system in the liquid state and finite solubility in the solid state	thermodynamic equilibrium chart		
14		Thermal equilibrium diagram of a fully soluble binary system in the liquid state and is a chemical compound when freezing	thermodynamic equilibrium chart		
15		Iron, dissolution of carbon in iron, thermal equilibrium diagram of iron / carbon system, the most important reactions included in the diagram	thermodynamic equilibrium chart		

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/2
4. Program(s) to which it contributes	Weekly (practical lessons in the workshops)
5. Modes of Attendance offered	Annual
6. Semester/Year	. 2024-2025
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
1	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)
2		Dividing heads and their uses, straight gear milling...	Milling, horizontal milling machine, main unit		
3		Milling of helical gears and inclined racks…	Milling, horizontal milling machine, main unit		
4		Milling of works by dividing angles, internal sewer milling...	Milling, horizontal milling machine, the main unit		

5		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		
6		Getting acquainted with grinding machines, grinding stones, surface grinding machines, grinding flat, parallel, perpendicular and inclined surfaces, grinding different ducts, and round ducts…	Grinding		
7		Cylindrical grinding, external and internal	Cylindrical grinding		

		cylindrical grinding processes…			
8		Eccentric grinding and crankshaft grinding...	Eccentric grinding		
9		The age of the number machine...	the age of the number		
10		Maintenance of grinding machines (general internal and external cylindrical grinding machine)…	Grinding machines maintenance		
11		Skimming and vertical scrapers…	Skimming		
12		Sewer work on circular works using splitters on planers… .	Dividing devices on planers		
13		Maintenance of the scraping machine: Skimming machine maintenance The cart…	Skimming machine maintenance		

14		Eccentric turning and turning using the quadruple eyelet and methods of fixing the special works ...	decentralized lathe		
15		Eccentric turning and turning using the quadruple eyelet and methods of fixing the special works ...	decentralized lathe		
16		Tower lathes…	Tower lathes		
17		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		
18		1- Dismantling and maintaining the triple and quadruple samples. 2- Dismantling the moving crow and carrying out maintenance…	Lathe maintenance		
19		Definition of machine parts,	Machines programmed using G-Code		

		movement axes, control panel, definition and operation of the machine in practice...			
20		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		
21		Linear motion functions (G1, G2), segment zero point storage functions (reference points)…	Machines programmed using G-Code		
22		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		
23		Fixed functions, punching function, machine maintenance How to replace	programmed using G-Code		

		several parts ... Machines			
24		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		
25		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 …			
26		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		
27		Learn how to replace the damaged number or define a new one...	the programmed milling machine		
28		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		
29		Learn how to replace the damaged number or define a new one...	the programmed milling machine		
30		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 project
4. Program(s) to which it contributes	Weekly (theoretical lessons in the classroom)
5. Modes of Attendance offered	Annual
6. Semester/Year	. 2024-2025
7. Number of hours tuition (total)	(30 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

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	Industrial Drawing/1
4. Program(s) to which it contributes	Weekly (lab lessons)
5. Modes of Attendance offered	Semester
6. Semester/Year	. 2024-2025
7. Number of hours tuition (total)	(45 hours total) 3 hours (3 practical) 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	

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	3 hours per week The first (3 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		

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	English language/2
4. Program(s) to which it contributes	Weekly (theoretical lessons in the classroom)
5. Modes of Attendance offered	Semester
6. Semester/Year	. 2024-2025
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

11. Course Structure					
Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	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)
2		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		
3		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		
4		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		
5		Unit Five :on the move Future forms Going to and will Present continuous	on the move Future forms Going to and will Present continuous		
6		Unit six : I just love it Questions with like Verb patterns	I just love it Questions with like Verb patterns		
7		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		
8		Unit eight: just imagine I Conditionals First conditional	: just imagine I Conditionals First conditional Second conditional		

		Second conditional Time clauses	Time clauses		
9		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		
10		Unit ten obsessions Present perfect continuous Questions and answer Present perfect simple verses	obsessions Present perfect continuous Questions and answer Present perfect simple verses		
11		Unit eleven: tell me about it! Indirect questions	tell me about it! Indirect questions		
12		Unit twelve: tell me about it! Question	dreams and reality Second conditional might		
13		Unit thirteen: life's great events! Reported speech Reported speech(	life's great events! Reported speech Reported speech(		
14		Unit fourteen: life's great events! Reported questions Reported requests/commands	life's great events! Reported questions Reported requests/commands		
15		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

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	The crimes of the Baath regime in Iraq
4. Program(s) to which it contributes	Weekly (theoretical lessons in the classroom)
5. Modes of Attendance offered	Semester
6. Semester/Year	. 2024-2025
7. Number of hours tuition (total)	(30 hours total) 2 hours (2 theory) 15 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 should be able to recognize the definition of violations of rights and freedoms	

2. Learn about the emergence of the Baathist regime

3. Violations of the Baathist regime

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 - The student learns about the oppressive practices practiced by this regime towards the Iraqi people B 2- Policies of the former Baathist regime
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
1	2 hours per week The first (2 theory)	Identify violations of rights and freedoms	Violations of rights and freedoms	(lecture , workshop, laboratory, the side practical)	the exams orality, the exams editorial, the exams the operation exams quarterly, exams final, Evaluation daily)
2		Learn about political systems	political systems		
3		Identify the Baathist regime's violations of public rights and freedoms	the Baathist regime's violations of public rights and freedoms		
4		Identify the impact of the Baathist regime's behaviors on society and its control over the state	the impact of the Baathist regime's behaviors on society and its control over the state		
5		Learn about the transitional stage in fighting authoritarian politics	the transitional stage in fighting authoritarian politics		
6		Learn about the psychological field	the psychological		

			field		
7		Learn about the social field	the social field		
8		Learn about religion and state	religion and state		
9		Learn about culture, media, and the militarization of society	culture, media, and the militarization of society		
10		Identify the impact of oppression and wars on the environment and population	the impact of oppression and wars on the environment and population		
11		Identify the impact of oppression and wars on the environment and population	the impact of oppression and wars on the environment and population		
12	.	Learn about the scorched earth policy	the scorched earth policy		
13	.	Learn about the drying up of marshes and forced migration	the drying up of marshes and forced migration		
14		Identify the destruction of the agricultural and animal environment and radioactive contamination	the destruction of the agricultural and animal environment and radioactive contamination		
15		Identifying mass graves and bombing places of worship	mass graves and bombing places of worship		

12. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	The crimes**&** Baath regime **&** Iraq
Special requirements (include for example workshops, periodicals, IT software, websites)	**The crimes of the Baath regime in Iraq** **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 The crimes of the Baath regime in Iraq .

Academic Program Specification Form

For

Shatrah Technical Institute

Mechanical Technology Department

Second Semester/ First stage

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 Processes
4. Program(s) to which it contributes	Weekly (theoretical lessons in the classroom + practical lessons in the workshops)
5. Modes of Attendance offered	Semester
6. Semester/Year	. 2024-2025
7. Number of hours tuition (total)	(60 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
1	4 hours per week The first (2 theory + 2 practical)	The student knows the Pulp, its types, pulp sand, mixture ratios and materials added to it, stages of its work (mixing and preparing sand, making balls, drying it), the benefit of the drying process, ovens or methods of drying balls and their equipment.	Pulp, its types, pulp sand, mixture ratios and materials added to it, stages of its work (mixing and preparing sand, making balls, drying it), the benefit of the drying process, ovens or methods of drying balls and their equipment.	(lecture , workshop, laboratory, the side practical)	the exams orality, the exams editorial, the exams the operation exams quarterly, exams final, Evaluation daily)

2		The student knows the Die casting, its types, centrifugal casting, and its types	Die casting, its types, centrifugal casting, and its types		
3		The student knows Lost wax plumbing, continuous plumbing, shell plumbing	Lost wax plumbing, continuous plumbing, shell plumbing		
4		The student knows the Metal smelting and its foundations, types of smelting furnaces, blast furnace, main dimensions and method of operation, blast furnace, electric arc furnace, reflector furnace, rotary furnace.	Metal smelting and its foundations, types of smelting furnaces, blast furnace, main dimensions and method of operation, blast furnace, electric arc furnace, reflector furnace, rotary furnace.		
5		The student knows the Casting of castings, its equipment and foundations, cleaning of castings, defects in castings, inspection of	Casting of castings, its equipment and foundations, cleaning of castings, defects in castings, inspection of castings		

		castings			
6		The student knows the Welding, foundations of metal welding, clarification of the main methods of welding (pressure welding, electric arc fusion welding, other methods of fusion welding, flash welding and caustic welding), types of welding joints.	Welding, foundations of metal welding, clarification of the main methods of welding (pressure welding, electric arc fusion welding, other methods of fusion welding, flash welding and caustic welding), types of welding joints		
7		The student knows the Hot pressure welding, including (electrical resistance welding, including spot and line welding, flash welding), cold pressure welding, pressure welding using explosives, and pressure welding using ultrasonic waves. .	Hot pressure welding, including (electrical resistance welding, including spot and line welding, flash welding), cold pressure welding, pressure welding using explosives, and pressure welding using ultrasonic waves.		

8		The student knows the Fusion welding and gas welding, oxy-hydrogen welding and oxy-acetylene welding, types of flame, right-hand welding and left-hand welding, cutting with oxy-acetylene.	Fusion welding and gas welding, oxy-hydrogen welding and oxy-acetylene welding, types of flame, right-hand welding and left-hand welding, cutting with oxy-acetylene.		
9		The student knows the Arc welding, welding current, direct polarity and reversed polarity method, types of electrodes, packaging of metal electrodes and their types	Arc welding, welding current, direct polarity and reversed polarity method, types of electrodes, packaging of metal electrodes and their types		
10		The student knows the Electrode movement, methods of isolating electrodes and the welding area, electric arc welding using protective gases (carbon dioxide welding, arcon tig welding,	Electrode movement, methods of isolating electrodes and the welding area, electric arc welding using protective gases (carbon dioxide welding, arcon tig welding, brazing welding)		

		brazing welding)			
11		The student knows the Atomic hydrogen arc welding, arc welding, fusion welding	Atomic hydrogen arc welding, arc welding, fusion welding		
12		The student knows the Temperature welding, caustic welding (mortar welding, plumbing welding) and some modern types of welding (laser welding, electron beam welding) ...	The tools and devices used in the manufacture of the model and quarry molds and the method of designing a simple model.		
13		The student knows the Welding defects, welding tests	Welding defects, welding tests		
14		The student knows the Metal forming, the theory of forming, the foundations of cold and hot forging, blacksmithing, the foundations of blacksmithing	Metal forming, the theory of forming, the foundations of cold and hot forging, blacksmithing, the foundations of blacksmithing and its methods (manual, mechanical), blacksmithing equipment, manual and mechanical, blacksmithing elements		

		and its methods (manual, mechanical), blacksmithing equipment, manual and mechanical, blacksmithing elements			
15		The student knows the Special blacksmithing methods, blacksmithing molds and their manufacture, effective force, explanation of the different blacksmithing operations (contact, methods of different geometric sections in cutting operations, making simple steps, forming various artifacts).	Special blacksmithing methods, blacksmithing molds and their manufacture, effective force, explanation of the different blacksmithing operations (contact, methods of different geometric sections in cutting operations, making simple steps, forming various artifacts).		

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

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 Materials
4. Program(s) to which it contributes	Weekly (theoretical lessons in the classroom)
5. Modes of Attendance offered	Semester
6. Semester/Year	. 2024-2025
7. Number of hours tuition (total)	(30 hours total) ٢ 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. .

11. Course Structure					
Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	2 hours per week The first (2 theory)	Knowing the most important types of cast iron and its uses...	Cast iron, its most important types, properties, and uses.	(lecture , workshop, laboratory, the side practical)	the exams orality, the exams editorial, the exams the operation exams quarterly, exams final, Evaluation daily)
2		Knowing the most important types of cast iron and its uses...	Cast iron, its most important types, properties, and uses.		
3		Identifying copper metal and its most important alloys, properties and uses...	Copper, its alloys, properties, uses		
4		Identify the metal of aluminum and its most important alloys, properties and uses....	Aluminum, its alloys, properties, uses		
5		Identifying nickel metal and its most important alloys, properties and uses..	Nickel, its alloys, properties, and uses.		
6		Identifying tin metal and its most important alloy, properties and uses..	Tin, zinc, manganese, its alloys, properties, uses		
7		Identification of white metals and bearing alloys..	Other ferrous alloys: (white metals and bearing alloys).		

8		Introduction to powder metallurgy..	Powder metallurgy (methods of obtaining metallic powders).		
9		Learn about powder pressing and the sintering process...	Powder pressing, the sintering process		
10		Knowledge of ceramic materials...	ceramic materials		
11		Learn the types of glass and ways to manufacture and use it...	Glass, its types, manufacture, uses.		
12		Identifying concrete and its uses...	Concrete, its industrial uses.		
13		Knowledge of polymers, and types of polymerization...	Polymers, polymer molecules, types of polymerization		
14		Learn the properties of plastics and their uses...	Properties and uses of plastics.		
15		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	. 2024-2025
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
1+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 Dynamic Mechanics
4. Program(s) to which it contributes	Weekly (theoretical lessons in the classroom + practical lessons in the workshops)
5. Modes of Attendance offered	. Semester
6. Semester/Year	. 2024-2025
7. Number of hours tuition (total)	(75 hours total) 5 hours (2 theory + 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	
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
1-4	5 hours per week The first 2 theory + 3 practical)	The student understands) motion, linear motion, curved trajectory, rotational motion law Newton's second in motion, Work, power, and energy) ...	the science of kinetics	(lecture , workshop, laboratory, the side practical)	the exams orality, the exams editorial, the exams the operation exams quarterly, exams final, Evaluation daily)
5-15		The student understands (the science of resistance materials, stresses axial, shear stress, Torsional stresses, types of loads, patterns of shear forces and bending moments…	Stress resistance		

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	Mathematics/2
4. Program(s) to which it contributes	Weekly (theoretical lessons in the classroom)
5. Modes of Attendance offered	Semester
6. Semester/Year	. 2024-2025
7. Number of hours tuition (total)	(30 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
1-4	2 hours per week The first (2 theory)	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	(lecture , workshop, laboratory, the side practical)	the exams orality, the exams editorial, the exams the operation exams quarterly, exams final, Evaluation daily)
5-6		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		
7-12		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.		
12-13		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).		
14-15		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 Fundamentals/1
4. Program(s) to which it contributes	Weekly (theoretical lessons in the classroom)
5. Modes of Attendance offered	semester
6. Semester/Year	. 2024-2025

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	2 hours per week The first (2 theory)	The student know Operating systems and their functions	. Operating systems and their functions	(lecture , workshop, laboratory, the side practical)	the exams orality, the exams editorial, the exams the operation exams quarterly, exams final, Evaluation daily)
2		The student know the Windows 7 operating system and Windows 10 operating system. Characteristics and features of each system	Operating systems, managing files, getting to know the types of computers		
3		The student understands the Desktop and Start menu components	Desktop and Start menu components		
4		The student understands the Task bar task bar	the Task bar task bar		
5		The student understands Files and folders format and setup folders and files	Files and folders format and setup folders and files		
6		The student understands icons	icons		
7		The student understands control panel	control panel		
8		The student understands device and printer	device and printer		
9		The student understands set time and date	set time and date		

10		The student understands Remove and install programs and features	Remove and install programs and features		
11		The student understands View and control available networks network and sharing center	View and control available networks network and sharing center		
12		Word 2010 program interface and main menus	Word 2010 program interface and main menus		
13		The student understands Writing and modifying texts and controlling home page groups	Writing and modifying texts and controlling home page groups		
14		Page layout, insertion, saving and printing of documents	Page layout, insertion, saving and printing of documents		
15		The student understands Power Point 2010 interface program, creating and coordinating presentations and slides and saving them	Power Point 2010 interface program, creating and coordinating presentations and slides and saving them		

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

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/2
4. Program(s) to which it contributes	Weekly (practical lessons in the computer lab)
5. Modes of Attendance offered	Semester
6. Semester/Year	2024-2025
7. Number of hours tuition (total)	(45 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+2	3 hours per week The first (3 practical)	Drawing the main projections at even angles…	the main projections	(lecture , workshop, laboratory, the side practical)	the exams orality, the exams editorial, the exams the operation exams quarterly, exams final, Evaluation daily)
3+4		The conclusion of the third projection from the two projectors...	The conclusion of the projection		
5+6		Deducing perspective from two or three points...	Deducing perspective		

7+8		Cuts, shapes of cut lines according to the type of material...	Cuts, shapes of cut lines		
9+10		Drawing of cut plots from one plot...	Drawing of cut plots		
11+12		Partially cut projection drawing...	Partially cut projection drawing		
13+14+15		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/2
4. Program(s) to which it contributes	Weekly (theoretical lessons in the classroom + practical lessons in the workshops)
5. Modes of Attendance offered	. Semester
6. Semester/Year	. 2024-2025
7. Number of hours tuition (total)	(5 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
1	3 hours per week The first (1 theory + 2 practical)	Single-sided impact motors, their types, installation, uses, reversal of their cycles... .	Unidirectional impact actuators	(lecture , workshop, laboratory, the side practical)	the exams orality, the exams editorial, the exams the operation exams quarterly, exams final, Evaluation daily)
2		Starting Capacitor Single Unit Impact Motors, Their Installation, Uses ...	Capacitor Single Unit Impact Motors		
3		Single-motor split-face motors, their composition,	Single-motor split-face motors		

		uses...			
4		Eighth: Protection (protection) for engines Fuses, their types, melting factor ...	Protection (protection) for engines		
5		Circuit breakers, thermal monitors against overloading...	Cycle breakers		
6		Ninth – Methods for determining engine malfunctions ...	Types of engine malfunctions		
7		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		
8		Engine overheating while spinning, engine running noisy...	Engine overheating while spinning		

9		How to treat and repair each of the previous faults ...	fix each of the previous faults		
10		Control and control circuits used to operate motors manually and automatically.	Starting the engines manually and automatically		
11		Safety and Sustainability of Engines…	Safety and Sustainability of Engines		
12		Engine maintenance methods, required time periods, types of maintenance…	Engine maintenance		
13		Lubrication, lubrication, cleaning, axle bearings...	sustaining motors		
14	...	Industrial security, occupational safety during the maintenance process	Occupational safety		
15		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

Academic Program Specification Form

For

Shatrah Technical Institute

Mechanical Technology Department

Second Semester/ Second stage

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/2
4. Program(s) to which it contributes	Weekly (theoretical lessons in the classroom)
5. Modes of Attendance offered	Semester
6. Semester/Year	. 2024-2025
7. Number of hours tuition (total)	(45 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
1+2	4 hours per week The first (2 theory)	The student understands Design of Shafts	Design of Shafts	(lecture , workshop, laboratory, the side practical)	the exams orality, the exams editorial, the exams the operation exams quarterly, exams final, Evaluation daily)
3+4		The student understands Design of Journal Bearings	Design of Journal Bearings		
5		The student understands Selection of Ball Bearings	Selection of Ball Bearings		
6+7	.	The student understands Design of Gears by Lewis Equation …	Design of Gears by Lewis Equation		
8+9	.	The student understands Gears Trains	Gears Trains		
10+11	.	The student understands Design of Simple Gears Box	Design of Simple Gears Box		

12+13		The student understands Worm Gears	Worm Gears		
14+15		The student understands Cams	Cams		

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	Forming processes
4. Program(s) to which it contributes	Weekly (theoretical lessons in the classroom + practical lessons in the workshops)
5. Modes of Attendance offered	Semester
6. Semester/Year	. 2024-2025
7. Number of hours tuition (total)	(60 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 .

11. Course Structure					
Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	4 hours per week The first (2 theory + 2 practical)	The student knows the milling process... the milling process, its movements and products, types of milling machines, components and parts of milling machines, types of milling knives and their uses.	the milling process, its movements and products, types of milling machines, components and parts of milling machines, types of milling knives and their uses.	(lecture , workshop, laboratory, the side practical)	the exams orality, the exams editorial, the exams the operation exams quarterly, exams final, Evaluation daily)
2		The student knows the accessories of milling machines, ways to install milling	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		

		machines…	clamps.		
3		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..		
4		The student knows the types of gears, the technical specifications of gears…	Types of gears, cylindrical gear milling, technical specifications of the cylindrical gear, cylindrical gear elements, the selection table of the gear milling knife number..		
5		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.		
6		The student knows the bevel gears and their technical	Bevel gears and their technical specifications, calculating the milling and turning angle of the bevel		

		specifications…	gear, rack and pinion gears and worm gears.		
7		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.		
8		Unconventional cutting machines…	Unconventional cutting 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..		
9		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..		
10		The student knows the	waterjet cutting, laser cutting, advantages, disadvantages,		

		process of waterjet cutting, laser cutting…	products, cutting head design, studying the variables of each method and their impact on the removal rate and accuracy.		
11		The student knows the formation of metals, the theory of formation …	metal formation, the theory of formation, the basics of cold and hot forming, types of formation.		
12		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.		
13		The student knows the process of cutting and	the process of cutting and perforating, the foundations of the shearing process, types of molds, dimensions of the material, calculating the shear capacity.		

		perforating ...			
14		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 ...	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		
15		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 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	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	Metallurgy/2
4. Program(s) to which it contributes	Weekly (theoretical lessons in the classroom + practical lessons in the workshops)
5. Modes of Attendance offered	. Semester
6. Semester/Year	. 2024-2025
7. Number of hours tuition (total)	(60 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 Assesment 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
1	4 hours per week The first (2 theory + 2 practical)	Supplement the heat equilibrium diagram for the iron/carbon system	thermodynamic equilibrium chart	(lecture , workshop, laboratory, the side practical)	the exams orality, the exams editorial, the exams the operation exams quarterly, exams final, Evaluation daily)
2		The formation of austenite, the mechanism of transformation from austenite to perlite	thermodynamic equilibrium chart		
3		Austenite transformations with constant degree and transformations by continuous cooling	thermodynamic equilibrium chart		
4		Thermal coefficients (annealing, equalization, standardization)	thermodynamic equilibrium chart		
5		Heat coefficient supplementation (standardization and revision) subzero thermal coefficients, aging	thermodynamic equilibrium chart		

6		Surface hardening (carbonization of all kinds and subsequent heat treatments and nitridation)...	Surface hardening		
7		Alloy steel, the effect of alloying elements on the properties of steel.... .	alloy steel		
8		Stainless steel, number steel....	stainless steel		
9		Cast iron, factors affecting the form of carbon in cast iron, types of cast iron, comparison between white and gray cast iron, heat treatments for cast iron ...	cast iron		
10		Supplementing the production of cast iron and its most important types...	cast iron		
11		Definition of corrosion, direct and indirect economic costs of corrosion, manifestations of corrosion, the mechanism of	corrosion		

		occurrence of corrosion….			
12		Negativity, Faraday's law General erosion, galvanic corrosion, cavernous erosion... .	corrosion		
13		Optimum selection of material, perimeter softening, design and operation, methods of corrosion prevention…	Corrosion		
14		Surface treatments using modern technologies, laser, plasma, anodizing...	Surface treatments		
15		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	Workshops/2
4. Program(s) to which it contributes	Weekly (practical lessons in the workshops)
5. Modes of Attendance offered	Annual
6. Semester/Year	. 2024-2025
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
1	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)
2		Dividing heads and their uses, straight gear milling...	Milling, horizontal milling machine, main unit		
3		Milling of helical gears and inclined racks…	Milling, horizontal milling machine, main unit		
4		Milling of works by dividing angles, internal sewer milling...	Milling, horizontal milling machine, the main unit		

5		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		
6		Getting acquainted with grinding machines, grinding stones, surface grinding machines, grinding flat, parallel, perpendicular and inclined surfaces, grinding different ducts, and round ducts…	Grinding		
7		Cylindrical grinding, external and internal	Cylindrical grinding		

		cylindrical grinding processes…			
8		Eccentric grinding and crankshaft grinding...	Eccentric grinding		
9		The age of the number machine...	the age of the number		
10		Maintenance of grinding machines (general internal and external cylindrical grinding machine)…	Grinding machines maintenance		
11		Skimming and vertical scrapers…	Skimming		
12		Sewer work on circular works using splitters on planers… .	Dividing devices on planers		
13		Maintenance of the scraping machine: Skimming machine maintenance The cart…	Skimming machine maintenance		

14		Eccentric turning and turning using the quadruple eyelet and methods of fixing the special works ...	decentralized lathe		
15		Eccentric turning and turning using the quadruple eyelet and methods of fixing the special works ...	decentralized lathe		
16		Tower lathes…	Tower lathes		
17		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		
18		1- Dismantling and maintaining the triple and quadruple samples. 2- Dismantling the moving crow and carrying out maintenance…	Lathe maintenance		
19		Definition of machine parts,	Machines programmed using G-Code		

		movement axes, control panel, definition and operation of the machine in practice...			
20		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		
21		Linear motion functions (G1, G2), segment zero point storage functions (reference points)…	Machines programmed using G-Code		
22		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		
23		Fixed functions, punching function, machine maintenance How to replace	programmed using G-Code		

		several parts ... Machines			
24		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		
25		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 …			
26		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		
27		Learn how to replace the damaged number or define a new one...	the programmed milling machine		
28		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		
29		Learn how to replace the damaged number or define a new one...	the programmed milling machine		
30		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 project
4. Program(s) to which it contributes	Weekly (theoretical lessons in the classroom)
5. Modes of Attendance offered	annual
6. Semester/Year	. 2024-2025
7. Number of hours tuition (total)	(30 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

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	Industrial Drawing/2
4. Program(s) to which it contributes	Weekly (lab lessons)
5. Modes of Attendance offered	Semester
6. Semester/Year	. 2024-2025
7. Number of hours tuition (total)	(45 hours total) 3 hours (3 practical)
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 hours per week The first (3 practical)	Pulleys and belts, their types and uses, with drawing two plates to assemble parts containing belt wheels of different types… .	Pulleys and belts	(lecture , workshop, laboratory, the side practical)	the exams orality, the exams editorial, the exams the operation exams quarterly, exams final, Evaluation daily)
2-3		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		
4-5		Bevel gears, with a drawing of an assembly plate to engage the bevel gear… .	bevel gears		
6-7		Introduction to Autodesk Inventor…	Autodesk Inventor		
8		2D drawing environment…	2D drawing		

9-10		Compilation environment…	Compilation environment		
11-12		Dynamic Analysis and Motion Environment…	Dynamic Analysis and Motion		
13		Additions to fees…	Additions to fees		
14		Introduction to Mastercam Program…	Mastercam Program		
15		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	Computer Fundamentals/2
4. Program(s) to which it contributes	Weekly (theoretical lessons in the classroom)
5. Modes of Attendance offered	semester
6. Semester/Year	. 2024-2025
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 and understands Getting to know Excel 2010 and explaining the program's interface with applications in his field of specialization	

10· Learning Outcomes, Teaching ,Learning and Assessment Method

A- Knowledge and Understanding

A 1 . The student understands Getting to know Excel 2010 and explaining the program's interface

A 2 . Understand all the commands needed to draw

A3. The student understands Home Explanation of the clipboard, font set, alignment, and number

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 understands Getting to know Excel 2010 and explaining the program's interface

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)	The student understands Getting to know Excel 2010 and explaining the program's interface	Getting to know Excel 2010 and explaining the program's interface	(lecture , workshop, laboratory, the side practical)	the exams orality, the exams editorial, the exams the operation exams quarterly, exams final, Evaluation daily)
2		The student understands Basic menus and explanation of the file menu	Basic menus and explanation of the file menu		
3		The student understands Home Explanation of the clipboard, font set, alignment, and number	Home Explanation of the clipboard, font set, alignment, and number		
4		The student understands A collection of conditional styles and formatting	A collection of conditional styles and formatting		
5		The student understands Edit group cells	Edit group cells		

6		The student understands Page Layout tab, Page Layout and Setup group	Page Layout tab, Page Layout and Setup group		
7		The student understands Sheet options set	Sheet options set		
8		The student understands Comprehensive examples of planning tables and organizing the paper	Comprehensive examples of planning tables and organizing the paper		
9		The student understands Insert tab and Tables group	Insert tab and Tables group		
10		The student understands A set of illustrations	A set of illustrations		
11		Set of charts	Set of charts		
12		The student understands Set of text and symbols	Set of text and symbols		
13		The student understands Formulas, types of functions and their insertion tab	Formulas, types of functions and their insertion tab		
14		The student understands Implementation of the simple and compound if function	Implementation of the simple and compound if function		
15		Comprehensive examples of countries of all types	Comprehensive examples of countries of all types		

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**