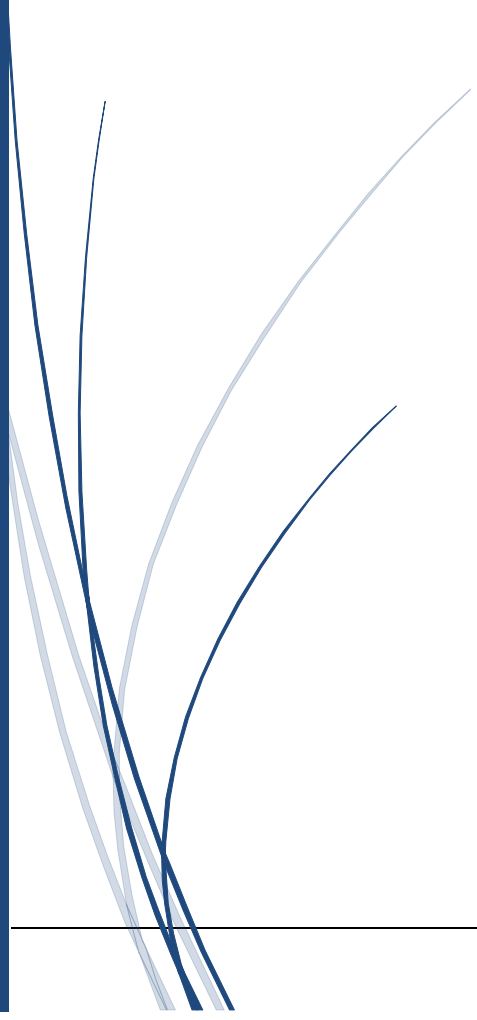
6/3/2023

Engineering Workshops

EETC101



Delivery Plan (Weekly Workshop Syllabus) المنهاج الاسبوعي للورشة	
	Material Covered
Electrical Engineering Workshop	
Week 1:	Principles of Industrial Safety in Electrical Workshops. • Electrical shock protection and safety measures. • Familiarization with tools used in electrical workshops. • Power sources and their characteristics. • Training on the use of a multimeter for measuring wire sizes.
Week 2:	Different Types of Welding Irons (with different capacities) and Spot Welding • Proper usage techniques for different types of welding irons, including spot welding. • Introduction to electric transformers and their types. • Magnetic circuits in transformers.
Week 3:	Electric Circuits and Transformer Operation. • Opening transformers and gathering information from the old transformer for primary and secondary windings. • Measurement of wire diameters for the transformer. • Types of electric motors (single-phase and three-phase), example of shaded pole motor (small water pump motor).
Week 4:	Electrical Installations and Types of Wiring (Surface and Concealed) • Types of electrical installations (surface and concealed). • Concealed wiring within pipes. • Siemens wiring installation. • Drawing a lighting installation circuit with control circuit. • Practical exercise on wiring installation.
Week 5:	Parallel Wiring of Two Lamps with a Switch and Socket • Drawing a circuit diagram for two lamps wired in parallel with a switch and socket. • Practical application of the circuit. • Drawing the internal connection for a fluorescent lamp circuit. • Replacing one lamp with a fluorescent lamp.
Week 6:	Drawing a Staircase Lamp (Two-Way Switch) Circuit • Drawing a circuit diagram for a staircase lamp with two-way switches. • Practical application of the circuit.
Week 7:	Introduction to Electrical Relays, Types, Uses, Thermal Overload Relays, Time Delay Relays • Understanding electrical relays and their types. • Applications and uses of relays. • Thermal overload relays and time delay relays.
Week 8:	Operation of Single-Face Motor with an Air Pick-Up and Push Button • Operating a single-face motor using an air pick-up and push button. • Operating the motor and changing its direction of rotation using relays and a time delay.
Mechanical Engineering Workshop	
Week 9:	Introduction to Workshop Safety • Discuss the importance of safety in workshop environments. • Cover safety rules, personal protective equipment (PPE), emergency procedures, and hazardous material handling.
Week 10:	Turning Process and Instrumentation Measures • Explain the basics of the turning process, including lathe machine components and operations. • Discuss instrumentation measures used in turning, such as calipers, micrometers, and dial indicators.
Week 11:	Cutting Tools in Turning

	• Introduce different types of cutting tools used in turning, including lathe tools, inserts, and tool holders. • Explain tool geometry, selection criteria, and tool life considerations.
Week 12:	Practical Exercise - Horizontal Turning • Demonstrate horizontal turning on a lathe machine. • Guide students in practicing turning operations, such as facing, turning, and grooving, using appropriate cutting tools.
Week 13:	Turning Different Shapes • Teach students how to turn different shapes, such as tapers, chamfers, and threads, on the lathe machine. • Cover techniques for creating internal and external threads and other complex shapes.
Week 14:	Introduction to Filing Process • Introduce the filing process and its applications in workshop activities. • Explain different types of files and their uses, including hand files, needle files, and rasp files.
Week 15:	Practical Exercise - Filing Process • Guide students in practicing filing techniques on various materials. • Demonstrate the correct filing motions, angles, and finishing methods for different surfaces and edges.
Week 16	• **Preparatory week before the final Exam**