الكفايات العملية لتخصص: **الكترونيات الطيران**

After studying the practical materials, the student is supposed to be able of achieving the following goals:-

1. Describe the precautions concerning safety in the work(**Soldering Technique).**

2. Describe correct safety procedures for hand and power tools **(Soldering Technique).**

3. Identify hand tools used by electronics technicians **(Soldering Technique).**

4. Describe the procedures used to care for hand tools **(Soldering Technique).**

5. Explain the principles of soldering and de-soldering(**Soldering Technique).**

6.Development of basic manual skills in Mechanical and Electrical works. Use of manual tools and measuring devices. Hand filing, welding, metal cutting and forming. Electrical wiring **(engineering workshop).**

7. Introduction to AutoCAD, application of AutoCAD, commands, geometric entities. Geometric construction. Dimensioning, free –hand sketching, object representation, orthographic drawing and projections **(computer lab.).**

8. Measure voltages and currents to verify KVL and KCL(**Electrical circuit lab).**

9. Identify shorts and opens in a malfunctioning circuit, and define and verify the Equivalent resistance of a given network(**Electrical circuit lab).**

10. Measure the inductance of an inductor(**Electrical circuit lab).**

11. Measure the capacitance of a capacitor **(Electrical circuit lab).**

12. To be familiar with an AC oscilloscope measurement(**Electrical circuit lab).**

13. Identify resonance circuit **(Electrical circuit lab).**

14. Analyze circuits with nonlinear elements using semiconductor characteristics

**(Electronic Devices and Circuits Lab.1).**

15. Measure relevant quantities and parameters in electronic circuits using oscilloscopes, multimeters, function generators, and power supplies

(Electronic Devices and Circuits Lab.1).

16. Describe an experimental procedure involving circuits with semiconductor devices

(Electronic Devices and Circuits Lab.1).

17. To understand the characteristics of digital logic and the design, construction, testing and debugging of simple digital circuits **(digital fundamental lab.).**

18. To understand the fundamental concepts and terminology of pulse circuits **(pulse circuit lab.).**

19. To practice applying rectangular waves to RC & RL circuits **(pulse circuit lab.).**

20. To explore sawtooth generators and paraphrase amplifiers **(pulse circuit lab.).**

21. To be able to differentiate between types of multivibrators(**pulse circuit lab.).**
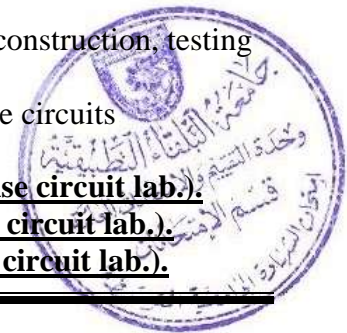
22. To illustrate classroom topics using a "hands-on" approach to the design, construction, and testing of a microprocessor-based computer and its associated sections - CPU, memory, I/O, interrupts, and programming**(microprocessor lab.).**

23. Characterize and verify the specifications of various communication system building blocks including amplifiers, mixers, detectors, and filters **(communication lab**.).

24. Design and construct communications subsystems to achieve specified performance **(communication lab.).**

25. Verify the performance of communications subsystems in accordance with theoretical expectations **(communication lab.).**

26. Learn and apply correct laboratory technique appropriate to working with high frequency circuitry and instrumentation**(antenna lab.).**

27. To understand the basic principles of electromagnetic wave propagation**(antenna lab.).**

28. Characterize and verify the specifications of various antenna types **(antenna lab.).**

29. Design and construct antenna systems to achieve specified performance **(antenna lab.).**

30. Verify the performance of practical antennas**(antenna lab.).**

31. To teach the students more sophisticated transistor models **(Electronic Devices and Circuits Lab.2).**

32. To make them able to analyze and design single and multistage amplifiers using handanalysis techniques and computer simulation **(Electronic Devices and Circuits Lab.1).**

33. To introduce the students to the high frequency behavior and related trade offs inamplifiers design**(Electronic Devices and Circuits Lab.1).**

34. To prepare the students to higher level analog IC design course