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دليل الأجهزة  
جامعة تبوك



# دليل الأجهزة جامعة تبوك

الإعداد والمراجعة

اللجنة الدائمة للأجهزة

بجامعة تبوك




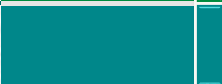

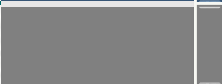
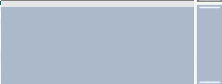


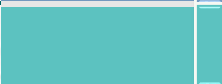









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## Faculties Key

No.	Color	Faculty	Location
1		Faculty of Medicine	Main Campus
2		Faculty of Pharmacy	Main Campus
3		Faculty of Applied Medical Sciences	Main Campus
4		Faculty of Science	Main Campus
5		Faculty of Engineering	Main Campus
6		Faculty of Art and Design	Main Campus
7		Prince Fahd bin Sultan Chair	Main Campus
8		Clinical Simulation Unit	Main Campus
9		University College	Tayma
10		University College	Al wajh
11		University College	Haql
12		University College	Umluj
13		University College	Duba







# INSTRUMENTS

## Abbe Refractometer with Digital Thermometer

### About

provides a quick and easy means for determining the refractive index  $n_D$  and mean dispersion  $n_F - n_C$  of liquids (transparent/translucent) and solids, mainly the transparent liquids. Connected with a constant-temperature bath, it can measure the refractive index  $n_D$  within the temperature 0-70 degree.



## Atomic Absorption Spectroscopy

### About

Atomic absorption spectrometry (AAS) is an easy, high-throughput, and inexpensive technology used primarily to analyze elements in solution. As such, AAS is used in food and beverage, water, clinical research, and pharmaceutical analysis. It is also used in mining operations to determine, for instance, the percentage of precious metal in ores.



## Automated Titrators

### About

Automating the traditional titrator so that the titration, results calculation, sample preparation, and sample series analysis. By incorporating an automated system user increase reproducibility and repeatability while simultaneously reducing labor time per sample. This also eliminates human errors and optimizes operational safety of lab personnel.



## Automated Transdermal Diffusion Cell Sampling System (Dry Heat)

### About

Dry heating transdermal diffusion system that is designed to test in-vitro permeation rate for semi-solid dosage and topical drug formulation, as well as for cosmetics products, such as ointment, gels, transdermal patches, face masks, lotion, sunscreen, etc.



## Automatic Benchtop Tissue Processor, Semi-Enclosed

### About

Tissue processor is a semi-enclosed filtration system that combines proven technology and a modern, functionally enhanced design. Gentle specimen processing and maximum safety at all stages of processing are the result of precise engineering design based on proven and precise mechanics in conjunction with a modern user interface.



## Automatic Hematology Analyzer

### About

Automated hematology analyzers can rapidly analyze whole blood specimens for the complete blood count (CBC). Results include red blood cell (RBC) count, white blood cell (WBC) count, platelet count, hemoglobin concentration, hematocrit, RBC indices, and a leukocyte differential.



## Automatic Kjeldahl Analyzer

### About

It is widely used in food processing, feed production, tobacco, livestock, soil fertility, environmental monitoring, medicine, agriculture, scientific research, teaching, quality control and other fields for the test of nitrogen or protein content, can also be used for the test of ammonium, volatile fatty acid/ alkali, and so on.



## Automatic Vicat Machine

### About

provides a completely automatic method for determinations. The device determines the initial and final setting time of cements of mortar pastes. The machine comes complete with the integral printer and two hardened needles (one with 1mm diameter and one 1.13mm diameter).



## Cardiolife Defibrillator

### About

Every day the Cardiolife performs a self-test. It collects and saves the data on resuscitation (ECG and event information) for 30 minutes, continuous VT/VF analysis algorithm analyses the ECG waveform, even during CPR, operates in a wide range of temperatures.



## Chemistry Analyzer

### About

medical laboratory devices used to calculate the concentration of certain substances within samples of serum, plasma, urine and/or other body fluids. Substances analyzed through these instruments include certain metabolites, electrolytes, proteins, and/or drugs.



## DDS Function Generator

### About

A Function Generator is usually a piece of electronic test equipment or software used to generate different types of electrical waveforms over a wide range of frequencies. Some of the most common waveforms produced by the function generator are the sine wave, square wave, triangular wave, and sawtooth shapes. These waveforms can be either repetitive or single shot (which requires an internal or external trigger source).



## Double Beam UV-Vis. Spectrophotometer

### About

In a double beam UV visible spectrophotometer, only light of a specific wavelength is extracted from the double beams or resulting spectrum. The light rays are extracted from the exit slit opening of the spectrophotometer device. The monochromatic light intensity irradiates the samples and intensity is detected.



## ECG

### About

Records the electrical signal from the heart to check for different heart conditions. Electrodes are placed on the chest to record the heart's electrical signals, which cause the heart to beat. The signals are shown as waves on an attached computer monitor or printer.



## ELISA Reader

### About

Measuring the intensity of light throughout a part of the spectrum—that lets scientists measure the reactions of antigens and antibodies in a solution through enzyme activity.





## Fluorescence Spectrophotometer

### About

Detect and analyze organic compounds. Used in biology, chemistry, and environmental science laboratories, the fluorescence spectrometer measures the fluorescence of a molecule to gather information about its components and chemical environment. The two main types of fluorescence spectrometers are filter fluorimeters, which use filters to isolate the different types of light, and spectrofluorimeters, which isolate the types of light with diffraction grating monochromators.



## Fluorimeter

### About

A description is given of a photoelectric fluorimeter using two photocells in a null circuit. The method of use to give greatest accuracy in estimation of the concentration of a fluorescing solution is considered theoretically; it is shown that by working with dilute solutions the effect of impurities may be detected and sometimes be eliminated.



## Gamry 600

### About

The Reference 600 is a high-performance, research-grade potentiostat / galvanostat / ZRA designed for fast, low-current measurements. It does well for a variety of applications such as physical electrochemistry (especially at microelectrodes), fast cyclic voltammetry, electrochemical corrosion, electrochemical noise measurements, paints and coatings, and sensors.



## Gas Chromatography

### About

An analytical instrument that measures the content of various components in a sample. The analysis performed by a gas chromatograph is called gas chromatography.



## Gas Chromatography/Mass Spectrometry (GC/MS)

### About

Can be used to study liquid, gaseous, or solid samples. Analysis begins with the gas chromatograph, where the sample is effectively vaporized into the gas phase and separated into its various components using a capillary column coated with a stationary (liquid or solid) phase.



## Hemostasis Analyzer

### About

A hemostasis analyzer can analyze compromised icteric, hemolytic, and lipemic samples in as little as 3 minutes. User-friendly test menus include rapid mechanical, optical, chromogenic or immunoturbidimetric assays for routine and/or STAT testing.



## Half-Auto Digital Brinell Hardness Tester for Testing of Raw Materials

### About

Half automatic and intelligent Brinell hardness testing machine, it adopts the load cell to replace the traditional quality weight, this innovative design makes the instrument more accurate.



## High Performance Liquid Chromatography HPLC

### About

High-performance liquid chromatography or commonly known as HPLC, is an analytical technique used to separate, identify, or quantify each component in a mixture.

The mixture is separated using the basic principle of column chromatography and then identified and quantified by spectroscopy.



## High Performance Liquid Chromatography HPLC/MS

### About

HPLC-MS is an effective analytical technique for determining the composition and purity of chemicals. The combination of high-performance liquid chromatography (HPLC) and mass spectrometry (MS) offers great capabilities in physical separation and mass analysis, providing accurate data on sample composition.



## HumaReader HS

### About

Humareader HS, a Microtiter plate reader, is a high-speed plate reader, is easy to use and provides reliable and fast results. A high-speed plate reader designed, is easy to use and provides reliable and fast results.



## I.R. Spectrophotometer

### About

IR spectroscopy has long been used for qualitative analysis as an IR spectrum is like a “chemical fingerprint” of a chemical species. This makes IR spectroscopy a powerful technique for identifying what substances are present in a sample, making it a valuable chemical identification tool not only in a laboratory setting, but in virtually any industry.



## Keithley Source Meters

### About

Keithley's Source Measure Unit (SMU) Instruments are designed specifically for test applications that demand tightly coupled sourcing and measurement. and provide precision voltage and current sourcing as well as measurement capabilities.



## Micro Ball Milling

### About

Micro Ball Mill grinds and homogenizes small sample volumes quickly and efficiently by impact and friction. They are suitable for dry, wet and cryogenic grinding as well as for cell disruption for DNA/RNA recovery.



## Microplate Reader

### About

A microplate reader is a laboratory instrument that is used to measure chemical, biological or physical reactions, properties, and analytes within the well of a microplate. A microplate consists of small wells in which separated reactions take place. In the microplate, these reactions convert the presence of an analyte or the progression of biochemical processes into optical signals.



## Microtome

### About

A microtome is a specialized precision cutting instrument, which accurately and repeatedly slices sections from a block of embedded tissue. Different kinds of microtomes are used to section paraffin and plastic embedded tissues



## Microtome Cryostat

### About

a unique complete bench top cryostat for use in histology/pathology and research laboratories. The compact design makes this instrument an ideal backup for installed high-end cryostats and cost-efficient alternative for low turnover applications.





## Molecular Imager Gel Doc XR+ System with Image Lab

### About

The Gel Doc XR+ system optimizes reproducibility and reliability of experimental data, enabling quantitative comparisons between different experiments. Using proprietary algorithms, this imaging system is calibrated at setup to ensure Images are in focus at all times, regardless of zoom level or sample position



## Multichannel Analyzer

### About

The multichannel analyzer (MCA) is an important laboratory instrument which can measure distributions of input signals consisting of pulses. It operates in two different modes: pulse height analyzer (PHA) mode, and multichannel scaler (MCS) mode.



## Multi-Functional Surgical Platform

### About

The SurgiSuite Multi-Functional Surgical Platform has an easy-to-clean, chemical resistant base which includes a channel for collecting fluids during surgical operations.



## NanoDrop™ One/OneC Microvolume UV-Vis Spectrophotometer

### About

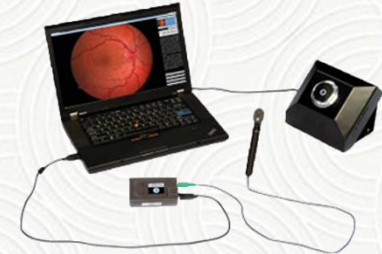
NanoDrop™ One/OneC Microvolume UV-Vis Spectrophotometer  
Quantify and qualify DNA, RNA, and protein samples in seconds with only 1-2  $\mu\text{L}$ , and obtain full-spectral data before you decide to use samples in downstream applications.



## OphthoSim

### About

OphthoSim™ Ophthalmoscope: Allows students to practice monocular vision and improve their ophthalmoscopic/fundusoscopic technique.  
Realistic OphthoSim™ Eye Geometry - Replicates the magnification of lens in the human eye and different clinical conditions



## Oscilloscope

### About

An oscilloscope is a laboratory instrument commonly used to display and analyze the waveform of electronic signals. In effect, the device draws a graph of the instantaneous signal voltage as a function of time.



## Precision Interferometer

### About

optical instrument that splits a beam of light in two, sends the parts along perpendicular paths, and then brings them back together.



## Sensor Cassy

### About

Sensor-CASSY (USB or serial respectively) is a cascable interface device for recording measurement data: For connection to the USB port of a computer or to the RS-232 serial interface respectively, another CASSY module or the CASSY display. 4-fold electrical isolation (inputs A and B, relay R, voltage source S).



## Single Beam UV/Vis Spectrophotometer

### About

Single beam spectrophotometers determine color by measuring the intensity of the light sources before versus after a test sample is inserted. This light source is modulated (turned on and off) to differentiate the light coming from the light source versus the light coming from the flame.



## Slit Lamp

### About

designed to provide high quality service at an economical price. The popular vertical illumination column features controls in common locations to provide ease of use. The optical head is a converging style with a two-step magnification changer.



## Spectrometer

### About

A spectrometer measures the reflection or transmission of light by an object, usually in wavelength range from about 360 nanometers (nm) to 760 nm. A spectrophotometer measures the full color spectrum and produces spectral color data that is typically not detected by the human eye.



## Spin Coating Unit

### About

Spin coating is a technique used to spread uniform thin films on flat substrates by centrifugal force. and used for spin coating is called a spin coater, or a spinner. A solution of material is dispensed onto the center of a wafer, which is then rotated at high speed.



## Surgical Simulator LabSim

### About

Offers a comprehensive portfolio of medical endoscopic simulation training exercises that range from functions of the scope handle and tube, to loop reduction. Each exercise is customizable to provide complications and ongoing challenges.



## Tablet disintegration tester

### About

It is used to test the disintegration rates of solid dosage formulas, mouth films and others



## Tablet Friability

### About

Friability testing is used to test the durability of tablets during packing processes and transit. This involves repeatedly dropping a sample of tablets over a fixed time, using a rotating drum with a baffle.



## Thermal Cycler

### About

amplify segments of DNA via the polymerase chain reaction (PCR). Thermal cyclers may also be used in laboratories to facilitate other temperature-sensitive reactions, including restriction enzyme digestion or rapid diagnostics.





## Thermal Vapor Deposition Unit

### About

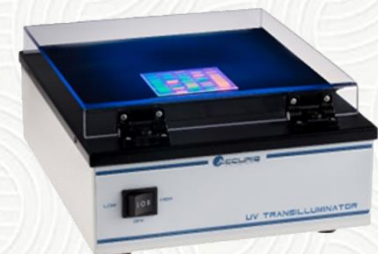
The instrument is a high vacuum compact thermal evaporation coater with evaporation temperature from 200°C to 1700°C. The tungsten wire basket is used as the evaporation source, and the evaporation source is built in at the bottom of high purity alumina crucible. The upper cover is equipped with a rotatable sample stage, which can effectively improve the uniformity of film formation.



## UV Transilluminator

### About

UV transilluminators are used in molecular biology laboratories to view DNA or RNA that has been separated by electrophoresis through an agarose gel. Exposing the stained gel to a UV light source causes the DNA to fluoresce and become visible.



## UV-Illuminator (FI-20)

### About

The UV illuminator offers the researcher uniform and intense sources of ultraviolet light (radiation) in a compact package. The special design emits high intensity excitation UV wavelength for back-illumination of transparent fluorescent materials.



## Vital Signs Monitor

### About

Vital signs monitor measures the basic medical indicators of health - temperature, pulse, breathing, and blood pressure. Most monitors can store and record thousands of pieces of information.



## Wava form Generator

### About

Exclusive Trueform signal generation technology offer more capability, fidelity, and flexibility than previous generation DDS generators. Easily generate the full range of signals you need with confidence that the signal generator is outputting the signals you expect.



## X-ray Diffraction

### About

An X-ray diffractometer, or XRD machine, is a device for analyzing and measuring the structure of materials. X-rays have high energy and short wavelength when compared to visible light making them ideal for probing the interplanar distances in crystalline materials.



## Zetasizer








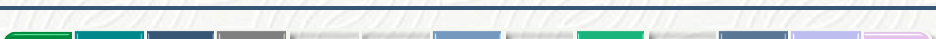










### About

High performance two angle particle, zeta-potential, and molecular size analyzer for the enhanced detection of aggregates and small particles.
















# EQUIPMENTS & APPARATUS




















1.	3D Printer	
2.	3D Scanner	
3.	AC-DC POWER SUPPLY	
4.	Adult Weighing Scale with Height Measurement	
5.	Analog Multimeter	
6.	Analytical Balance	
7.	Anemometer	
8.	Arrow-Tech	
9.	Autoclave	
10.	Baby Scale	
11.	Balmer Series Apparatus	
12.	Bibby Centrifuge	
13.	Biosafety Cabinet	
14.	BMS Hemolysis	
15.	Boyle's Law Experiment Apparatus	
16.	Button Machine	
17.	Buttonhole Machine	
18.	Cabinet Bio II Advance	
19.	Cardiac And Respiratory Simulator	







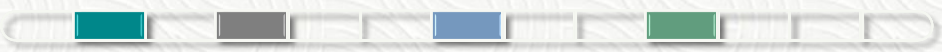












20.	Centrifuges	
21.	Chlorine & Cyanuric Acid ISM	
22.	Circulating Water Cooler	
23.	Class II Safety Cabinet	
24.	CO <sub>2</sub> Incubator	
25.	Colony Counter	
26.	Colorimeter	
27.	Concentric Heat Exchanger	
28.	Concrete Creep Testing Rig	
29.	Conductivity Meter	
30.	Constant Head Permeability	
31.	Cooling Centrifuge	
32.	Critical Speed Investigation Apparatus	
33.	Cross Flow Heat Exchanger	
34.	Crowcon Gas Detector	
35.	DC-Power Supply	
36.	Deionized Water Generator	
37.	Digital Lux Meter	
38.	Digital Multimeter	




















39.	Digital Rocking Shaker	
40.	Digital Sphygmomanometer	
41.	Direct Shear Test Apparatus	
42.	Disc Dispenser	
43.	Discriminator Preamplifier	
44.	Dissection Microscope (Anatomy Microscope)	
45.	Dissolution Tester	
46.	Dissolved Oxygen Meter	
47.	Dryer, Dry Heat Sterilizer	
48.	Electric Scissors (Rectangular Scissors)	
49.	Electrophoresis	
50.	Electrophoresis (H)	
51.	Electrophoresis (V)	
52.	ELISA Washer	
53.	Environment Meter	
54.	ESR Reader	
55.	Exhaust Gas Chamber	
56.	Falling Head Permeability	
57.	Fine Beam Tube	









































58.	Flotation Bath	
59.	Flow Cabinet ISO Class 5	
60.	Flowmeter	
61.	Fraction Collector	
62.	Franck-Hertz Supply	
63.	Freeze Dry System	
64.	Freezer	
65.	Frey Scientific DC Galvanometer	
66.	Fume Hood	
67.	Galvanometer	
68.	Gas Generator	
69.	Geiger Counter & Rate Meter, Geiger Muller Tube	
70.	Gel Casting Systems	
71.	Gel Dryer	
72.	Generator	
73.	Glucometer	
74.	Goniometer	
75.	Hand Refractometer	
76.	Heater Mantle	

77.	Hemoglobinometer	
78.	Hot Plate Stirrer	
79.	Hydraulics Bench	
80.	Hygrometer	
81.	ICE Maker	
82.	Ilmvac Lab Vacuum Pump System	
83.	Incubator	
84.	Infrared Therapy	
85.	Infusion Pump	
86.	Kymogram (Tissue & Organ Bath)	
87.	Laminar Flow Table	
88.	Laser Motion Sensor	
89.	Lathe Machine	
90.	LCR Q-Meter	
91.	Liner Slide Stainer	
92.	LND   Nuclear Radiation Detectors	
93.	Low Voltage Power Supply	
94.	Lyophilizer	
95.	Magnetic Stirrer	

96. Manual Polarimeter	
97. Manual Vicat Apparatus	
98. Master Heat Gun	
99. Measure The Speed of Light Experiment Apparatus	
100. Measuring Amplifier	
101. Mechanical Shaker	
102. Melting Point Apparatus	
103. Membrane Vacuum Pump	
104. Mercury Sphygmomanometer	
105. Micro Clave Selecta	
106. Microfuge	
107. Micro-Hematocrit Centrifuge	
108. Microscope	
109. Microwave	
110. Milli Ampere Ammeter	
111. Milling Machine	
112. Millkan Apparatus	
113. Miniature Power Plant	
114. Mixer/Rotator	

115. Mobile Laser	
116. Morgue Unit	
117. Multi Machine Control Unit Leybold	
118. Multi-Block Heater	
119. Non-Invasive ECG Monitor	
120. Oven	
121. Overlock Sewing Machine	
122. Paraffin Bath	
123. Paraffin Wax Embedding Center	
124. PCR Carry Over	
125. PCR Carry Over Cabinets	
126. Pendulum Impact Test Apparatus	
127. pH Meter	
128. PH/MV/EC/TDS/& Temperature Meter	
129. Photoconductivity Cell	
130. photometer	
131. Physio suite	
132. Pigmented Slides Apparatus	
133. Pipe Surge and Water Hammer	

134. Plantar Test	
135. Plasma Welding Equipment	
136. PLC Training set	
137. Polarimeter	
138. Polarization in Sugar	
139. Polarization of Light	
140. Power Lab	
141. Power Supply for Breadboard	
142. Power Supply Leybold	
143. Recirculating Chiller F-105	
144. Refrigerator	
145. Roller Mixer	
146. Rotary Evaporator with Pump	
147. Safety Cabinet	
148. Scanning Electron Microscopy	
149. Sewing Machine	
150. Shaking Water Bath Instrument	
151. Slide Drying	
152. Soil Turbidity Device	

153. Somnosuite	
154. Sonicator	
155. Spectrum Techniques St350 Radiation	
156. Spirometer	
157. Stereo Microscope	
158. Stress And Strain Analysis on Thin-Walled Cylinder	
159. Stress Strain Apparatus	
160. Tablet Hardness Tester	
161. Tail Bending Machine	
162. Telemetry System	
163. Temperature Control Instrument	
164. The Stable Muffle Furnace	
165. Three Phases Resistive Load Leybold	
166. Tissue Homogenizer	
167. Triaxial Shear Apparatus	
168. Turbidimeter	
169. Ultrasonic Bath	
170. Ultrasonic Cleaner	
171. Ultrasound	

172. UV Accelerated Weathering Tester Cabinet



173. Vacuum Controller



174. Vacuum Press



175. Vacuum Pump



176. Vascular Blood Flow Device



177. Viscometer



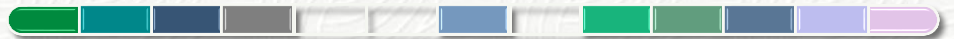
178. Voltmeter



179. Vortex Mixer



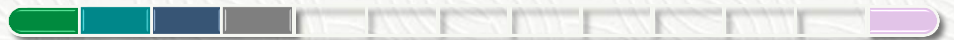
180. Water Bath



181. Water Bath with Temperature Regulator



182. Water Distillater



183. Water heater



184. Wheatstone Bridge



185. Winston



186. Young Coefficient Experiment Apparatus



187. Zoom Stereo Microscope





# REFERENCES



## References:

1. <https://www.fishersci.co.uk/gb/en/home.html>
2. <https://www.bruker.com/en.html>
3. <https://www.shimadzu.com/>
4. <https://adamequipment.com/>
5. <https://www.coleparmer.com/>
6. [http://www.jenway-tech.com/en\\_us/](http://www.jenway-tech.com/en_us/)







حقوق الطبع محفوظة... 

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