

# Pharmacy

| Faculty  | Lab                  | Equipment                                       | Model                           | Manufacturer Year | Available Units   | Functions  |
|----------|----------------------|---|---------------------------------|-------------------|-------------------|--|
| Pharmacy | Central lab          | HPLC  | 200uv/v/s                       | 2000              | 1                 |  |
|          |                      |   |                                 |                   |                   |  |
|          |                      | GC_MS   | DSQ II GC/MS                    | 2010              | 1                 | تحليل الكروماتوجرافي الغازي _ مطياف الكتلة   |
|          |                      | FT-IR   | Is10                            | 2000              | 1                 | تحليل الطيف بالأشعة تحت الحمراء  |
|          |                      | UV  | Uv-1603                         | 1992              | 1                 |  |
|          |                      | GC/MS   | DSQ2-FOCUS GC                   | 2009              | 1                 | قياس نسبة التلوث وتركيز الملوثات المتطايرة في الهواء والغذاء   |
|          |                      | nano drop                                       | nano drop                       | 2017              | 1                 | nanodrop   |
|          |                      | Freeze dry system                               | LYPH LOCK 4.5                   | 2000              | 1                 | Freeze Drying  |
|          |                      | FTIR( A.T.R)                                    | NICOLET IS10                    | 2009              | 1                 | يستخدم لقياس جميع انواع العينات (صلبه-سائله) بالأشعة تحت الحمراء   |
|          |                      | HPLC الجهاز                                     | AZURA                           | 2016              | 1                 | تحليل الملوثات الغذائية وملوثات الماء والهواء ورصد المواد السامة البيئية التي قد تهدد السلامة المهنية أو الصحة كما أو كيفا |
|          |                      | CENTRIFUGE                                      | 2-16P                           | 2009              | 2                 | الطرد المركزي لترسيب المركبات أو الملوثات المختلفة قبل إجراء التجارب عليها   |
|          | Biological lab       | Microbiological Safety Cabinat Laminar air flow | Aura 2000- M.A.C4               | 0                 | 1                 | جهاز يعمل علي تعقيم المكان و تهيئته لاجراء الابحاث البيولوجي و البكتريولوجي  |
|          |                      | Inverted microscope                             | GX                              | 0                 | 1                 | ميكروسكوب مقلوب كامل لرؤية الخلايا الحية و تصويرها و مزود بكمبيوتر و طباعة الوان   |
|          |                      | ICE MAKER                                       | VS-625NS                        | 0                 | 1                 | لاستخراج الثلج للعمل في الابحاث البيولوجية   |
|          |                      | Centrifuge                                      | IEC Centra-4R                   | 0                 | 1                 | جهاز طرد مركزي لفصل السوائل البيولوجية   |
|          |                      | Digital visible spectrometer                    | V-1600                          | 0                 | 1                 | جهاز لقياس نسبة الضوء الممتصة و المنبعثة من السوائل الملونة  |
|          |                      | ROTARY EVAPORATOR                               | RE 100-Pro LCD                  | 0                 | 1                 | تبخير المذيبات العضوية   |
|          |                      | BINOCULAR MICROSCOPE                            | Academic stereo zoom microscope | 0                 | 1                 | ميكروسكوب ابحاث لرؤية الاشياء الدقيقة  |
|          |                      | Carbon dioxide cylinder                         |                                 | 0                 | 1                 | للتوصيل بالحضانة لمد الخلايا بالغاز  |
|          |                      | ELISA   | ELx800                          | 0                 | 1                 | Measure the optical density of solutions in 96-well microplates  |
|          |                      | Shaker  | G 33                            | 2009              | 1                 | None   |
|          |                      | Shaker with incubator                           | G – 25 R                        | 2009              | 1                 | None   |
|          |                      | laminar flow                                    | TL2448                          | 2009              | 1                 | None   |
|          |                      | laminar flow hood                               | AURA 2000 MAC4                  | 2007              | 1                 | None   |
|          |                      | co2 incubator                                   | 5015-2                          | 2007              | 1                 | None   |
|          |                      | Real time PCR Machine                           | Rotor-Gene Q 2plex HRM Platform | 2009              | 1                 | Gene detection and quantification  |
|          | PCR thermocycler     | Thermocycler 2001                               | 2001                            | 1                 | Gene detection    |  |
|          | Western blot machine |   | 2012                            | 1                 | Protein detection |  |

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| Pharmacy |                                 | Refrigerated Centrifuge                         | Refrigerated Centrifuge(ACM-4100d)      | 2008              | 1                           | Centrifugation of specimens at cold temperatures  |
|          |                                 | DNA Gel electrophoresis submarine               | SUBHT High throughput Submarine Unit    | 2009              | 1                           | DNA separation  |
|          |                                 | Protein gel electrophoresis                     | Electro-pour dual vertical system       | 2010              | 1                           | Protein separation  |
|          |                                 | Autoclave                                       | Direct industry                         | 2008              | 1                           | Sterilization of media  |
|          |                                 | Hot air sterilizing oven                        | Laboratory electric oven universal type | 2005              | 1                           | Sterilization of glass wares  |
|          |                                 | Shaker incubator                                | Shel lab mini shaking incubator         | 2007              | 1                           | Incubation of microorganisms  |
|          |                                 | Incubator                                       | Compact forced air incubator            | 1970              | 3                           | Incubation of microorganisms  |
|          |                                 | Water bath                                      | Digital display water bath              | 2003              | 1                           | Warming of samples  |
|          |                                 | Vortex  | Whirlimixer brand                       | 1970              | 1                           | Liquid mixing   |
|          |                                 | PCR thermal cycler                              | TC96K                                   | 2016              | 1                           | It is used to amplify segments of DNA via the polymerase chain reaction                             |
|          |                                 | Cooling Centrifuge                              | PRO-RESEARCH.K2015R                     | 2018              | 2                           | Centrifugation of samples at consistent range of temperature  |
|          |                                 | Colorimeter                                     | WPA CO7500 B 80-3000-44                 | 2017              | 1                           | Test the concentration of a solution by measuring its absorbance of a specific wavelength of light. |
|          |                                 | Microbiological Safety Cabinet Laminar Air flow | Topsafe 1.2                             | 2007              | 1                           | Laminar airflow Cabinet   |
|          |                                 | T-Shaker thermo mixer                           | EMS-100                                 | 2017              | 1                           | Eppendorf shaker and incubator  |
|          |                                 | Laboratory ultra low freezer – 86c professional | CVF 330/86                              | 2011              | 1                           | Freezing at -80   |
|          |                                 | Gel electrophoresis                             | MSMINI                                  | 0                 | 1                           | Separation of DNA fragments   |
|          |                                 | Gel documentation system                        | GELDOC 1.4                              | 0                 | 1                           | Imaging and documentation of DNA separated within agarose gels                                      |
|          |                                 | Microarray spotter                              | SPA3 XP                                 | 2013              | 1                           | Microarray slides printing  |
|          |                                 | Multiplate Microarray hybridization station     | MMBS220                                 | 2013              | 1                           | Microarray reaction   |
|          | Microarray Colorimetric scanner | SPW220  | 2015                                    | 1                 | Microarray slides detection |   |

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|-----------------|---|---|---|-------------------|----------------------------|---|
| <b>Pharmacy</b> | Microbiology and Immunology Research Laboratory | Real time PCR Machine                           | Rotor-Gene Q 2plex HRM Platform         | 2009              | 1                          | Gene detection and quantification   |
|                 |   | PCR thermocycler                                | Thermocycler 2001                       | 2001              | 1                          | Gene detection  |
|                 |   | Western blot machine                            |   | 2012              | 1                          | Protein detection   |
|                 |   | Refrigerated Centrifuge                         | Refrigerated Centrifuge(ACM-4100d)      | 2008              | 1                          | Centrifugation of specimens at cold temperatures  |
|                 |   | DNA Gel electrophoresis submarine               | SUBHT High throughput Submarine Unit    | 2009              | 1                          | DNA separation  |
|                 |   | Protein gel electrophoresis                     | Electro-pour dual vertical system       | 2010              | 1                          | Protein separation  |
|                 |   | Autoclave                                       | Direct industry                         | 2008              | 1                          | Sterilization of media  |
|                 |   | Hot air sterilizing oven                        | Laboratory electric oven universal type | 2005              | 1                          | Sterilization of glass wares  |
|                 |   | Shaker incubator                                | Shel lab mini shaking incubator         | 2007              | 1                          | Incubation of microorganisms  |
|                 |   | Incubator                                       | Compact forced air incubator            | 1970              | 3                          | Incubation of microorganisms  |
|                 |   | Water bath                                      | Digital display water bath              | 2003              | 1                          | Warming of samples  |
|                 |   | Vortex  | Whirlimixer brand                       | 1970              | 1                          | Liquid mixing   |
|                 |   | PCR thermal cycler                              | TC96K                                   | 2016              | 1                          | It is used to amplify segments of DNA via the polymerase chain reaction                             |
|                 |   | Cooling Centrifuge                              | PRO-RESEARCH.K2015R                     | 2018              | 2                          | Centrifugation of samples at consistent range of temperature  |
|                 |   | Colorimeter                                     | WPA CO7500 B 80-3000-44                 | 2017              | 1                          | Test the concentration of a solution by measuring its absorbance of a specific wavelength of light. |
|                 |   | Microbiological Safety Cabinet Laminar Air flow | Topsafe 1.2                             | 2007              | 1                          | Laminar airflow Cabinet   |
|                 |   | T-Shaker thermo mixer                           | EMS-100                                 | 2017              | 1                          | Eppendorf shaker and incubator  |
|                 |   | Laboratory ultra low freezer – 86c professional | CVF 330/86                              | 2011              | 1                          | Freezing at -80   |
|                 |   | Gel electrophoresis                             | MSMINI                                  | 0                 | 1                          | Separation of DNA fragments   |
|                 |   | Gel documentation system                        | GELDOC 1.4                              | 0                 | 1                          | Imaging and documentation of DNA separated within agarose gels                                      |
|                 | Microarray spotter                              | SPA3 XP   | 2013                                    | 1                 | Microarray slides printing |   |

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| Pharmacy |   | Multiplate Microarray hybridization station   | MMBS220  | 2013              | 1               | Microarray reaction   |
|          |   | Microarray Colorimetric scanner               | SPW220   | 2015              | 1               | Microarray slides detection   |
|          | Prof Shehta Said Research Laboratory (Pharmacology and Toxicology Department) | Step-One Plus RT-PCR System                   | Step-One Plus Real Time Polymerase Chain Reaction (RT-PCR) System- REF: 4376592                  | 2016              | 1               | Quantitation experiments- Quantitative RT-PCR (One-step or Two-steps)- Singleplex or Multiplex PCR TaqMan gene expression assays- SYBR Green gene expression assays- Genotyping experiments-TaqMan SNP genotyping assay- TaqMan Drug metabolism genotyping assay- Presence/absence experiments- TaqMan gene expression assays |
|          |   | Physiograph                                   | Thermoregulator: FTE10AD Force transducer: Type 372 Data acquisition (DAQ) device): PowerLab/400 | 2013              | 1               | An invitro device used for pharmacological assessment of sensitivity of isolated organs towards chemical agents.  |
|          |   | UV-Vis double beam Spectrophotometer          | UVD-2950   | 0                 | 1               | Spectrophotometer Model UVD-2950 can be used extensively for qualitative and quantitative analysis in such fields as pharmaceutical inspection, clinical analysis, petro-chemistry laboratories, chemistry and biochemistry laboratories, DNA/RNA analysis as well as in quality control departments.                         |
|          |   | Single Beam Spectrophotometer                 | S-1200   | 0                 | 1               | UNICO 1200 Series are reliable and expandable. UNICO Model 1200 has Absorbance, Transmittance and Concentration modes with automatic zeroing and blanking in a single button push.  |
|          |   | Daihan Multifunction Vortex Mixer Model VM-10 | Model VM-10  | 0                 | 1               | Mixing of almost all common tubes- Speed rang 0-3.300 rpm Dimensions (wxdxh) (mm) 162x128x145 Body Aluminum Die-casting with power coating 3-position power Switch Operation Aluminum Die-casting with power coting   |
|          |   | Compact Centrifuge                            | model Z 206 A  | 2008              | 2               | centrifugation of epinodorffs only.   |
|          |   | Thermo fisher- lab freezer -80°C              | EXF24086V  | 2015              | 1               | Revco EXF Series Ultra-Low Freezer, 240-Box Capacity, 230V, 50Hz Temperature Range -50°C to -86°C   |
|          | NMR unit  | Bruker FT-NMR Spectrometer                    | Ascend 400 MHZ with Avance III HD console  | 2017              | 1               | Used in quality control and research, for determining the content and purity of a sample as well as its molecular structure.  |

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| <b>Pharmacy</b>   | the unit of drug analysis | HPLC                                     | UFLC/ 20LC- Pump               | 2015              | 1   | Quantitative and Qualitative Analysis- UV & Fluorescence detector  |
|                   |                           | Capillary Electrophoresis                | G7100 CE                       | 2015              | 1   | Stability studies, Quantitative & Qualitative analysis   |
|                   |                           | UV-visible double beam spectrophotometer | Dynamica HALO DB-20            | 2015              | 1   | High performance double beam spectrophotometer suitable for analytical applications where a higher level of accuracy   |
|                   |                           | Lyophilizer (Freeze Dryer)               | SIM FD8-8T                     | 2009              | 1   | Lyophilization: executes a water removal process typically used to preserve perishable materials, to extend shelf life or make the material more convenient for transport. |
| <b>Veterinary</b> | Central Lab Vet           | High speed cooling centrifuge            | 3-16PK                         | 0                 | 1   | Separating sample components at temperature range -10 to 40 C  |
|                   |                           | Semi-automated spectrophotometer         | 6715                           | 0                 | 1   | Detection of concentration of chemicals in samples of blood and tissue   |
|                   |                           | High speed microcentrifuge               | C2015                          | 0                 | 1   | Separation of sample components in Eppendorf tubes   |
|                   |                           | Ultra deep freezing -80 0C               | Ilshin Lab                     | 0                 | 1   | Samples preservation   |
|                   |                           | Vertical electrophoresis                 | MF-10WdSys                     | 0                 | 1   | Protein fractionation  |
|                   |                           | Atomic absorption                        | PG990                          | 0                 | 1   | Trace elements assay   |
|                   |                           | VICAM Series-4EX Fluorometer             | Series-4EX                     | 0                 | 1   | Mycotoxins determination   |
|                   |                           | Paraffin dispenser                       | 28151-220                      | 0                 | 1   | Tissue processing for histopathology   |
|                   |                           | Cryostate                                | Leica-CM1100-1                 | 0                 | 1   | tissue processing under freezing for histopathology  |
|                   |                           | De-ionizer (Water purification system)   | NEW HUMAN up 900 (version 1.0) | 0                 | 1   | Removing ions from water and purification for analytical usage   |
|                   |                           | Hybridization Oven                       | UNI THERM 6/12                 | 0                 | 1   | Preservation of samples under the exact temperature for the right period to use them in Northern and Southern blots and molecular biology assays                           |
|                   |                           | ELISA                                    | SKU/Item Number: 8.600         | 0                 | 1   | qualitative or quantitative assays for analytics detection   |
|                   |                           | Trans-Blot SD                            | Trans-Blot SD Cell             | 2014              | 1   | Blotting of protein bands from gel to blot paper.  |
|                   | Slide dryer               | TEC2602                                  | 0                              | 1                 | Designed for heat and dry tissue slides; fully microprocessor controlled.   |  |
|                   | Gel dryer                 | MG-2131                                  | 0                              | 1                 | controls temperature from ambient +5°C to 90°C with a timer from 0 to 9999 minutes to heat gels from the base plate while connected to a vacuum pump to remove the moisture and dry gels homogeneously. |  |

# Veterinary

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|---------------------|--|--|---------------------|-------------------|--|--|
| Veterinary          |  | UV gel documentation system with printer | UVDI-254/312        | 0                 | 1  | Detection of DNA bands in the gel by UV rays   |
|                     |  | Horizontal gel electrophoresis           | MSMINI              | 0                 | 1  | Cleaver Scientific provides a comprehensive range of multi sub-horizontal systems for all your nucleic acid gel electrophoresis needs. |
|                     | معمل الخلايا الجذعية                   | Laminar flow II                          |                     | 0                 | 1  | Tissue culture   |
|                     |  | Co2 incubator                            |                     | 0                 | 1  | Tissue culture   |
|                     |  | Flourescent microscope                   |                     | 0                 | 1  | Immunohistochemistry evaluation  |
|                     |  | Transjector                              |                     | 0                 | 1  | Gene injector  |
|                     |  | Microtome                                |                     | 0                 | 1  | Tissue processing for histopathology   |
|                     | قسم الميكروبيولوجيا والفطريات والمناعة | Biohazard safety cabinet class 2         | PURI CUBE           | 0                 | 1  | provides the highest level of protection for the environment, product and user   |
|                     |  | Horizontal Gel electrophoresis           | 2720 thermal cycler | 0                 | 1  | separating mixtures containing DNA and RNA molecules   |
|                     |  | Vertical autoclave                       | PURI STER           | 0                 | 1  | sterilization under working steam pressure upto 15 PSI   |
|                     |  | Incubator                                | 2002                | 0                 | 3  | grow and maintain microbiological cultures or cell cultures.   |
|                     |  | ThermoCycler                             | 2720 thermal cycler | 0                 | 1  | For Amplification of Nucleic Acids   |
|                     | قسم الادويه                            | Spectrophotometer                        | Pritest TOUCH       | 0                 | 1  | It is a stand alone system for routine chemistry, enzymes, hormones and drug levels.   |
|                     | قسم الصحة والامراض المشتركة            | Incubator                                | Memmert             | 0                 | 1  | grow and maintain microbiological cultures or cell cultures.   |
|                     |  | HOT AIR OVEN                             | YCO-010             | 0                 | 1  | use dry heat to sterilize.   |
|                     | قسم الفيروسات                          | Laminar flow                             | JSCB-1200SB         | 0                 | 1  | Biological safety cabinet class 2  |
|                     |  | Fluorescent microscope                   | DIAPLAN             | 0                 | 1  | See how to scan a 96-well plate in 3 fluorescence channels in less than 5 minutes  |
|                     | Gel electrophoresis                    | LKB                                      | 0                   | 1                 | In the separation of DNA fragments for DNA fingerprinting,in the molecular biology and biochemistry labs |  |
| قسم الكيمياء الحيوي | Gel electrophoresis                    | Consort, SCIE PLAS                       | 0                   | 1                 |  |  |
|                     | Thermal cycler                         | Sprint                                   | 0                   | 1                 |  |  |
|                     | UV transilluminator                    | SYNGENE                                  | 0                   | 1                 |  |  |
| معمل التغذية        | Visible Spectrophotometer              | 721G                                     | 0                   | 1                 |  |  |
|                     | multi-parameter photomoeter            | HI 83200                                 | 0                   | 1                 |  |  |

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| Veterinary | قسم الجراحه التخدير<br>والاشعه       | PORTABLE X-RAY UNIT                          | SY-31-100P  | 0                 | 1               | designed for use in confined spaces as well as in the field, making it ideal for modern veterinarians. In combination with a portable Amadeo P-AX generator you have a superb solution for mobile X-ray imaging, especially for horse doctors and mixed veterinary practices. |
|            |                                      | Digital ultrasonic diagnostic imaging system | DP-2200 VET | 0                 | 1               | It provides superb value and quality across the entire range of applications with enhanced support of PW imaging to meet the higher diagnostic requirements   |
|            | الباطنه والامراض المعديه<br>والاسماك | THERMAL CYCLER                               | PIKO24      | 0                 | 1               | used to amplify DNA and RNA samples by the polymerase chain reaction. The thermocycler raises and lowers the temperature of the samples in a holding block in discrete, pre-programmed steps, allowing for denaturation and reannealing of samples with various reagents      |
|            |                                      | Dry block heaters                            | DB-006      |                   |                 | used to uniformly and simultaneously heat or cool an entire block of test tubes or reaction vials.  |
|            |                                      | Autoclave                                    | MC-DP       | 0                 | 1               | carries out that exact function of sterilizing materials. It is a machine that uses pressure and steam to reach and maintain a temperature that is too high for any microorganisms or their spores to live.   |
|            |                                      | Incubator                                    | BD-23       | 0                 | 1               | designed for long-term and stable continuous operation. Ideal for gentle incubation of organisms, such as on agar plates, and also for conditioning of heat sensitive media.  |
|            |                                      | microspin12                                  | BIOSAN      | 0                 | 1               | used for extracting RNA/DNA samples, sedimentation of biological components, biochemical and chemical analysis of microsamples  |
|            |                                      | uv safety cabinet                            | BIOSAN      | 0                 | 1               | The primary purpose of a BSC is to serve as a means to protect the laboratory worker and the surrounding environment from pathogens. All exhaust air is HEPA-filtered as it exits the biosafety cabinet, removing harmful bacteria and viruses.                               |
|            | قسم الرقابه الصحيه على<br>الاغذيه    | Incubator                                    | JSGI-100T   | 0                 | 1               | device used to grow and maintain microbiological cultures or cell cultures. The incubator maintains optimal temperature, humidity and other conditions such as the CO (CO2) and oxygen content of the atmosphere inside.  |

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| Veterinary |                                     | Lactoscan mccw milk analyzer     | EN ISO 9001         | 2008              | 1               | calibrated for measuring buffalo, whey, skimmed milk (0.01% FAT), concentrated milk (up to 1160 kg/m <sup>3</sup> ), recovered  |
|            |                                     | Lactoscan sec                    | EN ISO 9001         | 2008              | 1               | is designed to be used only for analysis of milk in milk collecting centers, laboratories, etc. It is not manufactured for testing human milk or animal but with therapeutic or diagnostic usage  |
|            |                                     | Autoclave                        | JSGI-100T           | 0                 | 1               | used to sterilize surgical equipment, laboratory instruments, pharmaceutical items, and other materials. It can sterilize solids, liquids, hollows, and instruments of various shapes and sizes.  |
|            | قسم الأسماك                         | horizontal gel electrophoresis   | 2720 thermal cycler | 0                 | 1               | designed to run agarose or polyacrylamide gels submerged in running buffer. Samples are introduced to an electric field and will migrate to the anode or cathode depending on their intrinsic charge  |
|            |                                     | Thermal cycler                   | prime3              | 0                 | 1               |   |
|            |                                     | microscope                       | B-293               | 0                 | 1               | producing brilliant images for the examination of living cells, organisms and several other specimens in large flasks, combining brightfield, darkfield and phase contrast techniques for the most demanding users.   |
|            |                                     | cooling centrifuge               | Hermlez216          | 0                 | 1               | works on the concept of sedimentation principle by holding up the sample tubes with a capacity of 2ml, 10ml and 50ml in rotation around a fixed axis. ... It additionally provides the cooling mechanism to maintain the uniform temperature throughout the operation of the sample                                 |
| Primary    |                                     | Biohazard safety cabinet class 2 | PURI CUBE           |                   |                 | protects the user and lab environment from the biohazard factor and prevents cross contamination of various samples used in experiments. 70% recirculated air is filtered with the HEPA filter, ensuring product safety is assured.   |
|            |                                     | ph meter                         | yk-2001ph           | 0                 | 1               | pH 7 is considered neutral, with lower pH values being acidic and higher values being alkaline or caustic. pH is the most common of all analytical measurements in industrial processing and since it is a direct measure of acid content [H <sup>+</sup> ], it clearly plays an important role in food processing. |
|            | التوليد والتناسل والتلقيح الاصطناعي | Spectrophotometer                | 1510                | 0                 | 1               | method to measure how much a chemical substance absorbs light by measuring the intensity of light as a beam of light passes through sample solution   |



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| Vete      |                        | color doppler ultrasonography | 8100            | 0                 | 1               | It uses ultrasonic sound waves in the frequency range of 1.5–15 megahertz (MHz) to create images of body structures based on the pattern of echoes reflected from the tissues and organs being imaged.   |
|           |                        | zoom stereo microscope        | KL 1500 Compact | 0                 | 1               | designed for low magnification observation of a sample, typically using light reflected from the surface of an object rather than transmitted through it.  |
|           |                        | Water Bath                    | WB-10D          | 0                 | 1               | a device used in the laboratories to incubate samples in water maintained at a constant temperature. Temperature may be controlled digitally or by a dial and once set, the water bath cycles on and off to ensure constancy of the temperature. |
| Education | معمل الكيمياء          | مذيبة المحاليل المغناطيسي     | sp200           | 2002              | 1               | اذابة المحاليل بالتأثير المغناطيسي   |
|           |                        | مجسات متنوعة                  | topic           | 2004              | 15              | قياس الرطوبة والحرارة والضوء والمغناطيسية والتعكر والقوة والحركة الحمضية والقلووية الضغط المطلق محلل الأطياف التدفق الحراري الرطوبة المغناطيسية التحلل   |
|           |                        | مسعر لتجربة جول الكهربائية    | topic           | 2005              | 3               | تعيين المكافئ الميكانيكي الحراري   |
|           |                        | مذيبة المحاليل المغناطيسي     | topic           | 2005              | 2               | حساب حجم المذيب المستخدم في تحضير المحلول المغناطيسي   |
|           | معمل تكنولوجيا التعليم | السيورة الذكية                | smart board     | 2005              | 1               | تستخدم في التعلم الإلكتروني التعاوني والتشاركي   |
|           | معمل الجغرافيا         | جهاز استريوسكوب جيب           | topcon          | 2004              | 1               | يستخدم في قراءة الصور الجوية المتداخلة   |
|           |                        | جهاز استريوسكوب ذات المرايا   | topcon          | 2005              | 1               | يستخدم لتجسيم الصور الجوية   |
|           |                        | ترمومتر متعدد الأغراض         | caution         | 2002              | 2               | لقياس درجات الحرارة العظمي والصغري   |
| Education |                        | جهاز تسجيل سطوع الشمس         | Campdell Stokes | 2003              | 1               | يستخدم في تسجيل مدة سطوع الشمس   |
|           |                        | ميزان القامة                  | topcon          | 2005              | 2               | يستخدم لقراءة القامة متر لتحديد ارتفاعات النقط عن سطح البحر  |
|           |                        | جهاز GPS                      | Japan           | 2014              | 1               | يستخدم لتحديد المواقع علي سطح الأرض ويمكن ان يحدد مكان أي شخص أو موقع عن طريق تقاطع خط الطول والعرض علي الشخص أو الموقع  |
|           |                        | جهاز تيودليت بصري             | topic           | 2002              | 1               | يستخدم في مسح الأرض وقياس الزوايا في الصغيره في الفضاء   |
|           |                        | ميزان هندسي بال               | topic           | 2002              | 2               | معالجة القامات لتعيين قراءة القامة   |
|           |                        | دوارة رياح                    | topic           | 2002              | 1               | قياس سرعة الرياح   |
|           |                        | دوارة رياح                    | topic           | 2002              | 1               | يستخدم في العرض  |
|           |                        | جهاز ريكورد                   | topic           | 2002              | 1               | التقاط صوتا واضحا منمسجلا الصوت  |
|           |                        | بوصلة                         | topic           | 2002              | 1               | تحديد الاتجاهات بالنسبة إلي قطبي الأرض   |
|           |                        | جهاز ابن ليفل                 | topic           | 2003              | 2               | قياس الارتفاع والانحدار  |
|           |                        | جهاز بلامنتر                  | topic           | 2003              | 1               | قياس التيار الكهربى  |
|           |                        | عجلة قياس المسافة علي الخريطة | topic           | 2003              | 1               | قياس المسافات علي الخرائط  |

| Faculty         | Lab                                      | Equipment                                    | Model                   | Manufacturer Year | Available Units            | Functions   |
|-----------------|--|--|-------------------------|-------------------|----------------------------|---|
| <b>Ec</b>       | معمل الفيزياء                            | ميكروسكوب ضوئي                               | Topcon                  | 2000              | 2                          | يستخدم الضوء المرئي ونظام العدسات لتكبير الصور من عينات صغيرة   |
|                 |  | مجسات التدفق والضغط و الحرارة (مجري الأنهار) | topic                   | 2006              | 7                          | قياس الضغط والحرارة والحركة الزائدة الإشعاع تحليل الأطياف قياس الحرارة من نوع K قياس التيار والفولت                       |
|                 |  | جهاز قياس الذبذبات                           | CRO                     | 2002              | 1                          | يستخدم في رسم جهد الإشارة بشكل مخطط ثنائي الأبعاد للجهد الكهربائي ( علي المحور العمودي ) مقابل الزمن ( علي المحور الأفقي) |
|                 |  | مجس الرطوبة                                  | topic                   | 2000              | 1                          | يستخدم في قياس محتوى الرطوبة في بيئة رطبه أو هوائية   |
|                 |  | مجس الضوء                                    | light sensor            | 2000              | 1                          | هو مكشاف حساس للضوء أو الإشعاع الكهرومغناطيسي يستخدم في المجسات الضوئية المختلفة  |
|                 |  | مذيب المحاليل المغناطيسي                     | topic                   | 2005              | 2                          | حساب حجم المذيب المستخدم في تحضير المحلول المغناطيسي  |
| <b>Medicine</b> | Children Hospital Main Lab               | Cobas e 411                                  | Roche                   | 0                 | 1                          | Chemiluminescence for viral and hormonal assays   |
|                 |  | Microscan Walk Away                          |                         | 0                 | 1                          | Antibiotic microbial sensitivity  |
|                 |  | Bactec 9050                                  |                         | 0                 | 1                          | Blood culture   |
|                 |  | Bact/Alert 3D                                |                         | 0                 | 1                          | Blood and TB culture  |
|                 |  | RT PCR                                       | Rotor - Gene Q          | 0                 | 1                          | Quantitative determination of any RNA or DNA organism   |
|                 |  | Ultracentrifuge                              | Rc-M120 GX              | 0                 | 1                          | TO centrifuge blood at high speed up to 120000 RPM  |
|                 | Clinical chemistry of clinical pathology | Hitachi                                      | 902                     | 2009              | 1                          | Automated chemistry analyzer  |
|                 |  | Elecsys 2010                                 | 2010                    | 2008              | 1                          | Automated analyzer for hormones & tumour markers  |
|                 |  | Cobas E411                                   | E411                    | 2015              | 1                          | Endocrine and tumour markers, serology automated analyzer   |
|                 |  | Cobas C311                                   | C311                    | 2015              | 1                          | Automated chemistry analyzer  |
|                 |  | Immulite automated analyzer                  | Immulite I              | 2000              | 1                          | Hormones, tumour markers, serology, drugs analyzer  |
|                 |  | Protein electrophoresis insturement          | Helena                  | 2005              | 1                          | Protein electrophoresis   |
|                 |  | Ultracentrifuge                              | Beckman                 | 2004              | 1                          | Lipid ultrcentrifugation  |
|                 |  | Thermacycler-Biometra                        | T Personal thermacycler | 2010              | 1                          | PCR for DNA, RNA amplification  |
|                 |  | Statefax ELISA reader                        | Statfax 303             | 2005              | 1                          | ELISA assay for hormones, tumour markers, serology  |
|                 |  | Teco ELISA READER                            | TECO                    | 2012              | 1                          |   |
|                 |  | PH meter                                     | PH 210-Bench            | 2012              | 1                          | PH measurement  |
|                 |  | AVL Electrolyte analyzer                     | AVL 9180                | 2010              | 1                          | ELECTROLYTE Na, K, Cl measurements  |
|                 | COBAS -221                               | 221  | 2014                    | 1                 | Blood gases & electrolytes |   |
|                 | Rapid Lab for blood gases                | RL 348                                       | 2013                    | 1                 | Blood gases & electrolytes |   |

| Faculty         | Lab  | Equipment                                     | Model           | Manufacturer Year | Available Units | Functions  |
|-----------------|--|---|-----------------|-------------------|-----------------|--|
| <b>Medicine</b> |  | Rapid lab 500                                 | RL 500          | 2014              | 1               | BLOOD GASES & ELECTROLYTES   |
|                 | Clinical Microbiology Lab                              | TECHNE Thermal cycler                         | Genius FGENO2TD | 0                 | 1               | Nucleic acid amplification   |
|                 |  | Concept plus Anaerobic work station           | plus            | 0                 | 1               | Creation of anaerobic condition for isolation of anaerobic organisms   |
|                 |  | Leica Flouresent microscope                   |                 | 0                 | 1               | Examination of flourescently stained smears  |
|                 |  | Co2 unitherm 50 incubator                     | Tc2123-2E       | 0                 | 1               | Creation of incubation condition with Co2  |
|                 |  | Gel electrophoresis system                    | SCIE plas       | 0                 | 1               | Electrophretic separation of DNA   |
|                 |  | UV Transilluminator                           | JENCONS         | 0                 | 1               |  |
|                 | Clinical Immunology unit-clinical pathology department | Floresent microscope                          |                 | 0                 | 2               | Dirct and indirect immunoflorecent techniques  |
|                 |  | Flowcytometer                                 | BD accuri       | 2012              | 1               | Cell identification in liquid phase  |
|                 |  | Thermal Cycler                                |                 | 0                 | 3               | amplify segments of DNA via the polymerase chain reaction (PCR) process  |
|                 |  | Automated ELISA and Immunoflorencence blotter | MAGO 4          | 0                 | 1               | For protein any protein assay in liquid phase  |
|                 |  | Real time PCR                                 |                 | 0                 | 1               | Amplification and detection of nucleic acid  |
|                 |  | Cooling Centrifuge (3 Rotors)                 |                 | 0                 | 1               | A device in which solid or liquid particles of different densities are separated by rotating them in a tube in a horizontal circle |
|                 |  | ELISA Reader                                  |                 | 0                 | 1               | used mainly in immunology to detect the presence of an antibody or an antigen in a sample  |
|                 |  | Nephloimeter                                  | Turbox          | 0                 | 1               | Measure protein by nephelometry  |
|                 |  | Elisa washer                                  |                 | 0                 | 1               | used to remove reagents from sample wells on microplates, and to prepare them for the next step in an assay or procedure           |
|                 |  | Laminar Airflow (class I)                     |                 | 0                 | 1               | provide the ideal particle-free, bacteria-free, clean-air environment needed for lab procedures                                    |
|                 |  | Electrophoresis SYSTEM                        |                 | 0                 | 2               | motion of dispersed particles relative to a fluid under the influence of a spatially uniform electric field.                       |
|                 |  | Immunocap                                     |                 | 0                 | 1               | Detection of specific Ig E for allergy   |

# Medicine

| Faculty | Lab                     | Equipment                                     | Model                           | Manufacturer Year | Available Units | Functions  |
|---------|-------------------------|---|---------------------------------|-------------------|-----------------|--|
|         |                         | UV Sterilization Cabinet                      |                                 | 0                 | 2               | Sterilization of utensils -Make sterile area for DNA & RNA preparation   |
|         |                         | Liquid nitrogen vessel                        |                                 | 0                 | 1               | cryopreservation of blood, reproductive cells (sperm and egg), stem cells,and other biological samples   |
|         |                         | Centrifuge                                    |                                 | 0                 | 3               | A device in which solid or liquid particles of different densities are separated   |
|         |                         | Vortex Mixer                                  |                                 | 0                 | 1               | Provides smooth instant vortexing of even the largest sample sizes   |
|         |                         | Immuno electrophoresis system                 |                                 | 0                 | 1               | Immunochemistry techniques   |
|         |                         | light Trinocular Microscope                   |                                 | 0                 | 4               | see objects that are too small for the naked eye   |
|         |                         | Oven  |                                 | 0                 | 1               | Disinfection   |
|         |                         | Shaking water bath                            |                                 | 0                 | 1               | Water bath for pathological slides- temp. reach to 100c°.  |
|         |                         | Microwave                                     |                                 | 0                 | 1               | Gel preparation  |
|         |                         | Nucleic acid spectrophotometer                |                                 | 0                 | 1               | Measure DNA,RNA concentration check purity   |
|         |                         | Inverted microscope                           |                                 | 0                 | 1               | observing living cells or organisms at the bottom of large containers  |
|         |                         | Water bath                                    |                                 | 0                 | 1               |  |
|         |                         | Co2 Incubator                                 |                                 | 0                 | 1               | Used in incubation of cultured cells.  |
|         |                         | incubator                                     |                                 | 0                 | 1               |  |
|         |                         | Freezer -80                                   |                                 | 0                 | 2               |  |
|         | Clinical Toxicology Lab | High Performance Liquid Chromatography "HPLC" | HPLC 1260                       | 2011              | 1               | Quantitative and qualitative measurement of different drugs and toxin levels determination of amino acids determination of antibiotic residues- no maintenance contract exists the HPLC needs periodic maintenance       |
|         |                         | Autoanalyzer                                  | MGC-240-Analyzer                | 2011              | 1               | 1. Preliminary screening of drugs of abuse (DAT) e.g. morphine, tramadol, cannabis and alcohol. 2. Measuring levels of Therapeutic drugs e.g. Digoxin, theophylline, acetaminophen, salicylates and antiepileptic drugs. |
|         |                         | Refrigerator                                  | SECOP-NL11MF                    | 2011              | 1               | Keeping samples and chemichals   |
|         |                         | Deep Freeze                                   | SECOP-TLES5.7FT.3               | 2011              | 1               | Keeping samples and chemichals   |
|         |                         | Centrifuge                                    | Unican & Sigma 2-15-15D-Herolab | 2002              | 2               | Separation of content of samples   |
|         |                         | Centrifuge                                    | Unicen-15D-Herolab              | 0                 | 1               | Sample centrifugation  |
|         |                         | Incubator                                     | Shell-Lab-1500 E                | 0                 | 1               |  |
|         |                         | pH meter                                      | YK-2001PH                       | 0                 | 1               |  |

| Faculty         | Lab                                     | Equipment                  | Model                | Manufacturer Year | Available Units | Functions   |
|-----------------|---|----------------------------|----------------------|-------------------|-----------------|---|
| <b>Medicine</b> |   | Shaker                     | Thermolyne M65820-33 | 0                 | 1               |   |
|                 |   | Thermohygrometer           | N.HYT-15.1           | 0                 | 1               | Temperature and moisture measurement  |
|                 |   | Ultrasonic                 | SONOMATIC 60375      | 0                 | 1               |   |
|                 |   | Vacuum Pressure Pump       | AP-01P               | 2007              | 1               |   |
|                 |   | Vortex                     | Shelton VSM-3        | 0                 | 1               |   |
|                 |   | Water distillator system   | DESA-0041            | 0                 | 1               | Water distillation  |
|                 | Clinical Pharmacology Research lab.     | UV/Vis Spectrophotometer   | Jenway 6405          | 0                 | 1               |   |
|                 |   | ELISA Plate reader         | Metertech sigma 690  | 0                 | 1               |   |
|                 |   | Automatic titrator         | Titroline 96         | 0                 | 1               |   |
|                 |   | CO2 Incubator              | Revco Habitat        | 0                 | 1               |   |
|                 |   | Muti-label counter         | Hidex Triathler      | 0                 | 1               |   |
|                 |   | Muti-label counter         | Hidex Triathler      | 0                 | 1               |   |
|                 | Mansoura Gastro-entriology center lab   | Cobas Integra 400 plus     | 400 plus             | 2013              | 1               | Clinical and immunochemistry tests  |
|                 |   | architct                   | I 1000 sr            | 0                 | 1               | Hormones, virological markers ,tumor markers and drugs                                |
|                 |   | Trima accel                | 1T02307              | 0                 | 1               | Automatic apharesis   |
|                 |   | Applied biosystem step one |                      | 0                 | 1               | RT-PCR  |
|                 |   | Diamed cd-c                | cd-x haemostasis     | 0                 | 1               | Blodd coagulation profile   |
|                 |   | Grifolis DG spin           |                      | 2008              | 1               | Digital centrifuge for manual processing of blood group and blood compatibility cards |
|                 |   | Sorvall rc 12bp +          |                      | 2013              | 1               | Perform high throughout blood banking and bioprocessing application                   |
|                 |   | Cobas taqman 48            | 48                   | 0                 | 1               | RT-PCR  |
|                 | Histology and Cell Biology research lab | Cryostat                   | MEV                  | 0                 | 1               | Preparing and sectioning of frozen specimens for histological examination.            |
|                 |   | Paraffin dispenser         | 1120                 | 0                 | 1               | Embedding samples in paraffin to form paraffin blocks.                                |
|                 |   | Microtome                  |                      | 0                 | 2025            | Sectioning paraffin blocks to produce thin sections                                   |
|                 |   | Knife maker                | 7800                 | 0                 | 1               | Perparing knives for ultrathin sectioning.  |
|                 |   | Ultratome                  | 2208                 | 0                 | 1               | Preparing ultrathin sections for electron microscopic studies                         |
|                 |   | Imaging microscope         | Cx31                 | 0                 | 2               | Taking pictures of sections seen under the microscope                                 |

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| Faculty  | Lab   | Equipment                            | Model                   | Manufacturer Year               | Available Units | Functions   |   |
|----------|---|--------------------------------------|-------------------------|---------------------------------|-----------------|---|---|
| Medicine | Liver lab - Medical Biochemistry Department | DNA - RNA Extractor                  | L6                      | 0                               | 1               | Automatic extraction of DNA and RNA   |   |
|          |   | Real time PCR                        | 7500                    | 0                               | 1               |   |   |
|          |   | Thermal cycler (PCR)                 | Tc-312                  | 0                               | 1               |   |   |
|          |   | Gel documentation system             | Bio doc analyze digital | 0                               | 1               |   |   |
|          |   | UV Transilluminator                  | TUV-20                  | 0                               | 1               |   |   |
|          |   | Electrophoresis                      | S-Va RI-GEL             | 0                               | 3               |   |   |
|          |   | HPLC                                 | LC1110                  | 0                               | 1               |   |   |
|          |   | CASA                                 | WV- CP300/G             | 0                               | 1               |   |   |
|          |   | ELISA Reader                         | Human reader single 315 | 0                               | 1               |   |   |
|          |   | ELISA Reader                         | Magellan clinical v 4.5 | 0                               | 1               |   |   |
|          |   | Autoimmuno assay                     | 360                     | 0                               | 1               |   |   |
|          |   | Automatic chemistry analyzer         | 20 X Ti                 | 0                               | 1               |   |   |
|          |   | Spechol II Spectrophotometer         | 10015                   | 0                               | 1               |   |   |
|          |   | Emperor Spectrophotometer            | EMP 168                 | 0                               | 1               |   |   |
|          |   | Jenway Spectrophotometer             | Genova                  | 0                               | 1               |   |   |
|          |   | Jenway Spectrophotometer             | 6 400                   | 0                               | 1               |   |   |
|          |   | Jenway Spectrophotometer             | 6 105                   | 0                               | 1               |   |   |
|          |   | Medical Experimental Research Center | NanoDrop                | 2000                            | 0               | 1   | Measures DNA, RNA (A260) and Protein (A280) concentrations and sample purity (260/280 ratio)                  |
|          |   |                                      | Thermal Cycler          | GS 482                          | 0               | 1   | amplify segments of DNA via the polymerase chain reaction (PCR) process                                       |
|          |   |                                      | Spectrophotometer       | Slim +/-Jenway / Mindray BA-88A | 0               | 3   | measure the intensity as a function of the light source wavelength . Measure chemicals, enzymes, electrolytes |
|          |   | Dry bath Incubator                   | K3 series               | 0                               | 1               | used in a variety of applications, which include: restriction digestion, BUN, melting agar, coagulation studies, hybridisation, Hot Start PCR® reactions and DNA denaturation |   |

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| Faculty | Lab | Equipment                           | Model                  | Manufacturer Year | Available Units | Functions   |
|---------|-----|-------------------------------------|------------------------|-------------------|-----------------|---|
|         |     | Cooling Centrifuge (3 Rotors)       | k3                     | 0                 | 1               | A device in which solid or liquid particles of different densities are separated by rotating them in a tube in a horizontal circle  |
|         |     | ELIZA Reader                        | serial no.1271         | 0                 | 1               | used mainly in immunology to detect the presence of an antibody or an antigen in a sample   |
|         |     | ELIZA Shaker&Incubator              | 0                      | 0                 | 1               | used for any 96 well microplate-based assay requiring optimal incubation conditions up to 40° C.  |
|         |     | ELIZA Whasher                       | 0                      | 0                 | 1               | used to remove reagents from sample wells on microplates, and to prepare them for the next step in an assay or procedure  |
|         |     | Laminar Airflow (class I)           | nu-201-300E            | 2011              | 2               | provides a HEPA filtered clean work area for laboratory appliances, microscopes, pipetting, compounding sterile drug preparations or IV admixture, or any applications requiring a clean air environment.- Does not provide any protection to personnel or environment. |
|         |     | Electrophoresis SYSTEM              | 0                      | 0                 | 1               | Used in Electrophoresis technique by the motion of dispersed particles relative to a fluid under the influence of a spatially uniform electric field.   |
|         |     | Homogenizer                         | HS-30E                 | 0                 | 1               | Homogenization of various types of materials  |
|         |     | UV Sterilization Cabinet            | csl-uvcab              | 0                 | 1               | Make sterile area for DNA & RNA preparation   |
|         |     | Liquid nitrogen vessel              | Liquid nitrogen vessel | 0                 | 1               | cryopreservation of blood, reproductive cells (sperm and egg), stem cells,and other biological samples  |
|         |     | Centrifuge                          | k2015                  | 2011              | 1               | A device in which solid or liquid particles of different densities are separated  |
|         |     | Vortex Mixer                        | VM-300                 | 0                 | 1               | Provides smooth instant vortexing of even the largest sample sizes  |
|         |     | Rotary Microtome                    | CUT 4050               | 0                 | 1               | cutting 0.5-60 micron ability with retraction technique, counter, Autotrim, installing fixed & disposable blade holder.   |
|         |     | High Research Trinocular Microscope |                        | 0                 | 1               | see objects that are too small for the naked eye  |
|         |     | Paraffin wax dispenser              |                        | 0                 | 1               | Paraffin blocks freezing  |
|         |     | Laminar Airflow (class II)          | NU 425-600E            | 1997              | 1               | Primarily designed to protect against exposure to particulates and aerosols from biological agents.- Provides product, personnel and environmental protection.  |

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| Faculty         | Lab | Equipment   | Model                | Manufacturer Year | Available Units | Functions   |
|-----------------|-----|---|----------------------|-------------------|-----------------|---|
|                 |     | Inverted microscope –connected with two camera & laptop | 1X70-s8f2            | 0                 | 1               | observing living cells or organisms at the bottom of large containers- connected with camera  |
|                 |     | Light microscope  | Cx21fs2              | 0                 | 1               | used to see objects that are too small for the naked eye  |
|                 |     | Co2 Incubator   | c 150 E2             | 2016              | 2               | provide optimum, reproducible growth conditions for cell cultures   |
|                 |     | PH Meter  | HT211 Microprocessor | 0                 | 1               | measuring the pH (acidity or alkalinity) of a liquid-malfunction  |
|                 |     | Shaking water bath                                      | BS-11                | 0                 | 1               | maintain a very stable temperature with shaking   |
|                 |     | Filteration system                                      | Mini MAC             | 0                 | 1               | cells purification by labeling cells with magnetic beads  |
|                 |     | Tissue processor  |                      | 0                 | 1               | Processing of tissues   |
|                 |     | Water purification system                               | NHM1150706           | 0                 | 1               | Provides ultra purified water for chemical and biological researches with: •Auto calibration for water sensors •Auto regular recycling every hour •Standby function : Auto recycling lower than setting value. •Programmable by 2 steps for the filter exchanges to maintain water quality. |
|                 |     | Digital Balance   | serial no. 107782    | 0                 | 1               | Balance which shows the weight of a substance digitally and is used to weigh chemicals in labs weighs a substance to the level of almost 0.0001 gm accuracy.  |
|                 |     | Deep Freezer ( -80 )                                    | LDF-9010U            | 0                 | 1               | Used to preserve Nucleic acid samples like RNA and DNA of micro organism and blood product storage, and other applications in the field of research, development, production and quality control.   |
|                 |     | Deep Freezer ( -20 )                                    | MDF-U333             | 0                 | 1               | Used to preserve plasma, vaccines, micro organism and blood product storage, and other applications in the field of research, development, production and quality control.  |
| Oncology center |     | Therma cycler   | 310 (432742)         | 0                 | 1               | PCR   |
|                 |     | genetic analyser  |                      | 0                 | 1               | Fragment analysis and sequencing  |
|                 |     | Real time   | Step one             | 0                 | 1               | Rt PCR  |
|                 |     | Floarecent imiging microscope                           | Px61                 | 0                 | 1               | FISH and Karyotyping  |
|                 |     | centaur   | Advia                | 0                 | 1               | Hormons and tumer markers   |
|                 |     | Canto II flowcytometer                                  | BD FACS canto tm II  | 0                 | 1               | Cell identification by CD screen  |
|                 |     | Epics XL coulter flowcytometer                          | EPICS XL             | 0                 | 1               | Immunophenotyping techniqaes  |
|                 |     | Hellabioelectrophoresis                                 | DM-2A                | 0                 | 1               | Protein electrophoresis and immunofixation  |
|                 |     | Co2 incubator   | 056AL                | 0                 | 1               | Cell culture  |
|                 |     | Laminar airflow   | Bioactive 90 plus    | 0                 | 1               | In PCR and tissue culture prepration  |



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| Faculty  | Lab  | Equipment                          | Model         | Manufacturer Year | Available Units                            | Functions   |
|----------|--|------------------------------------|---------------|-------------------|--|---|
| Medicine |  | Colling centerfuge                 | 17 TR         | 0                 | 2  | Fluid centrifugation with cooling   |
|          | Gastro-entrolgy surgery centre Lab                     | Arhitect                           | 1100 SR       | 2012              | 1  | Tumor markers AND VIROLOGY  |
|          |  | Hitachi Cobas 311                  | C 311         | 2015              | 1  | Chemical analysis   |
|          |  | Sysmex                             | Xp 300        | 2013              | 1  | Hematology (CBC)  |
|          |  | real time PCR                      | Step one      | 2012              | 1  | for PCR analysis  |
|          | molecular biology lab medical biochemsitry departement | pH meter                           | C16           | 1980              | 1  | p.H measurement   |
|          |  | vertical electrophoresis           | SE 260-10A-75 | 2000              | 1  | separation of proteins and DNA  |
|          |  | automated enzyme immunoassay TOSOH | AIA-360       | 2014              | 1  | measurement of hormone levels   |
|          |  | PCR theraml cycler                 | 2720          | 2014              | 1  | Restriction fragment length polymorphism and study of gene expression           |
|          |  | PCR theraml cycler                 | FTc3102D      | 2010              | 1  | Restriction fragment length polymorphism and study of gene expression           |
|          |  | Tissue tearor                      | 485370        | 1985              | 1  | tissue homogenization   |
|          |  | water bath                         | 3193          | 1980              | 1  | incubate samples in water at a constant temperature over a long period of time. |
|          |  | U.V transilluminator               | TUV-20        | 1980              | 1  | visualization of DNA samples after separation by gel electrophoresis            |
|          |  | p.H meter                          | 440           | 1984              | 1  | p.H measurement   |
|          |  | PCR theraml cycler                 | PTC-150       | 1984              | 1  | study of gene expression- Not working   |
|          |  | U.V transilluminator               | lms-20E       | 1984              | 1  | visualization of DNA samples after separation by gel electrophoresis            |
|          |  | electrophoresis power supply       | consort-E865  | 1984              | 1  | power supply for electrophoresis system   |
|          |  | horizontal electrophoresis         | HE 33         | 1984              | 1  | separation of proteins and DNA samples  |
|          |  | vertical double gel elctrophoresis | 45-1010-i     | 2004              | 1  | separation of proteins and DNA samples  |
|          |  | cleaver LFD elctrophoresis         | VS10          | 2004              | 1  | separation of proteins and DNA samples  |
|          | gel dryer  | SD10                               | 2010          | 1                 | preparation of gel for electrophoresis     |   |
|          | sensitive balance                                      | EL-2005                            | 2005          | 1                 | preparation of gel for electrophoresis     |   |
|          | sensitive balance                                      | EL-2005                            | 2005          | 1                 | determine the weight of chemical compounds |   |

| Faculty            | Lab   | Equipment                        | Model                     | Manufacturer Year | Available Units                       | Functions  |
|--------------------|---|----------------------------------|---------------------------|-------------------|---------------------------------------|--|
| <b>Medicine</b>    | Medical Microbiology and Immunology Department Lab  | Programmable Thermal Controller  | PTC-100                   | 2007              | 1                                     | Polymerase Chain Reaction Thermal Cyler  |
|                    |   | Vertical Laminar Flow Hood       | MaXtream V12              | 2011              | 1                                     | Cell culture passage and viral isolation   |
|                    |   | UV transilluminator              | M-15E                     | 2003              | 1                                     | Visualization of PCR products after gel electrophoresis  |
|                    |   | Cooling Micro-centrifuge         | Zentrifugen               | 1998              | 1                                     | Centrifugation during DNA and RNA extraction steps.  |
|                    |   | Elisa Plate Analyzer             | ReadWell Touch            | 2011              | 1                                     | Elisa Plate Reader   |
|                    |   | Inverted Microscope              | Labovert                  | 1986              | 1                                     | Examination of cell culture and CPE of cultured viruses.   |
|                    |   | Dc power supply                  | PS3000                    | 1995              | 1                                     | DC Power supply for gel electrophoresis.   |
|                    |   | Immunoflourescence Microscope    | Standared 20              | 2005              | 1                                     | Examination of florescence stained films for virus examination and auto-antibody detection   |
|                    | Center of Excellence for Genome and Cancer Research | stem cell seprator               | MACS miltenyl biotec      | 0                 | 1                                     | seprate stem cells   |
|                    |   | Inverted microscope              | DM IL LED FLUO            | 0                 | 1                                     | examining cell culture   |
|                    | CO2 incubator                                       | NU-4750E                         | 0                         | 2                 | suitable environment for cell culture |  |
| <b>Agriculture</b> | Electron Microsopy Unit                             | Transmission electron microscope | JEM-2100                  | 0                 | 1                                     | Used to investigate the ultrastructure of biological cells as well as non-biological materials and nano particles                                |
|                    |   | Scanning electron microscope     | JSM-6510LV                | 0                 | 1                                     | Used to examine biological and material samples topography and composition   |
|                    |   | Zeta analyzer                    | Nano- ZS90                | 0                 | 1                                     | Determine the average size of particles in different solutions as well as determining zeta potential   |
|                    |   | Ultramicrotome                   | PT-XL powertome           | 0                 | 1                                     | For preparing ultrathin sections to be examined using TEM  |
|                    |   | Critical point dryer             | Autosamdri-815            | 0                 | 1                                     | For critical dehydration of biological samples without shrinkage to be examined using SEM  |
|                    |   | Sputter coating evaporator       | SPI-module-sputter coater | 0                 | 1                                     | For coating specimens with a conductive material as carbon or gold in order to be examined using SEM   |
|                    |   | Glass knife maker                | GKM                       | 0                 | 1                                     | For making glass knives to be used for the ultramicrotome  |
|                    | Food Safety and Microbial Physiology                | Real-time PCR                    | StepOne                   | 2012              | 1                                     | Detection of genetic sequences to characterize different cells, quantitative assessment of gene expression, and detection of different genotypes |

# Agriculture

| Faculty     | Lab                              | Equipment                                    | Model                           | Manufacturer Year | Available Units  | Functions   |
|-------------|----------------------------------|--|---------------------------------|-------------------|--|---|
| Agriculture |                                  | Multiple Temperatue Zones PCR Thermal Cycler | 9902                            | 2013              | 1  | DNA amplification and defining the optimal temperatures for the annealing step in PCR reactions                         |
|             |                                  | End Point PCR                                | Primus 25 Advanced              | 2007              | 1  | PCR reactions for DNA amplification   |
|             |                                  | Gel Documentation System                     | BioDocAnalyze                   | 2010              | 1  | Capture and analysis of electrophoresis gels of nucleic acids and proteins  |
|             |                                  | Fluorescence Microscope                      | BX43                            | 2012              | 1  | screening,picturing,and analyzing fluorecence cells and tissues   |
|             |                                  | Light Microscope                             | B3                              | 2007              | 1  | Microscopic examinations of biological samples  |
|             |                                  | Gel Electrophoresis for Nuclie Acids         | PS301 for the power supply unit | 2005              | 1  | Separation and detection of nucleic acids   |
|             |                                  | Spectrophotometer                            | 6305                            | 2000              | 1  | Assement of Light Absorption by Different Samples   |
|             |                                  | Dry Bath                                     | TCDB-01                         | 2010              | 1  | Dry Heating of Samples  |
|             |                                  | (-86) Degress Deep Freezer                   | ULUF125                         | 2014              | 1  | Preservation of Biological Samples and Microbial Strains  |
|             |                                  | PCR  | MULTIGENIC GRADIENT             | 0                 | 1  | amplify and simultaneously detect or quantify a targeted DNA molecule & quantitative measurements of gene transcription |
|             |                                  | Real time PCR                                | RG-6000                         | 0                 | 1  | quantitative measurements of gene transcription at real time  |
|             |                                  | Growth chamber                               | KK350TOP+                       | 0                 | 1  | يستخدم في تنمية النباتات وكذلك المزارع الميكروبية في ظروف متحكم فيها (حرارة ورطوبة وإضاءة)                              |
|             |                                  | ULTRA DEEPFREEZER (-85C)                     | K60PL                           | 0                 | 1  | Preservation of samples which need very low temperatures (-85c)   |
|             |                                  | (-20)C Deep Freezer                          | MUFF21 VLMS                     | 0                 | 1  | Preservation of samples which need low temperatures (-20C)  |
|             |                                  | REFRIGERATOR                                 | White Whale                     | 0                 | 1  | حفظ المزارع الميكروبية والعينات النباتية والبذور  |
|             | UV/Vis SPECTROPHOTOMETER         | T80  | 0                               | 1                 | يستخدم في التقدير اللوني للصبغات النباتية والمركبات ذات الاطياف  |   |
|             | AUTOCLAVE                        | SX-700                                       | 0                               | 1                 | Sterilization  |   |
|             | AUTOCLAVE                        | LDZX-40SC                                    | 0                               | 1                 | يستخدم في اعدام المزارع الملوثة أو بعد الانتهاء من أخذ اقياسات المطلوبة منها وكذلك العينات الغير صالحة للاستخدام |   |
|             | MICROPLATE READER (ELIZA Reader) | STATE FAX2100                                | 0                               | 1                 | Used in immune &virus assay in plants  |   |

| Faculty                             | Lab                                   | Equipment                            | Model             | Manufacturer Year | Available Units   | Functions  |
|-------------------------------------|---------------------------------------|--------------------------------------|-------------------|-------------------|---|--|
| <b>Agriculture</b>                  |                                       | MICROPLATE WASHER (ELIZA Washer)     | STATE FAX 2600    | 0                 | 1   | يستخدم في غسل الميكوبليت بعد استخدامها   |
|                                     |                                       | LAMINAR FLOW                         | AURA HZ 48        | 0                 | 2   | can maintain a working area devoid of contaminants   |
|                                     |                                       | INCUBATOR                            | BD-115            | 0                 | 1   | Grow and maintain microbiological cultures   |
|                                     |                                       | COOLING INCUBATOR                    | STS+              | 0                 | 1   | Grow and maintain microbiological cultures under cooling   |
|                                     |                                       | OVEN                                 | ED-115            | 0                 | 1   | Sterilization & DRYING samples   |
|                                     |                                       | pH/Mv&tempreature meter              | AD1030            | 0                 | 1   | PH/Mv&tempreature mesurment  |
|                                     |                                       | REFRIGRATED CENTRIFUGE               | 1-14K             | 0                 | 1   | Laboratory separations under cooling   |
|                                     |                                       | WATER DEIONIZATION SYSTEM            | NEW HUMAN POWER 1 | 0                 | 1   | Deionization of water  |
|                                     |                                       | WATER DISTILLATION SYSTEM            | DESA 0040         | 0                 | 1   | DISTILLATION OF WATER  |
|                                     |                                       | STEREO-MICROSCOPE WITH CAMERA SYSTEM | OLYMPUS SZ61      | 0                 | 1   | فحص السطح الخارجي للعينات النباتية المصابة أو المزارع الفطرية للمساعدة في تشخيص المرض أو تعريف الفطريات مع أخذ صور لها |
|                                     |                                       | MICROSCOPE WITH CAMERA SYSTEM        | OLYMPUS CX41 RF   | 0                 | 1   | Samples assay with taking photo  |
|                                     |                                       | HPLC                                 | SHOMADZU          | 0                 | 1   | Used for separation of the components in a mixture   |
|                                     | Soil Fertility and Fertilizer Control | CNS analyzer                         | Flash 2000        | 2014              | 1   | Analysis of carbon, nitrogen and sulfur.   |
|                                     |                                       | Atomic absorption                    | PG Company        | 2008              | 1   | Analysis of Micronutrients and heavy metals.   |
|                                     |                                       | Flame Photometer                     | PFP 7 Flame       | 2010              | 1   | Determination of metal ions including sodium, potassium, lithium, and calcium.   |
|                                     | Mill                                  | MF 10 B                              | 2014              | 1                 | Sample Grinding   |  |
| Highway and Airport Engineering Lab | Universal Testing Machine             | UTM-25                               | 2014              | 1                 | Dynamic Testing of Pavement Materials   |  |
|                                     | Brookfield                            | DV III Ultra                         | 0                 | 1                 | Viscosity Mesaurment of Bitumen   |  |
| Sanitary Engineering Lab            | Atomic Absorption Measurments         | AA240FS                              | 0                 | 1                 | Measurment some of metals for example ( Mn, Ca, Mg, Hg, Ni, Cd, As, Al, Cu, B, Cr, Bi, Sn, Sb, Te...) |  |

| Faculty     | Lab                                | Equipment                                      | Model  | Manufacturer Year | Available Units | Functions  |
|-------------|------------------------------------|--|--|-------------------|-----------------|--|
| Engineering |                                    | Total Organic Carbon&Total Nitrogen Analyzer   | HT1300   | 0                 | 1               | HT1300 Measurment of carbon and nitrogen for liquids and solids                  |
|             |                                    | Ionic Chromatography System (ICS)              | ICS-1000FS                                     | 0                 | 1               | Measurment (Bromide, Fluoride, Chloride, Nitrate, Phosphate, Sulfate, Carbonate) |
|             |                                    | HPLC   |  | 0                 | 1               | Biological Analysis  |
|             | Soil Mechanics and Foundation      | Static and Cyclic Triaxial Testing System(APC) | Wille APC System                               | 2013              | 1               | Soil and Rock testing  |
|             |                                    | Automatic Consolidimeter                       | HM-2470A.3F                                    | 2010              | 1               | Consolidation Test   |
|             |                                    | Geotechnical Centrifuge                        | Geotechnical Modeling Centrifuges – C67 Series | 2004              | 1               | Geotechnical Centrfuge testing   |
|             | Mansoura U. Nanotech Center        | Atomic Force Microscope AFM                    | Flex AFM C3000                                 | 0                 | 1               | Characterization tools   |
|             |                                    | Reflection Microscope                          | 3B Scientific Magnification 1600X              | 0                 | 1               | Characterization tools   |
|             |                                    | Probe Station                                  | CM210  | 0                 | 1               | Characterization tools   |
|             |                                    | Precisiion LCR meter                           | E4980A   | 0                 | 1               | Characterization tools   |
|             |                                    | UV - Visible spectrometer                      |  | 0                 | 1               | Characterization tools   |
|             |                                    | ميكروسكوب عاكس                                 | 3B Scientific Magnification 1600X              | 2019              | 1               |  |
|             |                                    | Probe Station                                  | CM210  | 2019              | 1               |  |
|             |                                    | Storage oscilloscope                           |  | 2019              | 1               |  |
|             |                                    | Tubular Fumace                                 |  | 2019              | 1               |  |
|             |                                    | Rotary Evaporatot                              |  | 2019              | 1               |  |
|             |                                    | Water Purifier                                 | Barnstead Smart2Pure 50129688                  | 2019              | 1               |  |
|             |                                    | Fume hood(Materials lab)                       |  | 2019              | 1               |  |
|             |                                    | Sonicator                                      |  | 2019              | 1               |  |
|             |                                    | Spin Coater                                    |  | 2019              | 1               |  |
|             | Fume hood(Devices lab)             |  | 2019   | 1                 |                 |  |
|             | Vacuum oven                        |  | 2019   | 1                 |                 |  |
|             | Vacuume Pump                       |  | 2019   | 1                 |                 |  |
|             | معمل الاختبارات الميكانيكية للمواد | جهاز الصدم                                     |  | 2019              | 1               |  |

| Faculty     | Lab                                    | Equipment  | Model | Manufacturer Year | Available Units | Functions |
|-------------|--|--|-------|-------------------|-----------------|-----------|
| Engineering |  | جهاز قياس التآكل والاحتكاك                                 |       | 2019              | 1               |           |
|             | معمل القياسات الدقيقة                  | جهاز قياس خشونة السطح                                      |       | 2019              | 1               |           |
|             |  | جهاز قياس الاستدارة للاسطح                                 |       | 2019              | 1               |           |
|             | معمل التشغيل الغير تقليدى              | ماكينة القطع بالسلك عن طريق التفريغ الكهربى                |       | 2019              | 1               |           |
|             | معمل الالات المبرمجة                   | فريزه افقية ذات ثلاث محاور cnc                             |       | 2019              | 1               |           |
|             | معمل الرى والهيدروليكا                 | حوض توليد الامواج  |       | 2019              | 1               |           |
|             |  | قناه معمليه من الصاج المجلفن                               |       | 2019              | 1               |           |
|             |  | جهاز قياس سرعة السريان                                     |       | 2019              | 1               |           |
|             |  | pressure transduces  |       | 2019              | 1               |           |
|             |  | جهاز قياس سرعة المياه فى ثلاثة اتجاهات                     |       | 2008              | 1               |           |
|             |  | قناه معمليه ( حوض أمواج )                                  |       | 2019              | 1               |           |
|             |  | جهاز قياس الامواج وحساب الضغوط على الارصفة البحريه         |       | 2016              | 1               |           |
|             |  | قناه مكتشفه مصنوعه من الخشب السويد ومبطنه من الصاج المجلفن |       | 2008              | 1               |           |
|             | معمل الشبكات                           | cisco switch   |       | 2019              | 1               |           |
|             |  | pall server  |       | 2019              | 1               |           |
|             |  | حاسب الى dell exsou  |       | 2019              | 1               |           |
|             |  | smart board  |       | 2019              | 1               |           |
|             |  | 3 com basecine switch 2024                                 |       | 2019              | 1               |           |
|             |  | core biulder   |       | 2019              | 1               |           |
| Nursing     | Pediatric Nursing lab                  | Sim baby cpripharap  |       | 0                 | 1               |           |
|             |  | Infant indetring relaty                                    |       | 0                 | 1               |           |
|             |  | Keriptany care doll  |       | 0                 | 1               |           |
|             |  | Neonatal resast atars                                      |       | 0                 | 1               |           |
|             |  | Pediatric care sim   |       | 0                 | 1               |           |
| معمل النساء | novelle birthing delivery simulator    | Noelle s.575   |       | 0                 | 1               |           |
|             | مانيكان يوضح امكانيه الولادات كهربائيا | Noelle s.560   |       | 0                 | 1               |           |
|             | Pregnancy simulator                    |  |       | 0                 | 1               |           |

| Faculty | Lab                       | Equipment   | Model | Manufacturer Year | Available Units | Functions  |
|---------|---------------------------|---|-------|-------------------|-----------------|--|
| Nursing |                           | Episiotomy care   |       | 0                 | 3               |  |
|         |                           | Gynecological model study   |       | 0                 | 1               |  |
|         |                           | Femal catherterization  |       | 0                 | 2               |  |
|         |                           | نموذج طفل حديث الولادة بالمفاصل   |       | 0                 | 4               |  |
|         |                           | enema adminstration simulator   | 2018  | 0                 | 2               |  |
|         |                           | مانيكان العناية بلكوستومى   | 1070  | 0                 | 1               |  |
|         |                           | types of pelvic bone  | 2015  | 2016              | 2               | percussion and vibration for chest secretion                                   |
|         |                           | family palnning IUD   | 2015  | 2016              | 2               | intra uterine device   |
|         |                           | labour stage  | 2015  | 2016              | 2               | labour process   |
|         | الحالات الحرجة والطوارئ   | مانيكان ادخال القسطره   |       | 0                 | 2               | Laderal  |
|         |                           | مانيكان جروح واصابات متقدم  |       | 0                 | 1               | تقييم الجروح البسيطة والعميقة ونوع الاصابات البسيطة والمتعددة                  |
|         |                           | مانيكان نصفي لتدليك عضله القلب والصدر وبه جهاز لبيان الصواب والخطأ                                    |       | 0                 | 4               | يستخدم فى الانعاش القلبي الرئوى التنفس الصناعى                                 |
|         |                           | مانيكان نصفي للتدريب علي تدليك عضلة القلب وعمل التنفس الصناعي وبه جهاز للتدريب علي الصدمات الكهربائية |       | 0                 | 1               | يستخدم فى الانعاش القلبي الرئوى اعطاء الصدمات الكهربائية باستخدام جهاز الصدمات |
|         |                           | sim man classic   | 2012  | 0                 | 2               | يستخدم فى الانعاش القلبي الرئوى وموصل بجهاز لقياس النبض والضغط ونسبة الاكسجين  |
|         |                           | chocking charlie  | 2017  | 0                 | 2               | يستخدم فى إعطاء التنفس الصناعى   |
|         |                           | جهاز تنفس صناعي   |       | 0                 | 1               | يستخدم فى إعطاء التنفس الصناعى   |
|         |                           | شنطة للتدريب على الجروح   |       | 0                 | 2               | تستخدم فى علاج وتمريض الجروح   |
|         |                           | نموذج للتدريب علي استخدام جهاز الصدمات  |       | 0                 | 1               | كيفية اعطاء الصدمات الكهربائية وكيفية تقييم فاعليتها                           |
|         |                           | truma patient simulator for first aid   | 2000  | 2017              | 1               |  |
|         |                           | ultimate hurt   | 2000  | 2017              | 1               |  |
|         | airway management trainer | 2000  | 2017  | 1                 |                 |  |
|         | nursing anne              | 2000  | 2017  | 1                 |                 |  |
|         | معمل البالغين             | مانيكان للتدريب علي مهام مجري التنفس والعناية بالمعده   |       | 0                 | 1               |  |

| Faculty | Lab | Equipment                                    | Model | Manufacturer Year | Available Units | Functions  |
|---------|-----|--|-------|-------------------|-----------------|--|
| Nursing |     | زراع للتدريب علي الحقن الوريدي مزود بشتملاتة |       | 0                 | 5               |  |
|         |     | abnormal breast                              | 2015  | 0                 | 1               |  |
|         |     | شنطة للتدريب علي الحروق                      |       | 0                 | 8               |  |
|         |     | مانيكان الحقن العضلي                         | 444   | 2018              | 1               | <p>معمل الباطني الجراحي أولا تجهيزات المعمل □ المانيكان □ مانيكان كامل للتدريب علي □ stoma and NGT مانيكان نصفي لفحص الثدي □ مانيكان لاعضاء الجسم المتقطع 2 □ ( anatomy مانيكان نصفي خاص بقرح الفراش 2 □ مانيكان نصفي للتدريب ع الخياطه والغيار □ suture and dressing مانيكان نصفي ل □ tracheostomy مانيكان نصفي للبتن □ 2(amputation) مانيكان ل □ enema عدد تسعة ازرع للحقن الوريدي □ عدد أربع مانيكان نصفي ل □ I.M مانيكان نصفي ل مجري التنفس 8 □ شنت الحروق □ Procedure (medical surgical 1): 1- Blood sample 2- Cannula insertion 3- Venous puncture (I.V medication) 4- Blood transfusion 5- I.V infusion 6- Wound dressing 7- Stoma care 8- Chest tube care 9- Paracentesis □ -Procedure (medical surgical 2): 1- Burn care 2 -Hemodialysis 3- Neurological care 4- Orthopedic 5 Nasogastric tube care 6- Catheter insertion</p> |
| ing     |     | pain measurement scale                       | 444   | 2018              | 1               | <p>معمل الباطني الجراحي أولا تجهيزات المعمل □ المانيكان □ مانيكان كامل للتدريب علي □ stoma and NGT مانيكان نصفي لفحص الثدي □ مانيكان لاعضاء الجسم المتقطع 2 □ ( anatomy مانيكان نصفي خاص بقرح الفراش 2 □ مانيكان نصفي للتدريب ع الخياطه والغيار □ suture and dressing مانيكان نصفي ل □ tracheostomy مانيكان نصفي للبتن □ 2(amputation) مانيكان ل □ enema عدد تسعة ازرع للحقن الوريدي □ عدد أربع مانيكان نصفي ل □ I.M مانيكان نصفي ل مجري التنفس 8 □ شنت الحروق □ Procedure (medical surgical 1): 1- Blood sample 2- Cannula insertion 3- Venous puncture (I.V medication) 4- Blood transfusion 5- I.V infusion 6- Wound dressing 7- Stoma care 8- Chest tube care 9- Paracentesis □ -Procedure (medical surgical 2): 1- Burn care 2 -Hemodialysis 3- Neurological care 4- Orthopedic 5 Nasogastric tube care 6- Catheter insertion</p> |



| Faculty | Lab | Equipment                    | Model | Manufacturer Year | Available Units | Functions   |
|---------|-----|------------------------------|-------|-------------------|-----------------|---|
| Nur     |     | abnormalities of chest sound | 444   | 2018              | 1               | <p>معمل الباطني الجراحي أولا تجهيزات المعمل □ المانيكان □ مانيكان كامل للتدريب علي □ stoma and NGT مانيكان نصفي لفحص الثدي □ مانيكان لاعضاء الجسم المتقطع 2 □ ) ( anatomy مانيكان نصفي خاص بقرح الفراش 2 □ مانيكان نصفي للتدريب ع الخياطه والغيار □ suture and dressing مانيكان نصفي ل □ tracheostomy مانيكان نصفي للبتنر □ 2(amputation) مانيكان ل □ enema عدد تسعة ازرع للحقن الوريدي □ عدد أربع مانيكان نصفي ل □ I.M مانيكان نصفي ل مجري التنفس 8 □ شنت الحروق 1: 1- Blood □ Procedure (medical surgical 1): 1- Blood sample 2- Cannula insertion 3- Venous puncture (I.V medication) 4- Blood transfusion 5- I.V infusion 6- Wound dressing 7- Stoma care 8- Chest tube care 9- Paracentesis □ -Procedure (medical surgical 2): 1- Burn care 2 -Hemodialysis 3- Neurological care 4- Orthopedic 5 Nasogastric tube care 6- Catheter insertion</p> |
| سو      |     | nasogastric tube             | 444   | 2018              | 1               | <p>معمل الباطني الجراحي أولا تجهيزات المعمل □ المانيكان □ مانيكان كامل للتدريب علي □ stoma and NGT مانيكان نصفي لفحص الثدي □ مانيكان لاعضاء الجسم المتقطع 2 □ ) ( anatomy مانيكان نصفي خاص بقرح الفراش 2 □ مانيكان نصفي للتدريب ع الخياطه والغيار □ suture and dressing مانيكان نصفي ل □ tracheostomy مانيكان نصفي للبتنر □ 2(amputation) مانيكان ل □ enema عدد تسعة ازرع للحقن الوريدي □ عدد أربع مانيكان نصفي ل □ I.M مانيكان نصفي ل مجري التنفس 8 □ شنت الحروق 1: 1- Blood □ Procedure (medical surgical 1): 1- Blood sample 2- Cannula insertion 3- Venous puncture (I.V medication) 4- Blood transfusion 5- I.V infusion 6- Wound dressing 7- Stoma care 8- Chest tube care 9- Paracentesis □ -Procedure (medical surgical 2): 1- Burn care 2 -Hemodialysis 3- Neurological care 4- Orthopedic 5 Nasogastric tube care 6- Catheter insertion</p> |

| Faculty        | Lab                | Equipment   | Model      | Manufacturer Year | Available Units | Functions  |
|----------------|--------------------|---|------------|-------------------|-----------------|--|
| <b>Nursin</b>  |                    | chest tube insertion                                  | 444        | 2018              | 1               | <p>معمل الباطني الجراحي أولا تجهيزات المعمل □ المانيكان □ مانيكان كامل للتدريب علي □ stoma and NGT مانيكان نصفي لفحص الثدي □ مانيكان لاعضاء الجسم المتقطع 2 □ ( anatomy مانيكان نصفي خاص بقرح الفراش 2 □ مانيكان نصفي للتدريب ع الخياطه والغيار □ suture and dressing مانيكان نصفي ل □ tracheostomy مانيكان نصفي للبتن □ 2(amputation) مانيكان ل □ enema عدد تسعة ازرع للحقن الوريدي □ عدد أربع مانيكان نصفي ل □ I.M مانيكان نصفي ل مجري التنفس 8 □ شنت الحروق 1): 1- Blood sample 2- Cannula insertion 3- Venous puncture (I.V medication) 4- Blood transfusion 5- I.V infusion 6- Wound dressing 7- Stoma care 8- Chest tube care 9- Paracentesis □ -Procedure (medical surgical 2): 1- Burn care 2 -Hemodialysis 3- Neurological care 4- Orthopedic 5 Nasogastric tube care 6- Catheter insertion</p> |
|                |                    | breast examination                                    | 2000       | 2017              | 1               |  |
|                |                    | colostomy care permanent and temporary                | 2000       | 2017              | 1               |  |
|                |                    | types of wound care                                   | 2000       | 2017              | 1               |  |
|                |                    | types of pressure ulcer                               | 2000       | 2017              | 1               |  |
| <b>Nursing</b> |                    | gastrointestinal assessment                           | 2000       | 2017              | 1               |  |
|                |                    | physiotherapy simulator                               | 2015       | 2016              | 2               | percussion and vibration for chest secretion   |
|                | معمل الاساسيات     | مانيكان المهارات التمريضيه مع محاكاة العلامات الحيويه | Sima model | 0                 | 2               | يستخدم للتدريب علي قياس العلامات الحيويه   |
|                |                    | heart and lung sounds                                 | 2016       | 0                 | 4               | يستخدم للتدريب علي سماع صوت الرئه وقياس التنفس   |
|                |                    | intramuuscular injection buttock                      | 53538      | 0                 | 9               | يستخدم للتدريب علي كيفية إعطاء الحقن العضلي  |
|                |                    | نموذج للتدريب علي الخيطات الجراحيه                    |            | 0                 | 3               | يستخدم للتدريب علي العنايه بالخيطات الجراحيه   |
|                |                    | beds for patient positioning                          | 2000       | 2017              | 1               |  |
|                |                    | subcutenous injection                                 | 2000       | 2017              | 1               |  |
|                |                    | susie Simon nursing care                              | 2000       | 2017              | 1               |  |
|                | Biotechnology Unit | Bioflo 510 culture system (20 L Fermentor)            | Bioflo 510 | 2010              | 1               | Plant tissue culture for production of Valuable pharmaceutical compounds, flavoring compounds, antioxidants...etc  |

| Faculty        | Lab               | Equipment  | Model   | Manufacturer Year | Available Units | Functions   |
|----------------|-------------------|--|---|-------------------|-----------------|---|
| <b>Science</b> |                   | High speed Continuous centrifuge   | CPEA High speed centrifuge Z41                | 2010              | 1               | To separate materials   |
|                |                   | Bioflo 310 culture system (7.5 L benchtop Fermentor)   | Bioflo 310                                    | 2010              | 1               | Plant tissue culture for production of Valuable pharmaceutical compounds, flavoring compounds, antioxidants...etc   |
|                |                   | (- 80) 0C deep freezer   | Innova ultra low temperature freezer (- 80oC) | 2010              | 1               | ice-maker   |
|                |                   | Vertical Gel Electrophoresis (10 x 10 cm) with power supply.   | TV 100 Y standard TWIN plate mini gel         | 2010              | 1               |   |
|                |                   | Horizontal Gel Electrophoresis (10 x 10 cm)  | TV 100 Y standard TWIN plate mini gel         | 2010              | 1               |   |
|                |                   | PCR system   | Proflex™ Base                                 | 2010              | 1               |   |
|                |                   | Lyophilizer (medium size)  | Heto power dry LL3000                         | 2010              | 1               |   |
| <b>ience</b>   |                   | Atomic absorption spectrophotometer (for heavy metals analysis using flame and cold vapor facility). | Buck scientific Accusys 214                   | 2004              | 1               | Elements available for measurement using flame technique: Lead, Cadmium, Zinc, Nickel, Cobalt, Manganese, Cupper, Iron, Chromium, Elements available for measurement using hydride technique: Mercur and Arsenic. |
|                |                   | Lyophilizer (medium size)  | Heto power dry LL3000                         | 2010              | 1               |   |
|                | Botany Laboratory | Centrifuge   | K3 series                                     | 2010              | 1               |   |
|                |                   | Fermentor  | MS-F1   | 2008              | 1               | Fermentation  |
|                |                   | Gel documentation system   | MS-F1   | 2008              | 1               | Gel documentation   |
|                |                   | Flamephotometer  | PFP7  | 2008              | 1               | Determine the concentration of certain metal ions   |
|                |                   | Fluorimeter  | 6270  | 2009              | 1               | Measure parameters of fluorescence  |
|                |                   | UV spectrophotometer   | UV-2000                                       | 2000              | 1               | It is used in analytical chemistry for the quantitative determination of different analytes   |
|                | Geology Lab.      | Olympus stereo microscopes   | SZ-PT   | 2010              | 3               | Observe specimens   |
|                |                   | Leica Polarized Microscopy   | DME   | 2010              | 1               | Observe and photograph specimens  |
|                |                   | Fossils Microscopy   | SZ  | 2010              | 3               | Observe and photograph specimens  |

| Faculty | Lab                           | Equipment  | Model                                | Manufacturer Year | Available Units | Functions  |
|---------|-------------------------------|--|--------------------------------------|-------------------|-----------------|--|
| Sc      |                               | Geometrics seismographs  | SZ                                   | 2010              | 1               | Record the reflection and refraction seismic signals   |
|         |                               | Proton Precession Magnetometer   | Scintrex mp3                         | 2010              | 1               | Record the magnetic field of the underground rocks   |
|         |                               | Air Compressor   | 72055                                | 2010              | 1               | Vibration for vertebrate fossils   |
|         |                               | Shaker   | Shaker bottle 2                      | 2008              | 1               | Shake the samples  |
|         |                               | SAS 300  | Electric Equipment                   | 2011              | 1               | Record the resistance of the underground rocks   |
|         |                               | Regular Microscopy   | SAS 300                              | 2008              | 2               | Observe specimens  |
|         | NMR Lab                       | Nuclear Magnetic Resonance 500 MHz   | Joel 500 MHz                         | 2015              | 1               | Identification of organic compounds  |
|         | Physics Lab                   | Mechanical Testing machine   | (WDW50-300kN)                        | 2015              | 1               | Tensile testing - Creep test   |
|         |                               | Atomic absorption spectrophotometer (for heavy metals analysis using flame and cold vapor facility). | Buck scientific Accusys 214          | 2004              | 1               | Elements available for measurement using flame technique: Lead, Cadmium, Zinc, Nickel, Cobalt, Manganese, Copper, Iron, Chromium, Elements available for measurement using hydride technique: Mercur and Arsenic |
| ience   | Spectroscopy Lab. (Chemistry) | GC/MS thermo scientific Focus/DSQII  | Focus/DSQII Quadrupole GC/MS         | 2008              | 1               | Molecular mass determination   |
|         |                               | FTIR thermo scientific iS10 spectrometer   | Nicolet iS10 spectrometer            | 2007              | 1               | Functional groups analysis   |
|         |                               | Unicam UV/vis- (UV2) spectrometer  | Unicam UV2 spectrometer              | 1994              | 1               | Maximum wavelength determination   |
|         |                               | Magnetic Susceptibility balance  | MK 1 Magnetic Susceptibility Balance | 2004              | 1               | Measurement of magnetic moment   |
|         | Zoology Lab                   | Gel electrophoresis  | 93000.744                            | 2007              | 1               | يستخدم في فصل البروتينات بجميع أحجامها علي مستوي الخلايا أو بلازما الدم . كما يستخدم في فصل الأحماض الأمينية وجزئيات الأحماض النووية الناتجة من الجينوم أو من PCR  |
|         |                               | UV/vis spectrometer  | PG Instruments Limited U.K           | 2002              | 1               | يستخدم في قياس محتوى الإنزيمات والهرمونات وتقدير بعض المركبات الكيميائية معتمدة علي الطول الموجي لها.  |
|         |                               | Multigene PCR  | Multigene .Gradient                  | 2002              | 1               | يستخدم بشكل واسع لكل الأبحاث الخاصة بالحمض النووي DNA وكذلك تشخيص الأمراض التي تسببها البكتيريا والفيروسات ويستخدم في الإستنساخ وإنتاج خلايا أكثر.   |
|         |                               | Autoclave  | wAcs- 2045                           | 2002              | 1               | يستخدم في تعقيم الأدوات والكيماويات والمحاليل المستخدمة في علم الأحياء الدقيقة وزراعة الأنسجة.   |
|         |                               | High speed centrifuge  | IGL- 16C                             | 2007              | 1               | يستخدم لفصل العينات عند سرعات عالية تصل إلي ١٥.٠٠٠ لفة في الدقيقة.   |

| Faculty | Lab                          | Equipment                                     | Model                               | Manufacturer Year | Available Units | Functions   |
|---------|------------------------------|---|-------------------------------------|-------------------|-----------------|---|
| Sci     |                              | Optics Inverted Microscope                    | XD3-3 SN:307235 (Optika-XD3-3)      | 2007              | 1               | يستخدم لفحص ومراقبة الخلايا الحية في حالة الظروف الطبيعية وزراعة الأنسجة كما يستخدم في فحص شرائح الأنسجة العادية سواء المصبوغة بـ Immuno flurocent& Hematoxylein& Eosin   |
|         |                              | Elissa reader                                 | DU 990 BIV6                         | 2000              | 1               | يستخدم في قياس محتوى الأنزيمات والهرمونات وتقدير بعض المركبات معتمدة علي الطول الموجي لها.  |
|         | Natural Products Lab.        | Preparative HPLC                              | Agilent 1260 infinity II            | 2018              | 1               | Quantitative analysis and separation of natural extracts and mixtures of organic compounds  |
|         | Microanalysis Unit           | GBC Atomic Absorption Spect.- SENSAA Dual     | Sensaa Dual                         | 2012              | 1               | Concentration measurement of Periodic table elements  |
|         |                              | Thermal Analysis                              | SHIMADZU                            | 1996              | 1               | Differential Thermal Analysis Thermal Gravimetric Analysis Differential Scanning Colorimetry  |
|         |                              | Potential Stat /Galvano Stat (Gamry)PCI4-G750 | PCI4-G750                           | 2007              | 1               | Measurement of corrosion of metal   |
|         |                              | Spectrophotometer                             | Derkin Elmer 2380 Spectrophotometer | 2010              | 1               | The laboratory performs analyzes to identify the concentration of chemical elements in the periodic table using the atomic absorption device  |
| ience   |                              | UNICAM-UV/VIS.Spect                           | MATTSON 5000 FTIR Spect             | 2011              | 1               | The laboratory was carried out tests on the new compounds to confirm the chemical composition and the crisis for students of scientific research and faculty members inside and outside the university using modern spectroscopy devices. |
|         |                              | Herause C,H                                   | Herause C,H                         | 2012              | 1               | The laboratory carried out tests on the new compounds to verify their chemical composition  |
|         | Organic Synthesis and Dyeing | Dyeing Lab machine                            | Asian Test Equipments               | 2006              | 1               | Dyeing of Textiles  |
|         |                              | Sunset-CPS-Light fastness                     | Sunset-CPS                          | 2006              | 1               | Measurement of the light fastness for dyed fabrics  |
|         | Surfaces Lab.                | Surface area detector                         | SAS 300                             | 1998              | 1               | Determination of the surface areas  |
|         | Biochemistry Lab.            | PCR instrument                                | Labcyler 48230V                     | 2010              | 1               | PCR can be used to create copies of DNA for introduction into host organisms such as Escherichia coli in genetic engineering, and to amplify stretches of genetic material for Sanger sequencing – the Human Genome Project used PCR.     |

| Faculty          | Lab  | Equipment                        | Model                | Manufacturer Year | Available Units | Functions  |
|------------------|--|----------------------------------|----------------------|-------------------|-----------------|--|
| <b>Sci</b>       |  | Vertical Protein Electrophoresis | omniPAGE Mini        | 2013              | 1               | Cleaver Scientific Mini Vertical systems are predominantly used for protein electrophoresis. By combining both functionality and ease of use, the omniPAGE systems set the bench mark for simple, versatile vertical mini gel electrophoresis. Each omniPAGE electrophoresis system can accommodate up to 4 handcast gels (additional plates required) or 2 commercial precast gels to provide complete flexibility for individual research needs, while unique sliding clamp technology within the PAGE insert facilitates fast, intuitive leak-free casting. |
|                  |  | DNA Electrophoresis              | omniPAGE Mini        | 2013              | 1               | Achieve rapid isolation and purification of genomic and plasmid DNA. Buy Now! Extract high-quality DNA w/ excellent reproducibility for molecular biology experiments.   |
| <b>Dentistry</b> | Central research Lab<br>معمل الأبحاث المركزي | Precision cutter                 | PICO 155             | 0                 | 1               | Cutting  |
|                  |  | Lloyd instruments                | LS 500               | 0                 | 1               | Mechanical testing machine   |
|                  |  | Vacuum mixer                     | LS 500               | 0                 | 1               | Mixing investment, plaster and stone under vacuum  |
|                  |  | Incubator                        | Ehret TK 3023        | 0                 | 1               | Maintain temperature of the atmosphere inside  |
| <b>Dentistry</b> |  | Electronic Balance               | Uni Bloc ATY 224     | 0                 | 1               | Accurately measure small mass in the sub-milligram range   |
|                  |  | Surftest                         | SJ - 210             | 0                 | 1               | Measure surface roughness of materials   |
|                  |  | Vickers Microhardness Tester     | HV - 1000A Automatic | 0                 | 1               | Measure surface hardness of materials- Serial No. 268  |
|                  |  | Thermocycling                    | Thermocycling        | 0                 | 1               | Evaluate influence of thermal stresses on properties of materials  |