

## Scope of EGAC for Accreditation Fields:

| No | Field   | Major discipline |                         | Sub- discipline |   | Tests/ Properties measured   |
|----|---|------------------|-------------------------|-----------------|---|--|
|    |   | Code             | Scheme Title/Type       | Code            | Sample/ artifact.                               |  |
| 6  | Proficiency Testing Provider for testing laboratories | A                | Food Chemistry          | 1               | Plant produce                                   | Moisture, Components, Contaminates, Fat, Protein, Ash, Carbohydrate, Cholesterol, Sodium, Potassium, Iron, Magnesium, Calcium, Salt, Calories, Saturated fat, Fats, Pesticide residue, etc.                              |
|    |   |                  |                         | 2               | Animal produce                                  |  |
|    |   |                  |                         | 3               | Industrial produce                              |  |
|    |   | B                | Food Microbiology       | 1               | Plant produce                                   | Qualitative/ Quantitative: Salmonella Species, Listeria Species, E. coli, Coagulase Positive Staphylococcus, Coliform, Yeast and Mold, Aerobic Plate Count, Bacillus cereus, Campylobacter, ...etc.                      |
|    |   |                  |                         | 2               | Animal produce                                  |  |
|    |   |                  |                         | 3               | Industrial produce                              |  |
|    |   | C                | Environmental Chemistry | 1               | Liquids: including drinking & non-potable water | Metals, nutrients, minerals, organic & inorganic chemicals, microbiology, contaminants, pesticide residue, .....etc  |
|    |   |                  |                         | 2               | Solids  |  |
|    |   |                  |                         | 3               | Air   |  |
|    |   | D                | Chemical testing        | 1               | Metal alloys                                    | Composition analysis for the alloy types - ferrous, copper, aluminum, tin, lead, magnesium, zinc, nickel, precious metals, phosphorus, cadmium, chromium, manganese, silicon, arsenic                                    |
|    |   |                  |                         | 2               | Soils   | Total and water soluble fluoride, chloride, ammonia, oxidized nitrogen, extractable sulphur, copper, lead, arsenic, selenium, mercury, silver, molybdenum, chromium, nickel, zinc, iron, manganese, ...etc.              |
|    |   |                  |                         | 3               | Coal and fuels.                                 | Moisture, ash, volatile matter, gross calorific value, total sulfur, pyretic sulfur, chlorine, carbon, hydrogen, nitrogen, carbonate carbon, phosphorus, relative density, fluorine, mercury, selenium, arsenic, ...etc. |

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|    |       |  |                                       | 4               | Fuels.                              | Octane rating.  |                   |  |
|    |       | E  | Physical Testing                      | 1               | Soils                               | Density, Particle size, Porosity, Colligative properties, .....etc.   |                   |  |
|    |       |  |                                       |                 | Granules                            |   |                   |  |
|    |       |  |                                       |                 | Concrete                            |   |                   |  |
|    |       |  |                                       |                 | Paints                              |   |                   |  |
|    |       |  |                                       |                 | Adhesives                           |   |                   |  |
|    |       | F  | Mechanical Testing                    | 1               | Metals.                             | Tensile strength, strain rate, yield stress, proof strength, elongation, Brinell hardness, Rockwell hardness, Vickers hardness, Fatigue, Fracture toughness, Impact, Creep, Stress, rupture, Crack growth |                   |  |
|    |       |  |                                       |                 | 2                                   |   | Chains.           | Proof strength, braking load, extension  |
|    |       |  |                                       |                 | 3                                   |   | Textiles.         | Qualitative fiber analysis, breaking load, extension, mass per unit area, threads per unit length. |
|    |       | G  | Electrical Testing                    | 1               | Electrical appliances & accessories | General Requirements & electrical Performance   |                   |  |
|    |       |  |                                       |                 |                                     | Fire Test   |                   |  |
|    |       |  |                                       |                 |                                     | Insulation & Wire tests   |                   |  |
|    |       |  |                                       |                 |                                     | Temperature Measurements  |                   |  |
|    |       |  |                                       |                 |                                     | DC Component from AC equipment  |                   |  |
|    |       |  | Socket outlets current breaking tests |                 |                                     |   |                   |  |
|    |       | H  | Biological Testing                    | 1               | Drinking water.                     | Water: E.coli, faecal coliforms, total coliforms, faecal streptococci, plate count  |                   |  |
|    |       |  |                                       |                 | 2                                   |   | Non-potable water |  |
|    |       |  |                                       | 3               | Food                                | Pathogens in Food: Qualitative and quantitative – salmonella, listeria, bacillus cereus, staphylococci  |                   |  |
|    |       | Non-Pathogens in Food: Plate count, coliforms, E.coli, thermophiles, thermophilic spores |                                       |                 |                                     |   |                   |  |
|    |       | I  | Construction Material Testing         | 1               | Asphalt.,                           | Bearing ratio, classification, compaction and density, strength and consolidation   |                   |  |
|    |       |  |                                       |                 | 2                                   |   | Aggregates.       | Density, bitumen content, aggregate grading, stability and   |

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| 7  | Proficiency Testing Provider for calibration laboratories |                  |                                       | 3                                | Soils & cement.          | flow<br>Sieve analysis, particle shape and size, density, water absorption                                   |
|    |   |                  |                                       | 4                                | Concrete.                | Hardened concrete cylinders - dimensions, maximum sustained load unit, compression strength, type of failure |
|    |   |                  |                                       | 5                                | Marble.                  | Density, consistency, non-volatiles by mass, non-volatiles by volume   |
|    |   |                  |                                       | J                                | Pharmaceuticals          | 1  |
|    |   |                  |                                       | 2                                | Semi-solids.             | Chemical analysis.   |
|    |   |                  |                                       | 3                                | Liquids.                 | Microbiological analysis.  |
|    |   | K                | Physical and Dimensional Metrology    | 1                                | Length measuring devices | Length, diameter, distance, Laser Wavelength, Line Scales & Distances Measurements                           |
|    |   |                  |                                       | 2                                | Limit gauges             | Thread quantities  |
|    |   |                  |                                       | 3                                | angle standards          | Angle measurements   |
|    |   |                  |                                       | 4                                | Load cells Calibers      | Index Tables Clinometers   |
|    |   | 5                | Volumetric equipment                  | Volume measurements              |                          |  |
|    |   | 6                | Torque measuring devices              | Torque measurements              |                          |  |
|    |   | 7                | Flow measuring devices                | Flow measurements                |                          |  |
|    |   | 8                | Pressure and vacuum measuring devices | Pressure and vacuum measurements |                          |  |
|    |   | 9                | Hydrometers                           | Hydrometric measurements         |                          |  |
|    |   | L                | Thermo                                | 1                                | Temperatu                | Resistance Thermometry<br>Thermocouples  |

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|    |       |                  | <b>physical Properties</b>    |                 | re measuring equipment<br>- Thermometers<br>- Thermocouples   | Liquid-In-Glass Thermometers<br>Radiation Thermometers<br>Humidity  |
|    |       | <b>M</b>         | <b>Electrical Quantities</b>  | <b>1</b>        | Resistors<br>Dividers<br>Magnetic materials<br>Capacitors<br>Inductors<br>Transformers<br>Voltage standards<br>Attenuators<br>Precision transfer instruments<br>Calibrators | Voltage, Current, Voltage Ratio, AC/DC transfer (voltage and current), Power and Energy<br>Resistance Capacitance<br>Inductance Dissipation Factor, Oscilloscope Functions, Process calibrators<br>Logic State Analysis, High Voltage quantities<br>Modulation (AM, FM, PM), Impedance (reflection coefficient), Power, Attenuation, Adaptors, Antennas, Function Generation, Spectrum Analysis, S-parameters, Noise, Electric/Magnetic Field quantities. |
|    |       | <b>N</b>         | <b>Optics and Radiometry</b>  | <b>1</b>        | Optical components and systems<br>Radiant flux<br>Irradiance measuring instruments<br>Luminance<br>Spectrophotometry  | Optical System properties<br>Lasers<br>Quantities of Optical Radiation<br>Fiber Optics<br>Photometric quantities  |
|    |       | <b>O</b>         | <b>Acoustic and Vibration</b> | <b>1</b>        | Vibration measuring and calibration equipment   | Microphones<br>Sound Level<br>Artificial Mastoids<br>Noise Dosimeters   |
|    |       | <b>P</b>         | <b>Mechanical</b>             | <b>1</b>        | Pressure,   | Pressure  |

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|                           |           | Code             | Scheme Title/Type                                     | Code   | Sample/ artifact.                    |   |             |   |
|                           |           |                  | Quantities  | 2  | vacuum,                              | vacuum  |             |   |
|                           |           |                  |   | 3  | Force,                               | Force, Extensometers, strain gauges             |             |   |
|                           |           |                  |   | 4  | Odometers                            | distance  |             |   |
|                           |           |                  |   | 5  | Torque                               | Torque Wrenches                                 |             |   |
|                           |           |                  |   | 6  | Scales & balances                    | Weights   |             |   |
|                           |           |                  |   | 7  | Mass gauges.                         | Mass  |             |   |
|                           |           | Q                | Time & Frequency                                      | 1  | Tachometer<br>Optical/<br>Mechanical | Period<br>Time<br>Frequency                     |             |   |
|                           |           | R                | Fluid Quantities                                      | 1  | Flow                                 | Gas and Liquid Flow Rate                        |             |   |
|                           |           |                  |   |  | Standard gauges                      | Volume of Flowing Gases and Liquids             |             |   |
|                           |           |                  |   |  | Velocity                             | Velocity of Gases                               |             |   |
|                           |           |                  |   |  | standard gauges                      | Mass, Volume, & Density of Gases/Liquids        |             |   |
|                           |           | S                | Environmental Equipment                               | 1  | Particles counters                   | Enumeration                                     |             |   |
|                           |           |                  |   |  | Water and Air analyzers              | Water & Air contents                            |             |   |
|                           |           | 8                | Proficiency Testing Provider for medical laboratories | T  | Microbiology Program                 | 1   | Body fluids | Bacteriology<br>Hepatitis A,B,C<br>Mycology<br>HIV<br>Mycobacteriology<br>Virology<br>Intestinal Parasites<br>Parasitology<br>Molecular Microbiology<br>Miscellaneous tests |
|                           |           |                  |   |  |                                      | Simulated samples in Universal Transport Medium |             |   |
| Swabs in Transport Medium |           |                  |   |  |                                      |   |             |   |
| Freeze dried fluids       |           |                  |   |  |                                      |   |             |   |
| Dried blood spots         |           |                  |   |  |                                      |   |             |   |
| U                         | Chemistry | 1                | Body fluids   | Routine Chemistry, Bilirubin, Urine Chemistry, |                                      |   |             |   |

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|    |       |                  | <b>Program</b>                      |                 | Dried blood spots    | Blood Gases, Hemoglobin A1c<br>Therapeutic drugs, Drugs of Abuse<br>Routine Enzymes,<br>Cardiac Markers,<br>Lipids,<br>Endocrinology,<br>Immunology   |
|    |       | <b>V</b>         | <b>Hematology Program</b>           | <b>1</b>        | <b>Human Blood</b>   | Routine Hematology<br>Flow Cytometry- Hematological Disorders<br>Flow Cytometry-HIV<br>Flow Cytometry-Stem Cells<br>Reticulocytes<br>Body fluids<br>Routine Coagulation<br>D-dimer Assay<br>Factor Assay<br>Heparin Assay<br>Thrombophilia<br>Red Cell Disorders- Hemoglobin Fraction Quantitation<br>HBs Screen<br>Hematology Morphology<br>Hematology Bone Marrow |
|    |       | <b>W</b>         | <b>Pathology Program</b>            | <b>1</b>        | <b>Human Tissues</b> | Cytology  |
|    |       |                  |                                     |                 | <b>Body fluids</b>   | Routine Stains, Special Stains,<br>ImmunoHistoChemistry<br>Predictive Genetic tests   |
|    |       | <b>X</b>         | <b>Transfusion Medicine Program</b> | <b>1</b>        | <b>Human Blood</b>   | Tests for blood transmitted diseases<br>Hematopoietic Progenitor Cell Services<br>Immunoematology(( ABO group&Rh type), Antibody detection (transfusion),Antibody detection(Non transfusion), antibody identification,Compatibility testing)  |
|    |       | <b>Y</b>         | <b>Serology program</b>             | <b>1</b>        | <b>Body fluids</b>   | Serology for infectious diseases<br>Miscellaneous tests   |
|    |       | <b>Z</b>         | <b>Cytogenetics program</b>         | <b>1</b>        | <b>Blood/ Urine</b>  | Metabolite analysis   |

