جامعة عمان العربية
AMMAN ARAB UNIVERSITY

# College of Aviation Sciences.

## Department of Aircraft Maintenance.

## B.A Study Plan

## Academic Year 2022 -2023

Study Plan Credit hour (137)

Type of Program: **Blended/ Online/ F2F**

Major Type: ☐ Humanities x Scientific/Technical Science Medical

| Teaching Type | Percentage of study plan hours/number | Actual Ratio |
|---|---|---|
| Complete Online E-Learning | 20% - 10% Maximum | 19.7 |
| Blended learning (for humanities) | 60% - 40% Maximum | |
| Blended learning (for scientific majors) | 50% - 30% Maximum | 42.3 |
| Face-to-face learning (for humanities) | 20% Minimum | |
| Face-to-face learning (for scientific majors) | 30% Minimum | 38 |

Note: The learning types of the courses are disseminated at all academic levels in the program

## Department Vision

Excellence in the areas of teaching and learning in aircraft maintenance sciences and scientific research locally and regionally.

## Department Mission

Preparing distinguished staff in the field of aircraft maintenance sciences equipped with the knowledge, skills and ethics of the profession, to meet the needs of the local and regional community, in accordance with local and international quality criteria.

## Program Mission

Providing a distinguished academic program in the field of aircraft maintenance that is supported by knowledge, skills and professional ethics through specific cadres capable of keeping pace with local and regional organizations in accordance with the standards and enjoyment of e-learning.

## Educational Program Objectives

- Recognizing different aircraft systems.
- Understanding the various phenomena related to aviation.
- Learning the principles of maintaining aircraft engines and their various systems.
- Identifying and distinguishing faults and working to maintain them by applying the relevant regulations and instructions.
- Learning the most appropriate ways to carry out maintenance operations on the aircraft.

## Educational Program Outcomes

Students who graduate from the aircraft maintenance will demonstrate:

- Explaining the various basic and accelerating sciences and keeping pace with them in the field of aircraft maintenance.
- Clarify the different aircraft systems and engines.
- Applying various aircraft maintenance skills.
- Analyzing and classifying technical problems, dismantling and installing various systems on the aircraft.
- Evaluating problems related to aircraft maintenance and design.
- Preparing the appropriate reports needed by the regulatory bodies for aircraft maintenance.

## Plan Contents

The study plan for a bachelor's degree consists of a major in Aircraft Maintenance. Of (137) credit hours disseminated as follows:

| Sequence | Classification | Credit Hours | Percent % |
|---|---|---|---|
| 1st | University Requirements | 27 | 19.71 |
| 2nd | College Requirements | 24 | 17.52 |
| 3rd | Compulsory Program Requirements | 77 | 56.20 |
| 4th | Ancillary Courses | 9 | 6.57 |
| Total | | 137 | 100 |

## Coding System Approved by the University

| 1 | 1 | Semester | Year | 0 | 0 | 1 | 8 |
|---|---|---|---|---|---|---|---|
| | | 1 | 1 | | | | |
| Sequence | | Course Level | | Knowledge domain | | Major Code | College Code |

## Knowledge Domain

| Credited Hours of Study Plan | Knowledge Domain | Domain Code |
|---|---|---|
| **24** | General | 0 |
| **21** | Aviation Science | 1 |
| **10** | Electrical and Electronics Fundamentals | 2 |
| **20** | Aircraft Systems | 3 |
| **16** | Aircraft Engines | 4 |

| | | |
|---|---|---|
| **19** | Aircraft Maintenance | 5 |

**First: University Requirements:** ( 27 ) Credit Hours

A. **Compulsory Requirements:** ( 18 )Credit Hours

| Teaching type | | | Course Number | Course Title | Credited Hours | Pre-Requisite |
|---|---|---|---|---|---|---|
| Online E-Learning | Blended | Face-to-Face | | | | |
| X | | | 50511104 | Communication Skills -Arabic Language (1) | 3 | 50511108 |
| X | | | 50511105 | Communication Skills -English Language (1) | 3 | 50511109 |
| X | | | 505111206 | National Education | 3 | |
| X | | | 505111308 | Military Sciences | 3 | |
| X | | | 50511205 | Life skills and social responsibility | 3 | |
| X | | | 50511108 | Arabic Language Basics | 0 | |
| X | | | 50511109 | English Language Basics | 0 | |
| X | | | 50511100 | Computer Basics | 0 | |
| x | | | 50511305 | Leadership and Creativity | 3 | |
| | | | **Total** | | 18 | |

B. **Elective Requirements**: ( 9 )Credit Hours **from the following list:**

| Teaching type | | | Course Number | Course Title | Credited Hours | Pre-Requisite |
|---|---|---|---|---|---|---|
| Online E-Learning | Blended | Face-to-Face | | | | |
| X | | | 50511106 | Communication Skills -Arabic Language (2) | 3 | 50511104 |
| X | | | 50511107 | Communication Skills -English Language (2) | 3 | 50511105 |
| X | | | 50521203 | Principles of Psychology | 3 | - |
| X | | | 50521204 | Human Rights | 3 | - |
| X | | | 50531101 | Islamic Culture | 3 | - |
| X | | | 50531205 | Quds and Hashemite Custodianship | 3 | - |
| X | | | 50531101 | Environment and Community | 3 | - |

| | | | | | | |
|---|---|---|---|---|---|---|
| X | | | 50541206 | Health and Community | 3 | - |
| X | | | 50541103 | Computer Skills | 3 | 50511110 |
| X | | | 50541309 | Digital Culture | 3 | - |
| X | | | 50541308 | Foreign Language | 3 | - |
| | | | **Total** | | 9 | |

## Second: College Requirements: (24) Credit Hours

### A. Compulsory Requirements: (24) Credit Hours

| Teaching type | | | Course Number | Course Title | Credited Hours | Pre-Requisite |
|---|---|---|---|---|---|---|
| Online E-Learning | Blended | Face-to-Face | | | | |
| | X | | 80111207 | Aviation Law and Air Safety | 3 | |
| | X | | 80101206 | Advanced English Language (1) | 3 | |
| | X | | 80102107 | Advanced English Language (2) | 3 | 80101206 |
| | X | | 80112108 | Communication Skills and Technical Writing | 3 | 80101206 |
| | X | | 80112109 | Specialized English Language | 3 | 80102107 Co. |
| | x | | 80101102 | Aircrafts Types and Performance | 3 | |
| | x | | 80101101 | Theory of Flight | 3 | |
| | x | | 80102203 | Aviation Maintenance Management | 3 | |
| | | | **Total** | | 24 | |

## Third: Program Requirements (86) Credit Hours

### A. Compulsory Requirements: (77) Credit Hours

| Teaching type | | | Course Number | Course Title | Credited Hours* | Theoretical | Practical | Pre-Requisite | Co-Requisite |
|---|---|---|---|---|---|---|---|---|---|
| Online E- | Blended | Face-to- | | | | | | | |
| | | X | 80112201 | Materials and Hardware (1) | 2 | 2 | | 80121208 | |
| | | X | 80112202 | Materials and Hardware (1) workshop | 1 | | 3 | | 80112201 |
| | x | | 80111203 | Human Factors | 3 | 3 | | - | - |
| | | X | 80112203 | Materials and Hardware (2) | 2 | | | 80112201 | |
| | | X | 80112204 | Materials and Hardware (2) workshop | 1 | | | | 80112203 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | X | | 80111204 | Aviation Legislation | 2 | | | - | - |
| | X | | 80122101 | Electrical Fundamentals (1) | 2 | | | 80121208 | |
| | | X | 80122203 | Electrical Fundamentals (2) | 2 | | | 80122101 | |
| | | X | 80122207 | Electrical Fundamentals Lab | 1 | | | | 80122203 |
| | X | | 80122208 | Electronic Fundamentals | 2 | | | 80121208 | |
| | | X | 80122209 | Electronic Fundamentals Lab | 2 | | | | 80122208 |
| | x | | 80122206 | Digital Techniques & Electronic Instrument Systems | 2 | | | 80121208 | |
| | X | | 80132105 | Turbine Aeroplane Aerodynamic Structures & Systems (1) (Theory of Flight and Airframe Structure) | 3 | 3 | | 80102104 | |
| | | x | 80132106 | Turbine Aeroplane Aerodynamic Structures & Systems (1) (Theory of Flight and Airframe Structure) (Workshop) | 1 | | 3 | | 80132105 |
| | | X | 80133107 | Turbine Aeroplane Aerodynamic Structures & Systems (2) Instruments & Avionics | 3 | 3 | | | 80132105 |
| | | X | 80133108 | Turbine Aeroplane Aerodynamic Structures & Systems (2) Instruments & Avionics (Workshop) | 1 | | 3 | | 80133107 |
| | | X | 80133205 | Turbine Aeroplane Aerodynamic Structures & Systems (3) Electric Power | 3 | 3 | | | 80133107 |
| | | X | 80133206 | Turbine Aeroplane Aerodynamic Structures & Systems (3) Electric Power (Workshop) | 1 | | 3 | | 80133205 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | X | 80134107 | Turbine Aeroplane Aerodynamic Structures & Systems (4) (Air Conditioning, Fuel and Flight Control) | 3 | 3 | | | 80133205 |
| | | X | 80134108 | Turbine Aeroplane Aerodynamic Structures & Systems (4) (Air Conditioning, Fuel and Flight Control) (Workshop) | 1 | | 3 | | 80134107 |
| | | x | 80134209 | Turbine Aeroplane Aerodynamic Structures & Systems (5) (Hydraulic and Oxygen) | 3 | | 3 | | 80134107 |
| | | X | 80134210 | Turbine Aeroplane Aerodynamic Structures & Systems (5) (Hydraulic and Oxygen) (Workshop) | 1 | | 3 | | 80134209 |
| | | X | 80143101 | Gas Turbine Engine (1) | 3 | 3 | | | 80102104 |
| | | X | 80143102 | Gas Turbine Engine (1) (Workshop) | 1 | | 3 | | 80143101 |
| | | X | 80143203 | Gas Turbine Engine (2) | 3 | 3 | | | 80143101 |
| | | X | 80143204 | Gas Turbine Engine (2) (Workshop) | 1 | - | 3 | | 80143203 |
| | X | | 80143205 | Piston Engines | 3 | 3 | - | | 80121208 |
| | | X | 80143206 | Piston Engines (Workshop) | 1 | - | 3 | | 80143205 |
| | X | | 80144107 | Propeller | 3 | 3 | - | | - |
| | | X | 80144108 | Propeller (workshop) | 1 | - | 3 | | 80144107 |
| | X | | 80153101 | Maintenance Practices (1) | 3 | 3 | - | | 80122202 |
| | | X | 80153102 | Maintenance Practices (1) (Workshop) | 1 | - | 3 | | 80153101 |
| | X | | 80153203 | Maintenance Practices (2) | 3 | 3 | - | | 80153101 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | X | 80153204 | Maintenance Practices (2) (Workshop) | 1 | - | 3 | | 80153203 |
| | X | | 80154105 | Maintenance Practices (3) | 3 | 3 | - | | 80153203 |
| | | X | 80154106 | Maintenance Practices (3) (Workshop) | 1 | - | 3 | | 80154105 |
| | | X | 80154207 | On Job Training | 7 | - | 330 | | 330 ساعة عمل بالميدان |
| | | | **Total** | | 77 | | | | |

*** Credit Hours**

C. **Ancillary Courses** (9) Credit Hours:

| Teaching type | | | Course Number | Course Title | Credited Hours* | Theoretical | Practical | Pre-Requisite |
|---|---|---|---|---|---|---|---|---|
| Online E-Learning | Blended | Face-to-Face | | | | | | |
| | X | | 80121107 | Mathematics for Aviation Students | 2 | 2 | - | - |
| | X | | 80121208 | Physics for Aviation Students | 3 | 3 | - | - |
| | | X | 80102104 | Basic Aerodynamics | 3 | 3 | - | 80121208 |
| | | X | 80102205 | Basic Aerodynamics work shop | 1 | - | 3 | 80102104 |
| | | | **Total** | | 9 | | | |

*** Credit Hours**

# Guidance plan

## First Year

| First Semester | | | | | |
|---|---|---|---|---|---|
| Course No. | Course Title | Type of Learning | Credited Hours* | Prerequisite | Co-requisite |
| 80121107 | Mathematics for Aviation Students | B | 2 | - | - |
| 80101102 | Aircrafts Types and Performance | B | 3 | - | - |
| 80101101 | Theory of Flight | B | 3 | - | - |
| - | University requirement | U | 3 | - | - |
| - | University requirement | U | 3 | - | - |
| - | University requirement | U | 3 | - | - |
| **Total** | | | 17 | | |

| Second Semester | | | | | |
|---|---|---|---|---|---|
| Course No. | Course Title | Type of Learning | Credited Hours* | Prerequisite | Co-requisite |
| 80101206 | Advanced English Language (I) | B | 3 | - | - |
| 80111207 | Aviation Law and Air Safety | B | 3 | - | - |
| 80111203 | Human Factors | B | 3 | - | - |
| 80121208 | Physics for Aviation Students | B | 3 | - | - |
| 80111204 | Aviation Legislation | B | 3 | - | - |
| | University Requirement | U | 3 | - | - |
| **Total** | | | 18 | | |

* **Credit Hours**

## Second Year

| First Semester | | | | | |
|---|---|---|---|---|---|
| Course No. | Course Title | Type of Learning | Credited Hours* | Prerequisite | Co-requisite |
| 80102107 | Advanced English Language (2) | B | 3 | 80101206 | - |
| 80112108 | Communication Skills and Technical Writing | B | 3 | 80101206 | - |
| 80102104 | Basic Aerodynamics | F | 3 | 80121208 | - |
| 80122101 | Electrical Fundamentals (1) | B | 2 | 80121208 | - |
| 80112109 | Specialized English Language | B | 3 | - | 80102107 |
| | University Requirement | U | 3 | - | - |
| **Total** | | | 17 | | |

| Second Semester | | | | | |
|---|---|---|---|---|---|
| Course No. | Course Title | Type of Learning | Credited Hours* | Prerequisite | Co-requisite |
| 80102203 | Aviation Maintenance Management | B | 3 | - | - |
| 80122203 | Electrical Fundamentals (2) | F | 2 | 80122101 | - |
| 80122207 | Electrical Fundamentals work shop. | F | 1 | - | 80122203 |
| 80122208 | Electronic Fundamentals | B | 2 | 80121208 | - |
| 80122209 | Electronic Fundamentals work | F | 1 | - | 80122208 |
| | University Requirement | U | 3 | - | - |
| | University Requirement | U | 3 | - | - |
| 80112201 | Materials and Hardware (1) | F | 2 | 80121208 | - |
| 80112202 | Materials and Hardware (1) workshop | F | 1 | - | 80112201 |
| **Total** | | | 18 | | |

* **Credit Hours**

## Third Year

| First Semester | | | | | |
|---|---|---|---|---|---|
| Course No. | Course Title | Type of Learning | Credited Hours* | Prerequisite | Co-requisite |
| 80122206 | Digital Techniques & Electronic Instrument Systems | B | 2 | 80121208 | - |
| 80132105 | Turbine Aeroplane Aerodynamic Structures & Systems (1) (Theory of Flight and Airframe Structure) | B | 3 | 80102104 | - |
| 80132106 | Turbine Aeroplane Aerodynamic Structures & Systems (1) (Theory of Flight and Airframe Structure) (Workshop) | F | 1 | - | 80132105 |
| 80133107 | Turbine Aeroplane Aerodynamic Structures & Systems (2) Instruments & Avionics | F | 3 | - | 80132105 |
| 80133108 | Turbine Aeroplane Aerodynamic Structures & Systems (2) Instruments & Avionics (Workshop) | F | 1 | - | 80133107 |
| 80133205 | Turbine Aeroplane Aerodynamic Structures & Systems (3) Electric Power | F | 3 | - | 80133107 |
| 80133206 | Turbine Aeroplane Aerodynamic Structures & Systems (3) Electric Power (Workshop) | F | 1 | - | 80133205 |
| 80112203 | Materials and Hardware (2) | F | 2 | | 80112201 |
| 80112204 | Materials and Hardware (2) workshop | F | 1 | - | 80112203 |
| 80102205 | Basic Aerodynamics workshop | F | 1 | 80102104 | - |
| **Total** | | | 18 | | |

## Second Semester

| Course No. | Course Title | Type of Learning | Credited Hours* | Prerequisite | Co-requisite |
|---|---|---|---|---|---|
| 80134107 | Turbine Aeroplane Aerodynamic Structures & Systems (4) (Air Conditioning, Fuel and Flight Control) | F | 3 | - | 80133205 |
| 80134108 | Turbine Aeroplane Aerodynamic Structures & Systems (4) (Air Conditioning, Fuel and Flight Control) (Workshop) | F | 1 | - | 80134107 |
| 80134209 | Turbine Aeroplane Aerodynamic Structures & Systems (5) (Hydraulic and Oxygen) | F | 3 | - | 80134107 |
| 80134210 | Turbine Aeroplane Aerodynamic Structures & Systems (5) (Hydraulic andOxygen) (Workshop) | F | 1 | - | 80134209 |
| 80153101 | Maintenance Practices (1) | B | 3 | 80122202 | |
| 80153102 | Maintenance Practices (1) (Workshop) | F | 1 | - | 80153101 |
| 80153203 | Maintenance Practices (2) | B | 3 | - | 80153101 |
| 80153204 | Maintenance Practices (2) (Workshop) | F | 1 | - | 80153203 |
| | | | | | |
| **Total** | | | 16 | | |

*** Credit Hours**

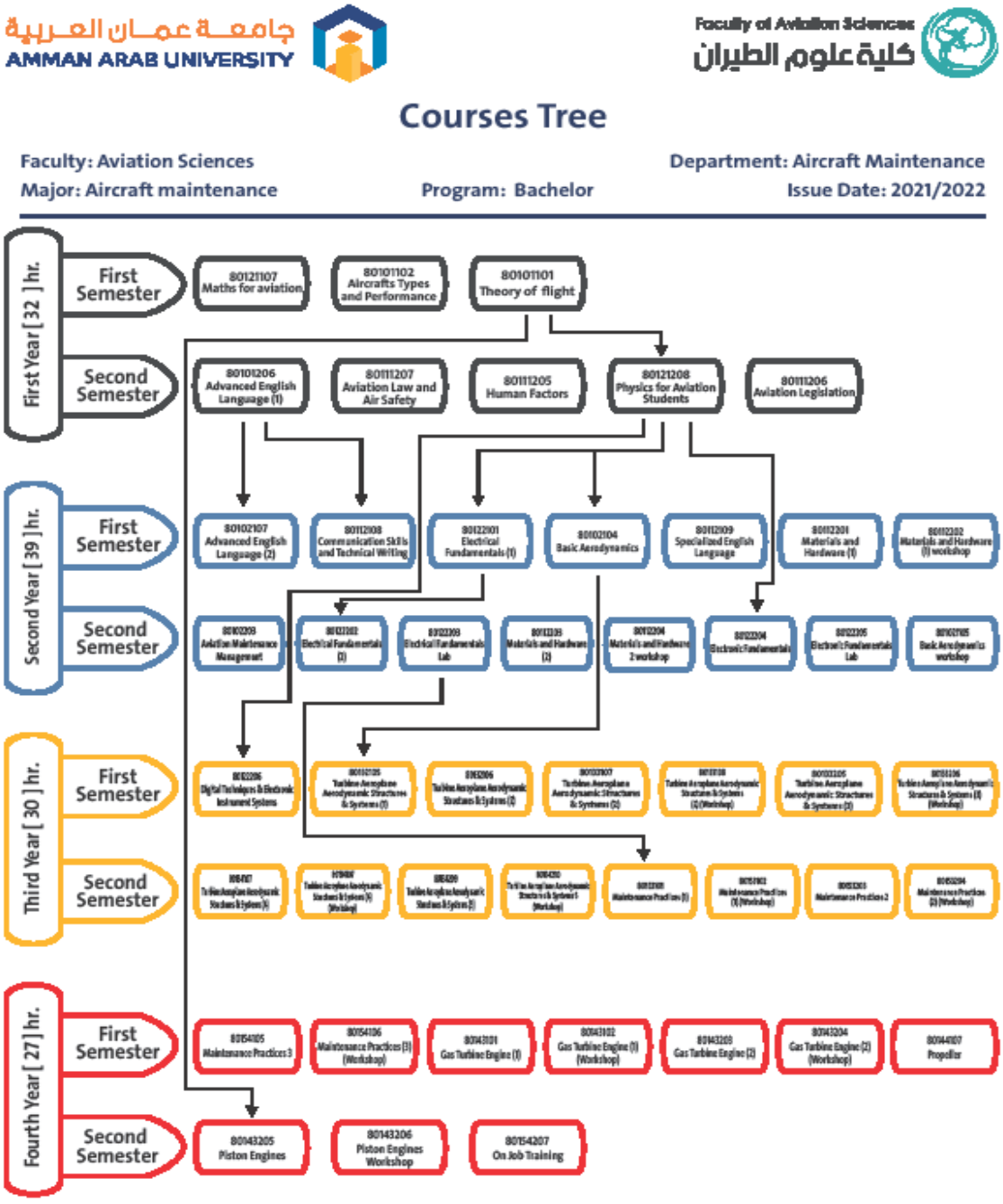
## Fourth Year

| First Semester | | | | | |
|---|---|---|---|---|---|
| Course No. | Course Title | Type of Learning | Credited Hours* | Prerequisite | Co-requisite |
| 80154105 | Maintenance Practices (3) | B | 3 | - | 80153203 |
| 80154106 | Maintenance Practices (3) (Workshop) | F | 1 | - | 80154105 |
| 80143101 | Gas Turbine Engine (1) | F | 3 | - | 80102104 |
| 80143102 | Gas Turbine Engine (1) (Workshop) | F | 1 | - | 80143101 |
| 80143203 | Gas Turbine Engine (2) | F | 3 | - | 80143101 |
| 80143204 | Gas Turbine Engine (2) (Workshop) | F | 1 | - | 80143203 |
| 80144107 | Propeller | B | 3 | - | 80143101 |
| 80144108 | Propeller (workshop) | F | 1 | - | 80144107 |
| **Total** | | | 16 | | |

| Second Semester | | | | | |
|---|---|---|---|---|---|
| Course No. | Course Title | Type of Learning | Credited Hours* | Prerequisite | Co-requisite |
| 80143205 | Piston Engines | B | 3 | 80121208 | - |
| 80143206 | Piston Engines (Workshop) | F | 1 | - | 80143205 |
| 80154207 | On Job Training | F | 7 | 330 hours life training | |
| | University requirement | D | 3 | - | - |
| | University requirement | D | 3 | - | - |
| **Total** | | | 17 | | |

* **Credit Hours**

## Courses Tree



## Course Description

**80111207 Aviation Law and Air Safety 3 Credit Hrs.**

International Agreements and Organizations, Airworthiness of Aircraft, Aircraft Nationality and Registration Marks, Flight Crew Licensing, Rules of the Air, Instrument Procedures-Departures, Aircraft Accident and Incident Investigation, Control of Aircraft, Air Traffic Services, Search and Rescue, Security.

**80101206 Advanced English Language (1) 3 Credit Hrs.**

This Course is designed to enhance students' English language skills in listening, speaking, reading, and writing, in addition to vocabulary and pronunciation. The Teacher's resource book provides teachers with classroom activates that supplement the material in the student's book. The workbook contains activities for extra practice in listening, grammar, writing, and vocabulary, an audio CD is included for use in the listening section.

**80102107 Advanced English Language (2) 3 Credit Hrs. Prerequisite: 80101206**

This Course is designed for intensive English language skills in listening, speaking, reading, and writing, in addition to vocabulary and pronunciation. The course employs traditional methods of language teaching and interactive multimedia instruction to develop practical academic skills. an audio CD is included for use in the listening section.

**80112108 Communication Skills and Technical Writing 3 Credit Hrs. Prerequisite: 80101206**

Technical Writing Documents & Elements, Report Components, Design & Visuals, Correspondence, Job Search and Application, Research & Documentation, Organization, Writing and revision.

**80112109 Specialized English Language 3 Credit Hrs. Co-requisite 80102107**

Design and innovation, Manufacturing techniques, Frameworks, Control systems, Engine and fuel systems, Safety and emergency, Air and gas, Electrical systems.

**80121107 Mathematics for Aviation Students 2 Credit Hrs.,**

Arithmetic, types of Fractions, Decimals, Percentages, Mean, Median, Mode and Range, Angles which includes definitions and conversions, types of angles, Triangles, Areas and Volume of Common Shapes, Surface Area and Volume of Common Solids, Common Conversions, Algebra, Transposition, Linear Equations, Indices and Powers,

Standard Form, Number Systems which includes binary, decimals, octal, and hexadecimals, Simultaneous Equations, Quadratic Equations, types of Logarithms, Geometry, Trigonometry, Coordinates and Graphs, Cartesian and Polar Coordinates.

**80121208 Physics for Aviation Students 2 Credit Hrs.**

The nature of matter, the components of atoms, state of matter, Statics which includes mass, force and weight, stress, stress, strain and Hook's law, nature and properties of solid, liquids and gas, as well pressure and forces and buoyancy, Kinetics linear motion, kind of motions, Dynamics include newton's laws, motion in a circle, friction, work energy, power and torque, Fluid Dynamics at the atmosphere, density, specific gravity, compressibility, viscosity and Bernoulli's principle, Thermodynamics, Optics (Light), Wave Motion and Sound.

**80101101 Theory of Flight 3 Credit Hrs.**

Why We Have to Do Maintenance, Development of Maintenance Programs, Aviation Industry Certification Requirements, Documentation for Maintenance, Technical Services, Technical Publications.

**80101102 Aircrafts Types and Performance 3 Credit Hrs.**

Single Engine Class B Aircraft –Take Off, Single Engine Class B-Climb, Single Engine Class B-En-Route & Descent, Single Engine Class B-Landing, Multi-Engine Class B-Take Off, Multi Engine Class B-EN-Route & Descent, Multi- Engine Class B –Landing, Class A Aircraft –Take Off, Class A: Additional Take Off Procedures, Class A: Take Off Climb, Class A: En Route, Class A: Landing.

**80102104 Basic Aerodynamics 3 Credit Hrs. Prerequisite: 80121208**

Physics of the Atmosphere, Airflow, Aerodynamics, Aerodynamic and Geometric Definitions, Drag, Lift, Stall, Lift Augmentation, Wing Planforms, Flight Controls, Flight Forces, Basic Maneuvers, Flight Stability and Dynamics.

**80102105 Basic Aerodynamics 1 Credit Hr., Co-Requisite: 80102104**

The students can be able to carry out the following practical applications: Using air flow bench apply the following Experiments, Drag Flow Apparatus, Flow Visualization Apparatus, Bernoulli's Equation Apparatus, Multi tube Manometer panel, Boundary layer Apparatus, locating primary controls and operating cabin controls, Airflow patterns in real fluids aerofoil, description and operation of Rudder, tap Elevator control system, Flaps, Aileron and tab, and Spoiler system operational check.

**80102203 Aircraft Maintenance Management 3 Credit Hrs.**

Why We Have to Do Maintenance, Development of Maintenance Programs, Aviation Industry Certification Requirements, Documentation for Maintenance, Technical Services, Technical Publications.

**80112201 Materials and Hardware (1) 2 Credit Hrs. Prerequisite: 80121208**

Materials Testing, Aircraft Materials–Ferrous, Aircraft Materials–Non-Ferrous, Plastics and Elastomers, Composites, Wood and Wood Structures, Fabric Covering, Corrosion, Fasteners, Screw threads, Bolts, studs and screws, Locking devices, Aircraft rivets.

**81012202 Materials and Hardware (1) workshop 1 Credit Hr. Co-Requisite: 80112201**

The student will be able to carry out the following practical applications: Assemble sheet plat using solid rivets, how to discriminate between different types of corrosion, Manual corrosion removal, Using different types of precision measuring tools such as vernier caliper.

**80112203 Materials and Hardware (2) 2 Credit Hrs. Prerequisite: 80112201**

Rigid, Semi-Rigid and Flexible Pipes and Unions, Springs, Types of Bearings, Transmissions which includes Belts, Pulleys, gears and Chains, Control Cables, Types of Electrical Cables and Connectors.

**80112204 Materials and Hardware (2) workshop 1 Credit Hr.,Co-Requisite: 80112203**

The student will be able to carry out the following practical applications: Cutting lines using pipe cutting tools, flaring rigid lines, discriminate between different types of bearings, testing control cables, Assemble and disassemble lines.

**80111203 Human Factors 3 Credit Hr.,**

This course contains the following topics General, The need to take human factors into account, what is "Human Factors"?, the shell model, Incidents attributable to human factors human error, 'Murphy's' law, Human Performance and Limitations, Vision, Hearing, Information processing, Claustrophobia and physical access and fear of heights, Social Psychology, Motivation and de-motivation, Peer pressure, 'Culture' issues, Personality Types, Team working, Management, supervision and leadership, Maintenance Resource Management, Physical Environment, Stress, Time pressure and Deadlines, Workload – Overload and Underload, Sleep, Fatigue and Shift Work, Alcohol, Medication and Drug Abuse, Diet and Nutrition, Physical Environment, Noise and fumes, Illumination, Climate and temperature, Motion and vibration, Working environment, Tasks, Physical work, Repetitive tasks, Visual inspection, Complex systems, Communication, Within and between teams, Work logging and recording, Keeping up to , currency,

Dissemination of information, Human models and theories, Types of error in maintenance tasks, Implications of errors (i.e. accidents),Avoiding and managing errors, Hazards in the Workplace, Recognizing and avoiding hazards, Dealing with emergencies, Risk Assessment

**80111204 Aviation Legislation 3 Credit Hrs.,**

CARC duties & responsibilities, aircraft regulated by CARC, International Civil Aviation Authority (ICAO), European Aviation Safety Agency (EASA), Role of the Member States, Certifying Staff—Maintenance, Categories of license, Certification Privileges, The Basic License - Knowledge Requirements, Type Ratings, Examination Standards and Requirements, Applying for the License. Approved Maintenance Organizations, Personnel, Certifying Staff and Support Staff, Equipment, Tools and Materials, Acceptance of Components, Maintenance Data, Production planning, Certification of Maintenance, Maintenance Records, Maintenance Procedures and Quality Systems, Administration of Part-145, Non-Commercial Air Transport Maintenance Organizations, Air Operators Certificates, Operators Responsibilities, Aeroplane Maintenance, Manuals, Logs and Records, Transport of Dangerous Goods by Air, Aircraft Certification, Design Organization Approval (DOA), Supplemental Type Certification, Certificate of Registration, Certificate of Airworthiness, Aircraft Radio Station License and Approval, Components, Non-Commercial Air Transport Maintenance Organizations, Continuous Airworthiness Maintenance Organization (CAMO), Certificate of Release to Service; Aircraft Airworthiness, Light Aircraft Maintenance, Safety Critical Maintenance Tasks, Inspections, Airworthiness Directives (ADs), Service Bulletins, Manufacturers Service Information, Modifications and Repairs.

**80122101 Electrical Fundamentals (1) 2 Credit Hr., Prerequisite80121208**

Electron Theory, Static Electricity and Conduction which include charged bodies, Coulomb's Law of Charges and Conduction of Electricity in Solids, Liquids and a Vacuum, Electrical Terminology which include Electrical Energy, Electrical Charges, Electric Current, Electrical Resistance, Conductance and Electrical Laws, Generation of Electricity which includes Voltage Produced by Friction, Voltage Produced by Pressure, Voltage Produced by Heat, Voltage Produced by Light and Voltage Produced by Chemical Action, DC Sources of Electricity, DC Circuits, Resistance/Resistor, Power, Capacitance/Capacitor.

**80122203 Electrical Fundamentals Lab. 1 Credit Hrs., Co-Requisite: 80122202**

The student will be able to carry out the following practical applications: Measuring DC voltage using multimeter, Measuring DC current using multimeter, measuring resistance using multimeter, connecting loads in parallel and series, Assemble and disassemble DC generators. Testing coils and capacitors

**80122203 Electrical Fundamentals (2) 2 Credit Hrs.,Prerequisite: 80122101**

This course contains the following topics Magnetism, Inductance/Inductor, DC Motor / Generator Theory which

include Principles of Operation, Basic D.C. Motor, D.C. Motor Construction, Armature Reaction, Types of D.C. Motors, Back-EMF, Types of Duty, Reversing Motor Direction, Motor Speed, Energy Losses in D.C. Motors, Inspection and Maintenance of D.C. Motors and Starter-Generator Systems, AC Theory, Resistive (R), Capacitive (C) and Inductive (L) Circuits, Transformers which include: Basic Operation of a Transformer, The Components of a Transformer, Core Characteristics, Transformer Windings, Schematic Symbols for Transformers, How a Transformer Works, Turns and Voltage Ratios, Effect of a Load, Mutual Flux, Turns and Current Ratios and Step-Up and Step-Down Transformers, Filters, Types of AC Generators, Types of AC Motors.

**80122208 Electronic Fundamentals 2 Credit Hrs., Prerequisite: 80121208**

Semiconductors, Solid-State Devices, Diodes, Transistors, Integrated Circuits, Printed Circuit Boards, Servomechanisms, Desynn and Magnesyn Systems which includes Basic Desynn System, Micro-Desynn Systems,

**80122207 Electrical Fundamentals (2) Lab.1 Credit Hr., Co-Requisite: 80122203**

The student will be able to carry out the following practical applications: Measuring AC voltage using multimeter, Measuring AC current using multimeter, Measuring the transformer output, measuring inductive and capacitive loads, Assemble and disassemble AC generators, Connecting filters.

Slab Desynn System, Typical Desynn Faults and Magnesyn System, Torque Synchros which includes Synchro Classification, Synchro Codes, Synchro Construction, Synchro Characteristics, Theory of Operation, Synchro Torque, Transmitter, Synchro Torque Receiver, Torque Synchro System, Torque Differential Synchro Systems, Synchro Faults - Symptoms and Causes and Multispeed Synchro Systems, Control Synchro Systems, Categories of Control Systems which include Open Loop and Closed Loop.

**80122206 Digital Techniques & Electronic Instrument Systems 2 Credit Hrs., Prerequisite: 80121208**

Electronic Instrument Systems, Numbering Systems, Data Conversion, Data Buses, Logic Circuits, Basic Computer Structure, Fibre Optics Description, Fibre Optic Concepts, Optical Fibres and Cables, Optical Splices, Connectors and Couplers, Fibre Optic Measurement Techniques, Optical Sources and Fibre Optic Transmitters, Optical Detectors and Receivers, Electronic Displays, Electrostatic Sensitive Devices, Software Management Control, Electromagnetic Environment, Typical Electronic/Digital Aircraft Systems.

**80132105 Turbine Aeroplane Aerodynamic Structures & Systems (1) (Theory of Flight and Airframe Structure) (3 Credit Hrs. , Prerequisite80102104**

Aeroplane Aerodynamics and Flight Controls, High Speed Flight, Airframe Structures, Fuselage, Wings, Stabilizers, Flight Control Surfaces, Nacelles/Pylons.

**80132106 Turbine Aeroplane Aerodynamic Structures & Systems (1) (Theory of Flight and Airframe .Co-Requisite: 80132105 Structure) (Workshop) 1 Credit Hr**

The students can be able to carry out the following practical applications: Airflow patterns in real fluid around aerofoil, description and operation of Rudder and tap, Elevator control system, Flaps, Aileron and tab, and passenger/ crew door, Spoiler system operational check, Painting aluminum sheet according to aircraft manual, Balancing of aileron surface, Inspect emergency ground escape hatch, Inspect wing exterior, Inspect wing tips, wing front spar, leading edge skin, rib and stiffeners

**80133107Turbine Aeroplane Aerodynamic Structures & Systems (2) (Instruments & Avionics) 3 Credit Hrs. Prerequisite: 80132105**

Instrument Systems, Aircraft Indicating Systems – General, Pressure Measuring Instruments, Temperature Measurement, Quantity Indication System, Stall Warning and Angle of Attack Systems, Pitot-Static Systems, Altimeters, Vertical Speed Indicator (VSI), Airspeed Indicator (ASI), Temperatures, Mach Speed, Air Data Computer, Gyroscopic Instruments, Magnetic Compasses, Autoflight, Communications, On Board Maintenance Systems, Central Maintenance System (CMS), Built In Test Equipment (BITE) Philosophy, Aircraft Condition Monitoring System (ACMS), Ground Support Equipment (GSE), Data Loading Systems, Electronic Library System (ELS), Airborne Printer, Structure Monitoring.

**80133108 Turbine Aeroplane Aerodynamic Structures & Systems (2) (Instruments & Avionics) (Workshop) (1 Credit Hr., Co-Requisite: 81033107**

The students can be able to carry out the following practical applications: Pitot static system leakage test, purging pitot and static lines, Removal and installation of pitot and static head, Testing of Mach and airspeed warning system, Instrument panel removal and installation, Stall warning transducer vane heaters operational check, and Removal and installation of flap travel monitor switch.

**80133205 Turbine Aeroplane Aerodynamic Structures & Systems (3) (Electric Power) (3 Credit Hrs., Prerequisite: : 80133107**

Electrical Power, Batteries, Direct Current (DC) Generation, Alternating Current (AC) Generation, Voltage Regulation, Constant Speed Drive Unit (CSDU) and Integrated Drive Generator (IDG), Brushless Generator, Variable Speed Constant Frequency (VSCF) Generators, Emergency Power Generation, Transformer Rectifiers, Inverters, Power Sources Summary, External/Ground Power, Electrical Power Distribution, Generator / Busbar Connection

and Disconnection, Circuit Protection, Electrical Distribution Systems, Reactive and Real Load Sharing, AC Load Shedding, Fault Protection, Built In Test Equipment (BITE), Flightdeck Controls and Indication, Lights.

**80133206 Turbine Aeroplane Aerodynamic Structures & Systems (3) (Electric Power) (Workshop) (1 Credit Hr., Co-Requisite: 80133205**

The students can be able to carry out the following practical applications: Removal and installation of battery, Removal and installation of feeder protection relays, Removal and installation of battery temperature sensor, Removal & installation No. 1 & No. 2 Inverters, Discharging and disassemble of battery, Checking battery temperature sensor resistance, Battery maintenance following an over temperature condition, and Operational check of AC power generation system lights and AC power generation system, Charging battery, Testing battery system, the flood light system, the thunder storm lights, the caution-warning and indicating light system, landing and taxi lights, ice checks lights, anti-collision, strobe and position lights, the cockpit dome light, cockpit utility lights, indirect lights, and emergency light, removal and installation of Caution and warning panel, strobe lights, and lower anti-collision light assembly, and Adjusting landing and taxi light.

**80134107 Turbine Aeroplane Aerodynamic Structures & Systems (4) (Air Conditioning, Fuel and Flight Control) (3 Credit Hrs., Prerequisite: 80133205**

Air supply, Air Conditioning, Pressurization, Safety and Warning Devices, Equipment and Furnishings, Emergency Equipment, Emergency Evacuation, Cockpit, Seat Belts and Shoulder Harnesses, Cabin, Galleys, Lavatories, Cargo Compartments, Passenger Service Units (PSU), Airstairs, Cabin Entertainment Systems, Requirements for Fire, Fire Detection Systems, Maintenance Practices, Smoke and Flame Detectors, Fire Zones, Fire-Extinguishing Systems, Fire Protection Systems, Engine Fire Extinguishing Systems, Flight Controls, Fuel Systems.

**80134108 Turbine Aeroplane Aerodynamic Structures & Systems (4) (Air Conditioning, Fuel and Flight Control) (Workshop) (1 Credit Hr., Co-Requisite: 80134107)**

The students can be able to carry out the following practical applications: Removal and installation of engine bleed air shutoff valve, emergency bleed air shutoff valve, cabin pressure regulator, water separator, refrigeration unit, crew seat, safety belt inertia reel, direction valve, control units, fire extinguishing system discharge indicator disks, Fire-extinguishing cartridges HTL industries INC, Fire-extinguishing cartridges- KIDDE bottle, agent container, discharge valve KIDDE bottle, aileron, pressure refueling line check valve assembly, fuel pressure sensing switch, and fuel flow indicator, Inspection of extinguishing system double checkout "T" valve, and fire-extinguishing system

direction valve, Check-out of fire-extinguishing system, horizontal stabilizer trim system, and fuel system and boost cross feed valve, Operational check of fire detecting system, and gust lock.

**80134209 Turbine Aeroplane Aerodynamic Structures & Systems (5) (HYD, L. Gear, Oxygen and De– Icing) (3 Credit Hrs., Prerequisite: 80134107)**

Hydraulic Power Theory of Operation, System Layout, Hydraulic Fluids, Hydraulic Pumps, Emergency and Auxiliary Pressure Generation, Hydraulic System Components, Control, Indication and Warning, Ice Formation, Ice Detection, Anti-Icing/De-Icing Systems, Engine Anti-Ice Systems, Windshield De-icing and Anti-icing Systems, Windshield Wiper System, Rain Repellent System, Probes and Drain Heating, Potable and Waste Water Heating Systems, Main Landing Gear, Nose Landing Gears, Shock Strut, Extension and Retraction, Indication and Warning, Wheels, Aircraft Tires, Aircraft Brakes, Hydraulic Braking Systems, Anti-Skid Systems, Auto Brake System, Steering, The Need for Oxygen, Crew Oxygen Systems, Passenger Oxygen System, Portable Oxygen, Safety Considerations, Maintenance, Vacuum Systems, High Pressure Pneumatic Systems, Low Pressure Pneumatic Systems, Water/Waste System Lay-out, Potable Water System, Waste Water System, Toilet System.

**80134210 Turbine Aeroplane Aerodynamic Structures & Systems (5) (HYD, L. Gear, Oxygen and De– Icing) (Workshop) (1 Credit Hr., Co-Requisite: 80134209)**

The students can be able to carry out the following practical applications: Remove and install of hydraulic pressure switches, hydraulic pump motor, hydraulic pressure transmitter, windshield wiper blades, wiper converter unit, main wheels and brake assembly, oxygen-cylinders, oxygen regulator, and oxygen control valve, Operational check of hydraulic power system, airspeed pitot heater system, landing gear system, and windshield wiper system, Service hydraulic reservoir, hydraulic power system accumulators, and shock strut, Perform functional test of anti-skid system, and Inspect nose landing gear steering system.

**80143101 Gas Turbine Engine (1) 3 Credit Hrs., Prerequisite: 80102104**

The "Choked" Nozzle, The Rocket and the Ram Jet, The Turbojet Engine, Engine Performance, Thrust, Power Measurement in Turboprop Aircraft, Efficiency, Thrust Factors, Engine Ratings, Inlet, General, Ram, Intake Design, Supersonic Intakes, Intake Ice Protection, Compressor Pressure Ratio, Types of Compressor, Axial Flow Compressors, Compressor Stall and Surge, Combination Compressors, Combustion Section, Components, Combustion Process, Combustion Chamber Cooling, Carbon Formation, Materials, Design Requirements, Types of Combustion Systems, Turbine Section, Types of Turbine, Turbine Construction, Turbine Blade Cooling, Shrouded and Knife Edge Turbine Blades, Turbine Blade Attachment, Active Clearance Control, Exhaust, Function, Construction,

Noise Suppression, Thrust Reversers, Bearings and Seals, Bearings, Seals, Lubricants, Sources Of Supply, Lubrication, Property of Oils, Oil Additives, Oil Types, Oil Contamination, Alternative Lubricating Oils, International Fuel Specifications, General Requirements, Listed Properties, Types of Aviation Fuels, Refueling/defueling and Fuel Tank Work Safety Precautions, Fuel Contamination. Lubrication Systems, Basic Requirements, Pressure Relief Valve System, Full Flow System, Total Loss System, Types of Bearing Lubrication, Components, Fuel Cooled Oil Coolers, Air-Oil Separation, Anti-Static Leak Check Valve, Vent Sub-System, Chip Detectors. Principles of Fuel Metering, Hydro-Mechanical Control Units, Proportional Flow Control, Proportional Flow Control, Acceleration Control Units, Engine Protection Devices, Systems, Fuel Nozzles, Effect of a Change of Fuel, Electronic Engine Control (EEC), Full Authority Digital Engine Control.

**80143102 Gas Turbine Engine (1) (Workshop) 1 Credit Hr., Co-Requisite80143101**

The students will be able to carry out the following practical applications: Inspection of powerplant, Removal and installation of LH engine anti icing solenoid valve, Inspection of combustion chamber, Inspection of turbine casing assembly, Inspect first stage turbine nozzle assembly, Removing and installing of engine aft nacelle fairing, Inspect exhaust cone, Bearing inspection, cleaning and handling, Removal and installation of pressure filter element, Remove, inspect and install engine main oil filter, Check engine oil level, Removal /installation scavenge strainer elements, Removal and installation fine scavenge filter element, Remove and reinstall fuel pump and tap hoses, Removal/installation engine fuel control unit screen, Remove, cleaning &install fuel pressurizing & dump valve inlet screen, Inspection of fuel manifold assembly.

**80143203 Gas Turbine Engine (2) 3 Credit Hrs., Co-Requisite80143101**

Air Systems Engine Bleed Air, Cooling, External Air Tapping's, Internal Sealing, Clearance Control, Control of Axial Bearing Loads, Hot Air Anti Ice Systems, Starting and Ignition Systems Start Sequence, Starters, Ignition Systems, Igniter Plugs, Handling of Ignition Units and Igniter Plugs, Engine Indication Systems Cockpit Displays, Temperature Measurement; Exhaust Gas Temperature, Pressure Measurement, Engine Thrust Indication, Oil Quantity Measurement, Fuel Flow Indication; Engine Speed; Vibration Indication Systems, Torque Indicating System, Types of Thrust Augmentation, Turbo-prop Engines, Single Shaft / Gear Coupled / Direct Coupled Turbine, Free Turbine / Power Turbine, Reduction Gears, Engine Controls, Hydro Mechanical Fuel Control System, FADEC Control System; Turbo Prop Instrumentation, Over speed Safety Devices; Turbo-shaft engines Configurations, Engine Control System, Auxiliary Power Units (APU) APU Control and Monitoring, Engine Mounts, Engine Drains, Engine Controls, Engine Build Unit, Fire Prevention – Bays or Zones, Installing and Removing Engines, Fire Protection, Fire Detection Systems, Fire Extinguishing Systems, Engine Monitoring and Ground Operation.

**80143204 Gas Turbine Engine (2) (Workshop) 1 Credit Hr., Co-Requisite: 80143203**

The students will be able to carry out the following practical applications: Removing and installing engine spark plug; Ignition system limits; Remove and install engine ignition unit out board side; Test engine ignition system; Check for grounded thermocouple leads; Check tachometer indicating system; Tachometer generator resistance and continuity check; Demonstrate reheat system (afterburner) operation; I.G.Vs Actuator house assembly removal & installation; Starting fuel manifold removal, inspection and installation; Fuel control air pressure sensing hose removal & installation; Starting fuel hose assembly and check valve removal and Installation; Removal, inspection and installation of engine chip detector; Removal, inspection and installation of fuel inlet strainer, cover, and servo supply filter; Auxiliary power unit starting; APU description; Foreign object damage (FOD) prevention in APU; Engine access door removal and installation; Removal and installation of direction valve; Inspection of fire-extinguishing system direction valve; Check-out of fire-extinguishing system; Testing fire protection system Description of fire extinguishing system operation; Inspection of extinguishing system double checkout "T" valve fire.

**80143205 Piston Engines 3 Credit Hrs., Prerequisite: 80121208**

Development of power, The Otto Engine, Two Stroke Engine; Diesel Engines, Linear Measurements, Compression Ratio, Efficiencies, what is Power? Measurement of Power, Factors Affecting Power, Constructional Arrangements, Crankcases, Camshafts, Connecting Rods, Cylinders, Pistons, Valve Mechanisms, Propeller Reduction Gearboxes, Power Take-Off Provision, Carburetors; Intake Icing, Fuel, The Float Chamber Carburetor, Fuel Injection Systems, Construction and Operating Principles, Typical Pressure Injection Carburetor, High Tension (HT) Ignition System, Magnetos, Ignition Leads(ht), Spark Plugs, Auxiliary Ignition Systems, Ignition Timing, Starters, Induction, Exhaust and Cooling Systems Engine Exhaust Systems, Cylinder Cooling, Induction System, Supercharging / Turbo charging, Aspirated Engines, Types of Lubrication, Oil Viscosity, Selection and Properties of Oil, Fuels, Grades, Octane and Lead, Avgas, Mogas, Diesel, Lubrication Systems, Lubrication, Other Oil Functions, Wet Sump System, Dry Sump System, Lubrication Supply - Oil Distribution, Engine Indicating Systems, Pressure Measurement, Measurement of Temperature, Engine Removal and Replacement.

**80143206 Piston Engines (Workshop) 1 Credit Hrs., Co-Requisite: 80143205**

The students will be able to carry out the following practical applications: Perform Valve clearance adjustments, Inspect, check cylinder assembly, Install Cylinder assembly, Remove and install rocker box cover& gaskets, inspect connecting rod, inspect crankshaft, inspect cylinder barrel, inspect crank case, Inspect and service reciprocating engine carburetor, Remove, inspect and install reciprocating engine induction system, Disassemble. reassemble turbocharger components, inspect cylinder cooling fins, Remove, Inspect and reinstall spark plug, Remove, inspect reciprocating engine starter, Remove service and inspect magneto, Remove ignition harness, Remove, install oil pipe, Remove, service oil filter, Inspect, service reciprocating Engine Exhaust System, remove, inspect and reinstall

propeller.

**80144107 Propellers 3 Credit Hrs ., Corequisite: 80143101**

Propeller Configuration, Modern Developments in Propeller Configuration, Propulsive Force, Propeller Terms, Effective Pitch, Geometric Pitch and Slip, Right and Left Handed Propellers, Angle of Attack, The Blade Element, Blade Angle and Blade Pitch, Blade Twist, Forces on a Blade Element, Variation of Fixed Pitch Propeller Efficiency with Speed, Windmilling, Feathering, Reverse Thrust, Propeller Solidity, Forces Acting on the Propeller, Pitch Range, Propeller Clearances, Handling Effects - Single Engine Aircraft, Thrust and Power Development, Turboprop Configurations, Vibration Forces and Resonance, Nomenclature, Propeller Types, Composite Propeller Blades, Classes of Propeller, Fixed-Pitch Propeller, Ground-Adjustable Propeller, Two Pitch Propellers, Single Acting Propeller, Double Acting Propellers, Propeller Installation, Spinner Installation, Installation Procedures, The Variable-Pitch Propeller, Types of Hydraulic Pitch-Change Mechanisms, Single Acting Propellers, Single Acting Full-Feathering and Constant-Speed Governing Systems, Double-Acting Propeller, Fine Pitch Stops, Hydraulic Pitch Lock, Auto Coarsening, Reverse Thrust, Hamilton Standard Propeller – Principle of Pitch Change Operation, Beta Control, Electrically Operated Propellers, FADEC Controlled Propellers, Synchronizing, Synchrophasing, Fluid Anti- Icing, Electrical De-Icing/Anti Icing, Blade Repairs, Maintenance Practices, Testing and General Repair Information, Propeller Vibration and Balance, Engine Control, Engine Operation, Instrumentation, Engine Running Procedures.

**80144108 Propellers (workshop) 1 Credit Hr., Co-Requisite: 80144107**

The students will be able to carry out the following practical applications: Distribution or (Twist) of Blade pitch, acting of forces on the propeller, Pitch of Propeller, Varying the pitch propeller and blade angles, Performing propeller Tracking.

**80153101 Maintenance Practices (1) 3 Credit Hrs., Prerequisite: 80122202**

Safety Precautions—Aircraft and Workshop, Workshop Practices, Tools, Common hand tool, Common Power Tools, Precision Measuring Instruments, Lubrication Equipment and Methods, Electrical General Test Equipment, Avionic General Test Equipment, Engineering Drawings, Diagrams and Standards, Microfilm, Microfiche and Computerized Presentations, Air Transport Association Specification - ATA No. 100, Common Aeronautical and Other Standards, Fits and Clearances, Dimensions, Allowances and Tolerances, Drill Sizes for Holes, Classes and Standards of Fits and Clearances, Ovality, Bow and Twist, Electrical Wiring Interconnection system (EWIS), Continuity and Insulation Testing, Use of Crimping Tools, Testing of Crimped Joints, Connector Pin Removal and Insertion, Coaxial Cables, Wire Types and their Identification, Wiring Protection Techniques, Wire Performance, Inspection Criteria and Damage Tolerance, Inspection of Electrical Wiring Interconnection Systems (EWIS).

**80153102 Maintenance Practices (1) (Workshop) 2 Credit Hrs., Co-Requisite: 80153101**

The student will be able to carry out the following practical applications: Inspection of aileron cable, removing rivet by using power and hand tools, use test meters to measure volts, amps and resistance in practical task circumstances, measuring outside diameter using micrometer, Inspect brake for wear limit, Crimping contacts for connectors.

**80153203 Maintenance Practices (2) 3 Credit Hrs., Prerequisite: 80153101**

Riveting, Solid Riveting, Blind and Special Fasteners, Pipes and Hoses, Bending and Flaring Aircraft Pipes, Inspection and Testing of Pipes and Hoses, Installation and Clamping of Pipes, Springs, Bearings, Handling and Cleaning of Bearings, Bearing Lubrication Requirements, Inspection of Bearings, Storage, Transmissions, Control Cables, Swaging of End Fittings, Handling, Inspection and Testing of Control Cables and Associated Hardware, Bowden and Teleflex Cable Systems, Material Handling, Sheet Metal, Composite.

**80153204 Maintenance Practices (2) (Workshop) 1 Credit Hr., Co-Requisite: 80153203**

The student will be able to carry out the following practical applications: Removal Rivet, repair Flush patch, repair Stringer, Install and rivet countersunk rivets in aluminum sheet, Inspection and testing of aircraft hoses, Lubrication of side brace idler link spring assembly, lubrication Nose landing gear, Inspection of pulleys, inspect gear for backlash, check control cables tension while rigging elevator control system, Remove installing and adjusting parking brake control cable.

**80154105 Maintenance Practices (3) 3 Credit Hrs., Prerequisite: 80153203**

Welding, Brazing, Soldering and Bonding, Welding, Soldering, and Bonding, Aircraft Weight and Balance, Aircraft Handling and Storage, Disassembly, Inspection, Repair and Assembly Techniques, Abnormal Events, Types of Abnormal Occurrences, Inspections Following Lightning and High Intensity Radiated Fields (HIRF), Inspections After Heavy Landings and Flight Through Turbulence, Maintenance Procedures, Maintenance Planning, Modification Procedures, Stores Procedures, Certification / Release Procedures, Interface With Aircraft Operation, Maintenance Inspection / Quality Control and Assurance, Additional Maintenance Procedures, Control of Life- Limited Components.

**80154106 Maintenance Practices (3) (Workshop) 1 Credit Hr., Co-Requisite: 80154105**

The student will be able to carry out the following practical applications: Inspection of complete welding, perform long time parking, Check & replenish hydraulic systems, Connect, and use external electrical power, troubleshooting wing flaps, Remove and reinstall internal and external lamps / bulbs, Remove and reinstall static discharge wick, Inspect radio altimeter antenna interior and exterior doublers, and fuselage skin in the area.

**80154207 On Job Training**

Includes all the practical activities which are carried out in the aircraft maintenance hangar &workshops such as aircraft jacking, ground handling, A/C systems inspections, functional operations, maintenance & repair trouble shooting, components replacement and testing using all required special tools, ground equipment's and training manuals in addition to adhere to all safety requirements while working on all aircraft components and each of the following systems.

- Electrical & Electronics Systems
- Digital Instruments Systems
- Engine Systems
- Pneumatic and hydraulics Systems
- A/C Fuel Systems
- Flight control Systems
- Environmental Systems
- A/C Structure Repair & Design