

| | |
|---------------|--|
| 1. Title | Electrical fundamentals I |
| 2. Code | EMAMAG336A |
| 3. Range | The knowledge is needed for a wide range of aircraft repair and maintenance works, e.g. applicable to aircrafts, analysis, machineries, airworthiness, airframes, avionics, materials, tests, documentation, safety, health and tools etc. |
| 4. Level | 3 |
| 5. Credit | 2 |
| 6. Competency | <u>Performance Requirement</u> |
| | <p>6.1 Knowledge</p> <ul style="list-style-type: none"> ◆ Able to understand the electron theory ◆ Able to understand the static electricity and conduction ◆ Able to understand the electrical terminology ◆ Able to understand the generation of electricity <ul style="list-style-type: none"> • Production of electricity by the following methods: light, heat, friction, pressure, chemical action, magnetism and motion. ◆ Able to understand the DC Sources of electricity <ul style="list-style-type: none"> • Construction and basic chemical action of: primary cells, secondary cells, lead acid cells, nickel cadmium cells, other alkaline cells. Cells connected in series and parallel. • Internal resistance and its effect on a battery. • Construction, materials and operation of thermocouples. • Operation of photo-cells. |

| | |
|------------------------|---|
| | <ul style="list-style-type: none"> ◆ Able to understand the AC theory <ul style="list-style-type: none"> • Sinusoidal waveform: phase, period, frequency, cycle. • Instantaneous, average, root mean square, peak, peak to peak current values and calculations of these values, in relation to voltage, current and power. • Triangular/Square waves. • Single / 3 phase principles. <p>6.2 Professional approach</p> <ul style="list-style-type: none"> ◆ Able to understand the principal elements of the subjects. |
| 7. Assessment Criteria | <p>The integral outcomes requirement of this UoC are:</p> <ul style="list-style-type: none"> (i) Able to understand the basic elements of the subjects. (ii) Able to give a simple description of the whole subject, using common words and examples. (iii) Able to use the typical terms. |
| 8. Remarks | Ref: HKAR-66 Module 3: Electrical fundamentals |