1. Title	Mathematics II (Mechanics Repair and Maintenance)
2. Code	EMAMBG301A
3. Range	Mathematics is needed for a wide range of calculations relating to aircraft repair and maintenance works,e.g. applicable to repair and maintenance works in aircrafts, stores, airworthiness, documentation, analysis, and tools etc
4. Level	3
5. Credit	3
6. Competency	Performance Requirement

6.1 Knowledge

♦ Able to understand the principal element of the Arithmetic unit
- Arithmetical terms and signs.
- Methods of multiplication and division.
- Fractions and decimals of numbers.
- Factors and multiples in groups of numbers.
- Meaning of weights.
- Measurements and conversion factors.
- Ratio and proportion in quantifying numbers.
- Averages and percentages for groups of numbers.
- Areas and volumes of objects, and squares, cubes, square roots and cube roots of numbers.

♦ Able to understand the principal element of the Algebra unit
- Evaluating simple algebraic expressions, addition, subtraction, multiplication and division
- Use of brackets
- Simple algebraic fractions

		• Linear equations and their solutions • Indices and powers • Negative and fractional indices • Binary and other applicable numbering systems • Simultaneous equations and second degree equations with one unknown • Logarithms ♦ Able to understand the principal element of the Geometry unit • Simple geometrical constructions • Graphical representation • Nature and uses of graphs • Graphs of equations/ functions • Simple trigonometry • Trigonometrical relationships • Use of tables • Rectangular and polar co-ordinates

	6.2 Theoretical and practical aspects	♦ Able to apply the following knowledge in the aircraft maintenance.
		• Arithmetic
		• Algebra
		  ‣ Evaluating simple algebraic expressions, addition, ubtraction, multiplication and division, use of brackets, simple algebraic fractions.
		• Geometry
		  ‣ Graphical representation
		  ‣ Simple trigonometry. trigonometrical relationships, use of tables and rectangular and polar co-ordinates.

	6.3 Professional approach	♦ Able to understand the principal elements of the subjects.
		♦ Able to understand the general knowledge of the theoretical and practical aspects of the following subjects.
		  • Arithmetic
		  • Algebra
		    ‣ Evaluating simple algebraic expressions, addition, ubtraction, multiplication and division, use of brackets, simple algebraic fractions.
		  • Geometry
		    ‣ Graphical representation
		    ‣ Simple trigonometry. trigonometrical relationships, use of tables and rectangular and polar co-ordinates.
		♦ Able to apply the knowledge in the aircraft maintenance task.

7. Assessment Criteria	The integral outcome requirement of this UoC is: (i) Able to understand the theoretical fundamentals of the subjects. (ii) Able to give a general description of the subjects using, as appropriate, typical examples. (iii) Able to use mathematical formulae in conjunction with physical laws describing the subjects. (iv) Able to read and understand sketches, drawings and schematics describing the subjects. (v) Able to apply the knowledge relating to mechanics repair and maintenance in a practical manner using detailed procedures.	
8. Remarks	Ref: HKAR-66 Module 1	