GAC Mathematics

Syllabus Checklist ·

Tick one box per statement: ☐ not yet ☐ nearly ☐ confident. : / / 。

1. GAC004 Mathematics I: Fundamentals GAC004 I:

1.1 Terminology and Arithmetic Review

☐☐☐ Solve elementary math problems using basic arithmetic operations.

1.2 Algebra I: Introductory Algebra I:

☐☐☐ Perform basic algebraic operations and solve equations and inequations using algebraic methods.

1.3 Algebra: Graphs of Algebraic Relations and Coordinate Geometry

☐☐☐ Graph algebraic relations and use coordinate geometry to solve problems.

1.4 Geometry: Plane, Solid, and Euclidean Geometry : 、

☐☐☐ Analyze simple problems involving planar shapes and solids and solve problems in Euclidean geometry.

1.5 Trigonometry

☐☐☐ Calculate solutions to various problems using trigonometric methods.

1.6 Exponential and Logarithmic Functions

☐☐☐ Solve and graph exponential and logarithmic functions and equations.

2. GAC010 Mathematics II: Probability, Statistics and Finance

GAC010 II: 、

2.1 Sequence and Series

☐☐☐ Solve problems using arithmetic and geometric sequences and series.

2.2 Finance – Earning Money and Purchasing Goods :

☐☐☐ Apply algebraic methods to solve financial problems and analyse information.

2.3 Finance – Investing Money and Loans :

☐☐☐ Apply algebraic methods to solve financial problems and analyse information.

2.4 Probability – Key Concepts :

☐☐☐ Solve problems using probability and counting techniques.

2.5 Statistics

☐☐☐ Analyse collected data using statistical methods.

2.6 Statistics – Numerical Measures of Central Locations :

☐☐☐ Analyse collected data using statistical methods.

2.7 Statistics – Numerical Measures of Variability :

☐☐☐ Analyse collected data using statistical methods.

2.8 Distributions – The Normal Distribution :

☐☐☐ Use the normal distribution to analyse data.

3. GAC016 Mathematics III: Calculus & Advanced Applications

GAC016 III:

3.1 Differentiation

☐☐☐ Determine the derivative (if it exists) of most mathematical functions and use the derivative to analyse functional behaviour.

3.2 Integration

☐☐☐ Use techniques of integration to find indefinite and definite integrals.

3.3 Advanced Applications

☐☐☐ Apply differentiation and integration techniques in a variety of practical problems.

4. GAC024 Discrete Mathematics GAC024

4.1 Sets, Relations and Functions 、

☐☐☐ Demonstrate understanding of the introductory concepts and properties of sets, relations and functions.

4.2 Counting Systems

☐☐☐ Understand the relationships between different counting systems and be able to perform simple binary arithmetic operations.

4.3 Binary Applications

☐☐☐ Understand the relationships between different counting systems and be able to perform simple binary arithmetic operations.

☐☐☐ Use the basic identities of Boolean algebra to analyse logic circuits and understand the basic principles of propositional logic.

4.4 Algorithms

☐☐☐ Construct and analyse algorithms and flowcharts for simple mathematical and general procedures.

4.5 Graphs and Networks

☐☐☐ Identify the basic types, properties and applications of graphs and trees.