







**MODULE MAP OF PROGRAMME LEARNING OUTCOMES:**

Programme: Actuarial Science (N323)

◆  
C Compulsory  
CC Core

Level	Module	C?		Knowledge															Intellectual Skills						Practical Skills						Key Skills					
				A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12	A13	A14	A15	B1	B2	B3	B4	B5	B6	C1	C2	C3	C4	C5	C6	D1	D2	D3	D4	D5	D6
Level 4	MA104	CC	Calculus	◆														◆	◆									◆		◆	◆	◆				
	MA108	CC	Statistics I	◆		◆												◆	◆								◆	◆	◆	◆	◆					
	MA114	CC	Linear Mathematics	◆	◆	◆												◆	◆									◆	◆	◆	◆	◆				
	MA118	CC	Further Calculus	◆	◆													◆	◆								◆		◆	◆	◆					
	MA126	CC	Financial Mathematics									◆		◆		◆	◆	◆	◆		◆	◆				◆	◆	◆		◆	◆	◆				
	BE300	CC	Introduction to Finance							◆								◆	◆	◆	◆					◆	◆	◆		◆	◆	◆				
EC111	CC	Introduction to Economics						◆	◆								◆	◆	◆							◆			◆	◆	◆					
Level 5	MA211	CC	Finance and Financial Reporting														◆	◆	◆								◆	◆		◆	◆	◆				
	BE311	CC	Corporate Finance							◆							◆	◆	◆	◆						◆	◆	◆	◆	◆	◆	◆				
	MA216	CC	Survival Models	◆				◆									◆	◆				◆	◆				◆		◆	◆	◆					
	MA206	C	Mathematical Methods	◆	◆													◆	◆								◆		◆	◆	◆					
	MA207	CC	Statistics II	◆				◆										◆	◆								◆	◆	◆	◆	◆					
	MA212	CC	Contingencies I					◆				◆	◆	◆				◆	◆			◆	◆				◆		◆	◆	◆					
EC201	CC	Macroeconomics (Intermediate)					◆	◆	◆	◆							◆	◆	◆	◆					◆	◆	◆	◆	◆	◆						
Level 6	MA319	C	Stochastic Processes	◆	◆													◆	◆	◆						◆		◆	◆	◆	◆					
	MA312	CC	Contingencies II					◆				◆	◆	◆				◆	◆			◆	◆				◆		◆	◆	◆					
	MA318	CC	Statistical Methods	◆				◆					◆	◆	◆				◆	◆						◆		◆	◆	◆	◆					
	EC202	CC	Microeconomics (Intermediate)					◆				◆						◆	◆	◆						◆	◆	◆	◆	◆	◆					
	MA311	CC	Mathematics of Portfolios	◆				◆										◆	◆	◆						◆		◆	◆	◆	◆					
	BE332	C	Options and Futures									◆						◆	◆	◆							◆		◆	◆	◆					
MA320	CC	Financial Derivatives									◆						◆	◆	◆	◆					◆	◆	◆	◆	◆	◆						



MODULE MAP OF PROGRAMME LEARNING OUTCOMES: ◆

Programme: Computing & Mathematics (GG14)

Module		Knowledge					Intellectual Skills					Practical Skills				Key Skills				
		A1	A2	A3	A4	A5	B1	B2	B3			C1	C2	C3	C4	D1	D2	D3	D4	D5
<b>Level 4</b>																				
MA104	Calculus	◆					◆	◆					◆			◆		◆	◆	◆
MA108	Statistics I	◆		◆			◆	◆				◆			◆		◆	◆	◆	
MA114	Linear Mathematics	◆	◆				◆	◆				◆			◆		◆	◆	◆	
MA118	Further Calculus	◆	◆				◆	◆				◆			◆		◆	◆	◆	
CE151	Introduction to Programming			◆				◆			◆		◆	◆	◆	◆		◆	◆	
CE152	Object-Oriented Programming			◆				◆			◆		◆	◆	◆	◆	◆	◆	◆	
CE153	Introduction to Databases			◆				◆			◆		◆	◆	◆	◆	◆	◆	◆	
CE154	Web Development			◆				◆			◆		◆	◆	◆	◆	◆	◆	◆	
<b>Level 5</b>																				
MA206	Mathematical Methods	◆	◆		◆		◆	◆				◆			◆		◆	◆	◆	
MA207	Statistics II	◆	◆	◆	◆		◆	◆				◆			◆		◆	◆	◆	
CE205	Databases and Information Retrieval			◆				◆			◆		◆	◆	◆	◆	◆	◆	◆	
CE204	Data Structures and Algorithms			◆				◆			◆		◆	◆	◆	◆	◆	◆	◆	
	CSEE Options (30 credits)			◆				◆							◆	◆		◆	◆	
	Maths Options	◆	◆		◆		◆	◆				◆			◆	◆	◆	◆	◆	
<b>Level 6</b>																				
MA302	Complex Variables and Applications	◆	◆		◆		◆	◆				◆			◆		◆	◆	◆	
MA303	Ordinary Differential Equations	◆	◆		◆	◆	◆	◆				◆			◆		◆	◆	◆	
	Mathematics Options (30 credits)	◆			◆	◆	◆	◆				◆			◆		◆	◆	◆	
CE303	Advanced Programming			◆	◆			◆			◆		◆	◆		◆		◆	◆	
	CSEE Options (45 credits)			◆	◆			◆								◆		◆	◆	

MODULE MAP OF PROGRAMME LEARNING OUTCOMES: ◆

Programme: Computing & Mathematics IYA (GG1L)

		Knowledge						Intellectual Skills			Practical Skills				Key Skills							
		Basic Maths Methods						Modelling & Assumptions			Use IT				Communication							
		Proof						Advanced Knowledge			Apply numerate approach				IT							
		USA						Methods to Solve Problem			Computer-Based System				Technical Descriptions and Reports							
		Evaluate Computer theories						Problem Analysis			Numeracy				Problem Solving							
		Self Learning																				
Module		A1	A2	A3	A4	A5	A6	B1	B2	B3			C1	C2	C3	C4		D1	D2	D3	D4	D5
<b>Level 4</b>																						
MA104	Calculus	◆						◆	◆					◆				◆		◆	◆	◆
MA108	Statistics I	◆						◆	◆					◆				◆		◆	◆	◆
MA114	Linear Mathematics	◆	◆					◆	◆					◆				◆		◆	◆	◆
MA118	Further Calculus	◆	◆					◆	◆					◆				◆		◆	◆	◆
CE151	Introduction to Programming			◆						◆			◆		◆	◆		◆	◆		◆	◆
CE152	Object-Oriented Programming			◆						◆			◆		◆	◆		◆	◆		◆	◆
CE153	Introduction to Databases			◆						◆			◆		◆	◆		◆	◆		◆	◆
CE154	Web Development			◆						◆			◆		◆	◆		◆	◆		◆	◆
<b>Level 5</b>																						
MA206	Mathematical Methods	◆	◆		◆			◆	◆					◆				◆		◆	◆	◆
MA207	Statistics II	◆			◆			◆	◆					◆		◆		◆		◆	◆	◆
CE205	Dataases and Information Retrieval			◆						◆			◆		◆	◆		◆	◆		◆	◆
CE204	Data Structures and Algorithms			◆						◆			◆		◆	◆		◆	◆		◆	◆
	CSEE Options (30 credits)			◆						◆								◆	◆		◆	◆
	Maths Options (30 credits)	◆	◆		◆			◆	◆					◆				◆	◆		◆	◆
MA501	Year Abroad	◆	◆				◆	◆	◆					◆	◆					◆	◆	◆
MA502	Year Abroad	◆	◆				◆	◆	◆					◆	◆					◆	◆	◆
<b>Level 6</b>																						
MA302	Complex Variables and Applications	◆	◆			◆		◆	◆					◆				◆		◆	◆	◆
MA303	Ordinary Differential Equations	◆	◆		◆	◆		◆	◆					◆				◆		◆	◆	◆
	Mathematics options (30 credits)	◆				◆		◆	◆					◆				◆		◆	◆	◆
CE303	Advanced Programming			◆		◆				◆			◆		◆	◆			◆		◆	◆
	CSEE Options (45 credits)			◆		◆				◆								◆		◆	◆	◆

**MODULE MAP OF PROGRAMME LEARNING OUTCOMES:**

◆ indicates that the learning outcome is mapped to the module  
 C indicates that a module is compulsory

**Programme: Economics and Mathematics IYA (LG1C)**

		Knowledge									Cognitive				Practical						Key Skills					
Module		A1	A2	A3	A4	A5	A6	A7	A8	A9	B1	B2	B3	B4	C1	C2	C3	C4	C5	C6		D1	D2	D3	D4	D5
Level 4	MA104	C	Calculus	◆			◆				◆	◆				◆	◆	◆				◆		◆	◆	◆
	MA108	C	Statistics I	◆		◆					◆	◆			◆	◆		◆				◆	◆	◆	◆	◆
	MA114	C	Linear Mathematics	◆	◆			◆			◆	◆				◆		◆				◆		◆	◆	◆
	MA118	C	Further Calculus	◆	◆			◆			◆	◆				◆		◆				◆		◆	◆	◆
	MA122	C	Introduction to Computing			◆		◆			◆	◆			◆	◆		◆					◆	◆	◆	◆
	MA181	C	Discrete Mathematics	◆	◆			◆			◆	◆				◆		◆				◆		◆	◆	◆
	EC111	C	Introduction to Economics				◆	◆		◆	◆	◆	◆					◆	◆	◆	◆	◆			◆	◆
Level 5	EC201	C	Macroeconomics (Intermediate)				◆		◆	◆	◆						◆	◆	◆	◆		◆			◆	◆
	EC202	C	Microeconomics (Intermediate)				◆		◆	◆	◆						◆	◆	◆	◆		◆			◆	◆
	MA203	C	Analysis	◆	◆			◆			◆	◆	◆	◆		◆	◆	◆				◆		◆	◆	◆
	MA206	C	Mathematical Methods	◆	◆			◆			◆	◆				◆		◆				◆		◆	◆	◆
	MA207	C	Statistics II	◆	◆			◆			◆	◆			◆	◆		◆				◆	◆	◆	◆	◆
			Mathematics Option (15 credit)	◆				◆			◆	◆				◆		◆				◆		◆	◆	◆
Level 6	MA501	C	Year Abroad	◆	◆			◆		◆	◆					◆	◆	◆				◆		◆	◆	◆
	MA502	C	Year Abroad	◆	◆			◆		◆	◆					◆	◆	◆				◆		◆	◆	◆
	MA303	C	Ordinary Differential Equations	◆				◆			◆	◆				◆		◆				◆		◆	◆	◆
	MA311	C	Mathematics of Portfolios	◆				◆	◆	◆		◆	◆	◆			◆	◆	◆	◆		◆			◆	◆
	<b>Economics Options (60 credits)</b>			◆				◆			◆	◆				◆		◆				◆		◆	◆	◆
	<b>Mathematics Options (30 credits)</b>			◆	◆			◆			◆	◆				◆		◆				◆		◆	◆	◆



**MODULE MAP OF PROGRAMME LEARNING OUTCOMES:**

◆ indicates that the learning outcome is mapped to the module  
 C indicates that a module is compulsory

**Programme: Economics and Mathematics (LG11)**

		Knowledge								Cognitive				Practical						Key Skills							
Module		A1	A2	A3	A4	A5	A6	A7	A8	B1	B2	B3	B4			C1	C2	C3	C4	C5	C6		D1	D2	D3	D4	D5
Level 4	MA104	C	Calculus	◆						◆	◆						◆	◆	◆				◆		◆	◆	◆
	MA108	C	Statistics I	◆		◆				◆	◆					◆	◆		◆				◆	◆	◆	◆	◆
	MA114	C	Linear Mathematics	◆	◆					◆	◆						◆	◆	◆				◆		◆	◆	◆
	MA118	C	Further Calculus	◆	◆					◆	◆						◆	◆	◆				◆		◆	◆	◆
	MA122	C	Introduction to Computing			◆				◆	◆					◆	◆	◆	◆					◆	◆	◆	◆
	MA181	C	Discrete Mathematics	◆	◆					◆	◆						◆	◆	◆				◆		◆	◆	◆
	EC111	C	Introduction to Economics				◆	◆		◆	◆	◆	◆					◆	◆	◆	◆		◆			◆	◆
Level 5	EC201	C	Macroeconomics (Intermediate)				◆		◆	◆		◆	◆					◆	◆	◆	◆		◆			◆	◆
	EC202	C	Microeconomics (Intermediate)				◆		◆	◆		◆	◆					◆	◆	◆	◆		◆			◆	◆
	MA203	C	Analysis	◆	◆				◆	◆	◆	◆					◆	◆	◆				◆		◆	◆	◆
	MA206	C	Mathematical Methods	◆	◆				◆	◆							◆	◆	◆				◆		◆	◆	◆
	MA207	C	Statistics II	◆	◆				◆	◆						◆	◆	◆	◆				◆	◆	◆	◆	◆
			Mathematics Option (15 credits)	◆					◆	◆							◆	◆	◆				◆		◆	◆	◆
Level 6	MA303	C	Ordinary Differential Equations	◆	◆				◆	◆							◆	◆	◆				◆		◆	◆	◆
	MA311	C	Mathematics of Portfolios	◆					◆	◆							◆	◆	◆				◆		◆	◆	◆
	<b>Economics Options (60 credits)</b>							◆	◆	◆		◆	◆					◆	◆	◆	◆		◆			◆	◆
	<b>Mathematics Options (30 credits)</b>			◆					◆	◆							◆	◆	◆				◆		◆	◆	◆

**MODULE MAP OF PROGRAMME LEARNING OUTCOMES:**

◆ indicates that the learning outcome is mapped to the module  
 C indicates that a module is compulsory

**Programme: Finance & Mathematics (GN1H) IYA**

		Knowledge								Cognitive				Practical						Key Skills						
		A1	A2	A3	A4	A5	A6	A7	A8	B1	B2	B3	B4		C1	C2	C3	C4	C5	C6		D1	D2	D3	D4	D6
		Basic Maths	Method Of Proof	Computing	Maths for Finance	Modelling Processes	Advanced Study	Finance Concepts	Finance Understanding	Analyse a Problem	Assess Relative Merits	Synthesise Information	Formulate Finance Ideas		Use Computational Tools	Use Numerate Approach	Gather Relevant Information	Take Systematic Notes	Present Financial Arguments	Use Finance Terminology		Communicate Effectively	Use Appropriate IT	Use Mathematical Techniques	Analyse Complex Problems	Independent Study
Module		A1	A2	A3	A4	A5	A6	A7	A8	B1	B2	B3	B4		C1	C2	C3	C4	C5	C6		D1	D2	D3	D4	D6
Level 4	MA104	C	Calculus	◆			◆			◆	◆				◆	◆		◆				◆	◆	◆	◆	◆
	MA108	C	Statistics I	◆	◆	◆				◆	◆				◆	◆		◆				◆	◆	◆	◆	◆
	MA114	C	Linear Mathematics	◆	◆		◆			◆	◆				◆	◆		◆				◆	◆	◆	◆	◆
	MA118	C	Further Calculus	◆	◆		◆			◆	◆				◆	◆		◆				◆	◆	◆	◆	◆
	MA126	C	Financial Mathematics		◆					◆	◆					◆						◆		◆	◆	◆
	BE300	C	Introduction to Finance					◆		◆	◆	◆	◆					◆	◆	◆		◆		◆	◆	
	EC111	C	Introduction to Economics				◆	◆		◆	◆	◆					◆	◆				◆		◆	◆	
Level 5	BE312	C	Foundations of Finance																							
	BE311	C	Corporate Finance					◆	◆	◆	◆	◆	◆			◆	◆	◆	◆	◆		◆		◆	◆	
	BE313	C	Portfolio Analysis				◆	◆	◆	◆	◆	◆	◆			◆	◆	◆	◆	◆		◆		◆	◆	
	EC202	C	Microeconomics (Intermediate)				◆			◆	◆	◆				◆		◆				◆		◆	◆	
	MA206	C	Mathematical Methods	◆	◆		◆	◆		◆	◆				◆	◆		◆				◆	◆	◆	◆	◆
	MA207	C	Statistics II	◆	◆		◆	◆		◆	◆				◆	◆		◆				◆	◆	◆	◆	◆
	MA216	C	Survival Analysis	◆		◆	◆			◆	◆				◆	◆		◆				◆	◆	◆	◆	◆
Level 6	BE331	C	Pricing of Securities in Financial markets				◆	◆	◆	◆	◆	◆	◆			◆	◆	◆	◆	◆		◆		◆	◆	
			Mathematics Option (15 credits)			◆	◆	◆	◆	◆	◆	◆	◆		◆	◆		◆				◆	◆	◆	◆	◆
	MA303	C	Ordinary Differential Equations	◆	◆		◆			◆	◆				◆	◆		◆				◆		◆	◆	◆
	MA311	C	Mathematics of Portfolios				◆			◆	◆				◆	◆		◆				◆	◆	◆	◆	◆
			Economics Options				◆			◆	◆	◆					◆	◆				◆		◆	◆	
			Accounting Options				◆			◆	◆	◆	◆			◆	◆	◆	◆	◆		◆		◆	◆	

**MODULE MAP OF PROGRAMME LEARNING OUTCOMES:**

◆ indicates that the learning outcome is mapped to the module  
 C indicates that a module is compulsory

**Programme: Finance & Mathematics (GN1H) IYA**

		Knowledge									Cognitive				Practical						Key Skills					
		A1	A2	A3	A4	A5	A6	A7	A8	A9	B1	B2	B3	B4	C1	C2	C3	C4	C5	C6	D1	D2	D3	D4	D6	
		Basic Maths	Method Of Proof	Computing	Maths for Finance	Modelling Processes	Advanced Study	Finance Concepts	Finance Understanding	Year Abroad	Analyse a Problem	Assess Relative Merits	Synthesise Information	Formulate Finance Ideas	Use Computational Tools	Use Numerate Approach	Gather Relevant Information	Take Systematic Notes	Present Financial Arguments	Use Finance Terminology	Communicate Effectively	Use Appropriate IT	Use Mathematical Techniques	Analyse Complex Problems	Independent Study	
Module		A1	A2	A3	A4	A5	A6	A7	A8	A9	B1	B2	B3	B4	C1	C2	C3	C4	C5	C6	D1	D2	D3	D4	D6	
Level 4	MA104	C	◆			◆					◆	◆			◆	◆	◆				◆	◆	◆	◆	◆	
	MA108	C	◆	◆	◆						◆	◆			◆	◆	◆				◆	◆	◆	◆	◆	
	MA114	C	◆	◆		◆					◆	◆			◆	◆		◆			◆	◆	◆	◆	◆	
	MA118	C	◆	◆		◆					◆	◆			◆	◆	◆				◆	◆	◆	◆	◆	
	MA126	C		◆							◆	◆			◆						◆		◆	◆	◆	
	BE300	C						◆			◆	◆	◆	◆				◆	◆	◆	◆		◆	◆	◆	
	EC111	C				◆		◆			◆	◆	◆				◆	◆			◆			◆	◆	
Level 5	BE312																									
	BE311	C						◆	◆		◆	◆	◆	◆		◆	◆	◆	◆	◆	◆			◆	◆	
	BE313	C			◆			◆	◆		◆	◆	◆	◆		◆	◆	◆	◆	◆	◆			◆	◆	
	EC202	C			◆						◆	◆	◆			◆		◆			◆			◆	◆	
	MA206	C	◆	◆	◆	◆					◆	◆			◆	◆	◆				◆	◆	◆	◆	◆	
	MA207	C	◆	◆	◆	◆					◆	◆			◆	◆	◆				◆	◆	◆	◆	◆	
	MA216	C	◆		◆	◆					◆	◆			◆	◆	◆				◆	◆	◆	◆	◆	
YAB																										
	MA501									◆																
	MA502									◆																
Level 6	BE331	C			◆	◆	◆	◆			◆	◆	◆	◆		◆	◆	◆	◆	◆	◆			◆	◆	
				◆	◆	◆	◆				◆	◆			◆	◆	◆				◆	◆	◆	◆	◆	
	MA303	C	◆	◆	◆	◆					◆	◆			◆	◆	◆				◆		◆	◆	◆	

MA311	C	Mathematics of Portfolios				◆		◆				◆	◆					◆	◆		◆			◆	◆	◆	◆	◆
<b>Economics Options</b>								◆											◆	◆					◆	◆		
<b>Accounting Options</b>						◆		◆		◆		◆	◆	◆	◆				◆	◆	◆	◆	◆		◆			◆

MODULE MAP OF PROGRAMME LEARNING OUTCOMES



Programme: BSc Management and Mathematics IYA NG2C

Module	Knowledge and Understanding										Cognitive					Pract			Key Skills									
	Code	Title	Credit	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	B1	B2	B3	B4	B5	C1	C2	C3	D1	D2	D3	D4	D5	
Level 4	BE100	Introduction to Accounting	30																									
	BE400	Introduction to Management	30						◆	◆	◆	◆	◆										◆	◆	◆	◆	◆	
	MA104	Calculus	15	◆	◆										◆	◆					◆		◆	◆	◆	◆	◆	
	MA108	Statistics I	15	◆		◆									◆	◆				◆	◆	◆	◆		◆	◆	◆	
	MA114	Linear Mathematics	15	◆	◆										◆	◆					◆		◆	◆	◆	◆	◆	
	MA118	Further Calculus	15	◆	◆										◆	◆					◆		◆	◆	◆	◆	◆	
Level 5	BE410	Organisational Behaviour	15						◆	◆					◆							◆				◆	◆	
	BE411	Operations and Supply Chain Management	15						◆	◆	◆				◆	◆	◆					◆				◆	◆	
	BE413	International Business Environment	15						◆	◆	◆	◆			◆	◆	◆					◆				◆	◆	
	MA205	Optimisation (Linear Programming)	15	◆		◆	◆	◆							◆	◆				◆	◆		◆	◆	◆	◆	◆	
	MA206	Mathematical Methods	15	◆	◆			◆	◆						◆	◆					◆		◆	◆	◆	◆	◆	
	MA207	Statistics II	15	◆	◆			◆	◆						◆	◆				◆	◆	◆	◆		◆	◆	◆	
	MA216	Survival Analysis	15	◆		◆	◆	◆							◆	◆				◆	◆	◆	◆	◆		◆	◆	
		Option	15														◆	◆					◆				◆	◆
	MA501	Year abroad	30	◆	◆		◆							◆														
	MA502	Year abroad	30	◆	◆		◆							◆														
Level 6	BE431	Business Strategy	15						◆			◆										◆	◆	◆		◆	◆	
	BE433	Human Resource Management	15						◆				◆									◆	◆			◆	◆	
	MA311	Mathematics of Portfolios	15					◆	◆						◆	◆				◆		◆	◆		◆	◆	◆	
		Management Options	30														◆	◆				◆	◆		◆	◆	◆	
	Mathematics Options	45													◆	◆					◆	◆		◆	◆	◆	◆	

MODULE MAP OF PROGRAMME LEARNING OUTCOMES



Programme: BSc Management and Mathematics NG21

Module	Knowledge and Understanding										Cognitive					Pract			Key Skills						
	Code	Title	Credit	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	B1	B2	B3	B4	B5	C1	C2	C3	D1	D2	D3	D4
Level 4	BE100	Introduction to Accounting	30												◆	◆	◆				◆	◆	◆	◆	◆
	BE400	Introduction to Management	30					◆	◆	◆	◆	◆			◆	◆					◆	◆		◆	◆
	MA104	Calculus	15	◆	◆								◆	◆					◆		◆	◆		◆	◆
	MA108	Statistics I	15	◆		◆							◆	◆				◆	◆	◆	◆	◆		◆	◆
	MA114	Linear Mathematics	15	◆	◆								◆	◆					◆		◆	◆		◆	◆
	MA118	Further Calculus	15	◆	◆								◆	◆					◆		◆	◆		◆	◆
Level 5	BE410	Organisational Behaviour	15					◆	◆				◆		◆	◆					◆			◆	◆
	BE411	Operations and Supply Chain Management	15					◆		◆			◆		◆	◆					◆			◆	◆
	BE413	International Business Environment	15					◆	◆	◆	◆		◆	◆	◆	◆					◆			◆	◆
	MA205	Optimisation (Linear Programming)	15	◆		◆	◆	◆					◆	◆				◆	◆		◆	◆		◆	◆
	MA206	Mathematical Methods	15	◆	◆		◆	◆					◆	◆					◆		◆	◆		◆	◆
	MA207	Probability and Statistics II	15	◆	◆		◆	◆					◆	◆				◆	◆	◆	◆	◆		◆	◆
	MA216	Survival Analysis	15	◆		◆	◆	◆					◆	◆				◆	◆	◆	◆	◆		◆	◆
		Management Option	15													◆	◆				◆			◆	◆
Level 6	BE431	Business Strategy	15					◆				◆			◆	◆				◆	◆	◆		◆	◆
	BE433	Human Resource Management	15					◆				◆			◆	◆					◆			◆	◆
	MA311	Mathematics of Portfolios	15				◆	◆					◆	◆				◆		◆	◆		◆	◆	
		Management Options	30													◆	◆				◆			◆	◆
		Mathematics Options	45											◆	◆				◆		◆			◆	◆

**MODULE MAP OF PROGRAMME LEARNING OUTCOMES:  
BSc Management with Mathematics IYA N2G1**

Lvl	Module	Knowledge/Understanding												Key Skills																
		Fundamental Accounting	Accounting Contexts	Management Accounting	Advanced Planning	Management Contexts	Behaviour at Work	Operations Management	Strategic Management	Human Resource Management	Basic Maths	Math Modelling	USA	Bring together Data	Evaluate Evidence	Analyse Data	Analyse Problem	Record Transactions	Prepare Budgets	Financial Analysis	Investment Appraisal	Numerate Approach	Computational Tools	Identify Data Sources	Present Ideas Coherently	Use IT	Manipulate Data	Analyse Problems	Improve own Learning	
Code	Title	Cr	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12	B1	B2	B3	B4	C1	C2	C3	C4	C5	C6	C7	D1	D2	D3	D4	D5
4	BE100	Introduction to Accounting	30	◆	◆										◆	◆	◆									◆	◆	◆	◆	◆
	BE300	Introduction to Finance	15												◆	◆	◆							◆	◆	◆	◆	◆	◆	◆
	BE400	Introduction to Management	30				◆	◆	◆	◆	◆				◆	◆										◆			◆	◆
	MA108	Statistics I	15									◆	◆					◆					◆			◆		◆	◆	◆
	MA114	Linear Mathematics	15									◆	◆					◆					◆			◆		◆	◆	◆
	MA104	Calculus	15	◆												◆	◆			◆				◆			◆		◆	◆
5	BE111	Management Accounting I	15	◆	◆	◆	◆								◆	◆	◆		◆	◆	◆	◆			◆	◆	◆	◆	◆	
	BE410	Organisational Behaviour	15				◆	◆			◆					◆										◆		◆	◆	◆
	BE310	Introduction to Quantitative Management	15			◆	◆		◆			◆	◆				◆	◆					◆	◆		◆	◆	◆	◆	◆
	BE411	Operations and Supply Chain Management	15				◆	◆	◆	◆	◆					◆										◆		◆	◆	◆
	BE113	Management Accounting II	15	◆	◆	◆	◆								◆	◆	◆		◆	◆	◆	◆			◆	◆	◆	◆	◆	◆
	BE413	International Business Environment	15		◆		◆	◆	◆	◆	◆				◆	◆		◆						◆		◆	◆	◆	◆	◆
	MA207	Statistics II	15									◆	◆				◆	◆						◆	◆	◆	◆	◆	◆	◆
	MA205	Optimisation (Linear Programming)	15									◆	◆											◆	◆	◆	◆	◆	◆	◆
6	MA501	Year Abroad	30											◆																
	MA502	Year Abroad	30											◆																
6	BE431	Business Strategy	15				◆			◆					◆	◆			◆	◆	◆	◆			◆	◆	◆	◆	◆	◆
		Mathematics Options	30									◆	◆		◆	◆	◆	◆						◆	◆	◆	◆	◆	◆	◆
		Management Options	75												◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆

**MODULE MAP OF PROGRAMME LEARNING OUTCOMES:  
BSc Management with Mathematics N2G1**

Lvl	Module	Knowledge/Understanding											Key Skills																		
		Code	Title	Cr	Fundamental Accounting	Accounting Contexts	Management Accounting	Advanced Planning	Management Contexts	Behaviour at Work	Operations Management	Strategic Management	Human Resource Management	Basic Maths	Math Modelling	Bring together Data	Evaluate Evidence	Analyse Data	Analyse Problem	Record Transactions	Prepare Budgets	Financial Analysis	Investment Appraisal	Numerate Approach	Computational Tools	Identify Data Sources	Present Ideas Coherently	Use IT	Manipulate Data	Analyse Problems	Improve own Learning
					A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	B1	B2	B3	B4	C1	C2	C3	C4	C5	C6	C7	D1	D2	D3	D4	D5
4	BE100	Introduction to Accounting	30	◆	◆											◆	◆	◆								◆	◆	◆	◆	◆	
	BE300	Introduction to Finance	15													◆	◆	◆						◆	◆	◆	◆	◆	◆	◆	
	BE400	Introduction to Management	30					◆	◆	◆	◆	◆				◆	◆									◆			◆	◆	
	MA108	Statistics I	15											◆	◆				◆				◆			◆			◆	◆	
	MA114	Linear Mathematics	15												◆	◆			◆				◆			◆			◆	◆	
	MA104	Calculus	15	◆													◆	◆			◆						◆		◆	◆	
5	BE111	Management Accounting I	15	◆	◆	◆	◆									◆	◆	◆		◆	◆	◆	◆			◆	◆	◆	◆	◆	
	BE410	Organisational Behaviour	15					◆	◆				◆				◆									◆			◆	◆	
	BE310	Introduction to Quantitative Management	15			◆	◆			◆				◆	◆			◆					◆	◆		◆	◆	◆	◆	◆	
	BE411	Operations and Supply Chain Management	15					◆	◆	◆	◆	◆					◆									◆	◆	◆	◆	◆	
	BE113	Management Accounting II	15	◆	◆	◆	◆									◆	◆	◆		◆	◆	◆	◆			◆	◆	◆	◆	◆	
	BE413	International Business Environment	15		◆			◆	◆	◆	◆	◆				◆	◆		◆				◆			◆	◆		◆	◆	
	MA207	Statistics II	15												◆	◆			◆				◆	◆		◆	◆	◆	◆	◆	
	MA205	Optimisation (Linear Programming)	15												◆	◆							◆			◆			◆	◆	
6	BE431	Business Strategy	15					◆				◆				◆	◆			◆	◆	◆	◆			◆	◆	◆	◆	◆	
		Mathematics Options	30											◆	◆	◆	◆	◆					◆	◆		◆	◆	◆	◆	◆	
		Management Options	75													◆	◆								◆	◆		◆	◆	◆	



MODULE MAP OF PROGRAMME LEARNING OUTCOMES:



BSc Maths and Liberal Arts GV19

		Knowledge						Cognitive					Practical				Key Skills				
		Knowledge	Knowledge of proofs	Appreciation of radical ideas	Advanced Humanities knowledge	Essay writing	Development of intellectual thought	Problem analysis	Assess techniques	Synthesis	Criticising new ideas	Cross disciplinary thought	Numeracy	Information gathering	Organise ideas	Written argument	Communication	Independent study	Complex arguments	Applying techniques	Analysing problems
		A1	A2	A3	A4	A5	A6	B1	B2	B3	B4	B5	C1	C2	C3	C4	D1	D2	D3	D4	D5
Module	Title	A1	A2	A3	A4	A5	A6	B1	B2	B3	B4	B5	C1	C2	C3	C4	D1	D2	D3	D4	D5
Level 4	MA104	◆	◆										◆	◆						◆	◆
	MA114	◆											◆	◆						◆	◆
	MA108	◆						◆		◆			◆	◆						◆	◆
	MA118	◆							◆	◆			◆	◆						◆	◆
	CS101			◆		◆	◆			◆	◆				◆	◆			◆		
	Humanities option					◆	◆			◆	◆				◆	◆			◆		
Level 5	CS201			◆		◆	◆			◆	◆	◆			◆	◆	◆	◆	◆		
	MA206		◆					◆	◆					◆						◆	◆
	Maths option													◆							
	Humanities option				◆	◆					◆				◆	◆			◆		
Level 6	CS301	◆										◆									
	MA303	◆	◆					◆	◆			◆		◆						◆	◆
	Maths options							◆				◆		◆							
	Humanities option				◆	◆	◆		◆	◆	◆	◆			◆	◆	◆	◆	◆		

**MODULE MAP OF PROGRAMME LEARNING OUTCOMES:**



**Maths and Liberal Arts with a Year Abroad GV1X**

		Knowledge							Cognitive					Practical				Key Skills					
		Knowledge	Knowledge of proofs	Appreciation of radical ideas	Advanced Humanities knowledge	Essay writing	Development of intellectual thought	YAB	Problem analysis	Assess techniques	Synthesis	Criticising new ideas	Cross disciplinary thought	Numeracy	Information gathering	Organise ideas	Written argument	Communication	Independent study	Complex arguments	Applying techniques	Analysing problems	
		A1	A2	A3	A4	A5	A6	A7	B1	B2	B3	B4	B5		C1	C2	C3	C4	D1	D2	D3	D4	D5
Level 4	<b>Module</b>	<b>Title</b>																					
	<b>MA104</b>	Calculus	◆	◆											◆	◆						◆	◆
	<b>MA114</b>	Linear Mathematics	◆												◆	◆						◆	◆
	<b>MA108</b>	Statistics I	◆						◆		◆				◆	◆						◆	◆
	<b>MA118</b>	Further Calculus	◆							◆	◆				◆	◆						◆	◆
	<b>CS101</b>	The Enlightenment			◆		◆	◆			◆	◆					◆	◆				◆	
	<b>Humanities option</b>	(30 credits)																					
Level 5	<b>CS201</b>	The World in Question			◆		◆	◆			◆	◆	◆				◆	◆	◆	◆	◆		
	<b>MA206</b>	Mathematical Methods		◆					◆	◆						◆						◆	◆
	<b>Maths options</b>	(45 credits)													◆								
	<b>Humanities option</b>	(30 credits)				◆	◆					◆					◆	◆				◆	
Year Abroad	<b>MA501</b>							◆															
	<b>MA502</b>							◆															
Level 6	<b>CE301</b>	Dangerous Ideas																					
	<b>MA303</b>	Ordinary Differential Equations	◆	◆					◆	◆			◆			◆						◆	◆
	<b>Maths options</b>	(45 credits)							◆				◆		◆								
	<b>Humanities option</b>	(30 credits)				◆	◆	◆			◆	◆	◆				◆	◆	◆	◆	◆		

MODULE MAP OF PROGRAMME LEARNING OUTCOMES:

Programme: Mathematics, Cryptography and Network Security GG1K

Module		Knowledge					Practical					Key Skills											
		A1	A2	A3	A4	A5	B1	B2				C1	C2				D1	D2	D3	D4	D5		
<b>Level 4</b>																							
MA104	Calculus	◆					◆	◆				◆					◆		◆	◆	◆		
MA108	Statistics I	◆					◆	◆				◆					◆		◆	◆	◆		
MA114	Linear Mathematics	◆	◆				◆	◆				◆					◆		◆	◆	◆		
MA118	Further Calculus	◆	◆				◆	◆				◆					◆		◆	◆	◆		
CE151	Introduction to Programming			◆			◆	◆			◆	◆						◆	◆	◆	◆		
CE152	Object-Oriented Programming			◆			◆	◆			◆	◆						◆	◆	◆	◆		
CE153	Introduction to Databases			◆			◆	◆			◆	◆						◆	◆	◆	◆		
CE155	Network Fundamentals			◆		◆	◆	◆			◆	◆						◆	◆	◆	◆		
<b>Level 5</b>																							
MA201	Linear Algebra	◆	◆				◆	◆				◆					◆		◆	◆	◆		
MA203	Analysis	◆	◆				◆	◆				◆					◆		◆	◆	◆		
MA205	Optimisation (Linear Programming)	◆			◆			◆			◆	◆					◆	◆	◆	◆	◆		
MA206	Mathematical Methods	◆	◆		◆		◆	◆				◆					◆		◆	◆	◆		
MA207/MA209/MA210	Statistics II / Introduction to Numerical Methods / Vector Calculus	◆	◆	◆	◆			◆			◆	◆					◆	◆	◆	◆	◆		
CE203	Application Programming			◆			◆	◆			◆	◆					◆	◆	◆	◆	◆		
CE231	Computer and Data Networks			◆		◆	◆	◆			◆	◆					◆	◆		◆	◆		
CE235	Computer Security			◆		◆	◆	◆			◆	◆					◆	◆		◆	◆		
<b>Level 6</b>																							
MA303	Ordinary Differential Equations																						
MA314	Graph Theory		◆		◆		◆	◆				◆					◆		◆	◆	◆		
MA315	Cryptography & Codes		◆		◆	◆	◆	◆				◆					◆		◆	◆	◆		
CE324	Network Security				◆	◆	◆	◆				◆					◆		◆	◆	◆		
	Mathematics Options (60 credits)						◆	◆				◆					◆		◆	◆	◆		

11 Solving  
Self Guidance



MODULE MAP OF PROGRAMME LEARNING OUTCOMES:

Programme: Mathematics, Cryptography and Network Security IYA GGC4

Module		Knowledge						Practical						Key Skills										
		A1	A2	A3	A4	A5	A6	B1	B2					C1	C2				D1	D2	D3	D4	D5	
<b>Level 4</b>																								
MA104	Calculus	◆						◆	◆						◆				◆		◆	◆	◆	
MA108	Statistics I	◆						◆	◆						◆				◆		◆	◆	◆	
MA114	Linear Mathematics	◆	◆					◆	◆						◆				◆		◆	◆	◆	
MA118	Further Calculus	◆	◆					◆	◆						◆				◆		◆	◆	◆	
CE151	Introduction to Programming			◆				◆	◆					◆	◆					◆	◆	◆	◆	
CE152	Object-Oriented Programming			◆				◆	◆					◆	◆					◆	◆	◆	◆	
CE153	Introduction to Databases			◆				◆	◆					◆	◆					◆	◆	◆	◆	
CE155	Network Fundamentals			◆		◆		◆	◆					◆	◆					◆	◆	◆	◆	
<b>Level 5</b>																								
MA201	Linear Algebra	◆	◆					◆	◆						◆				◆		◆	◆	◆	
MA203	Analysis	◆	◆					◆	◆						◆				◆		◆	◆	◆	
MA205	Optimisation (Linear Programming)	◆			◆				◆					◆	◆				◆	◆	◆	◆	◆	
MA206	Mathematical Methods	◆	◆		◆			◆	◆					◆	◆				◆		◆	◆	◆	
MA207/MA209/MA210	Statistics II / Introduction to Numerical Methods / Vector Calculus	◆	◆	◆	◆			◆	◆					◆	◆				◆	◆	◆	◆	◆	
CE203	Application Programming			◆				◆	◆					◆	◆				◆	◆		◆	◆	
CE231	Computer and Data Networks			◆		◆		◆	◆					◆	◆				◆	◆		◆	◆	
CE235	Computer Security			◆		◆		◆	◆					◆	◆				◆	◆		◆	◆	
MA501	Year Abroad	◆	◆				◆	◆	◆					◆	◆				◆	◆	◆	◆	◆	
MA502	Year Abroad	◆	◆				◆	◆	◆					◆	◆				◆	◆	◆	◆	◆	
<b>Level 6</b>																								
MA303	Ordinary Differential Equations																							
MA314	Graph Theory		◆		◆			◆	◆					◆					◆		◆	◆	◆	
MA315	Cryptography & Codes		◆		◆	◆		◆	◆					◆					◆		◆	◆	◆	
CE324	Network Security				◆	◆		◆	◆					◆					◆		◆	◆	◆	
	Mathematics Options (60 credits)							◆	◆					◆					◆		◆	◆	◆	

11 Solving  
Self Guidance









### Skills

D3	D4	D5
◆	◆	◆
◆	◆	◆
◆	◆	◆
◆	◆	◆
◆	◆	◆
		◆
◆	◆	◆
◆	◆	◆
◆	◆	◆
◆	◆	◆
◆	◆	◆
◆	◆	◆
◆	◆	◆
◆	◆	◆
◆	◆	◆
◆	◆	◆
◆	◆	◆





**MODULE MAP OF PROGRAMME LEARNING OUTCOMES:**

**Programme: Mathematics and Statistics with a Year Abroad 9K12**

Basic Maths

		Module		A1
Level 4	MA104-4-AU	Calculus	CC	◆
	MA108-4-SP	Statistics I	CC	◆
	MA114-4-AU	Linear Mathematics	CC	◆
	MA118-4-SP	Further Calculus	CC	◆
	MA122-4-AU	Introduction to Computing	C	
	MA181-4-SP	Discrete Mathematics	C	◆
		from First Year option list A		
		from First Year option list A		
	MA199-4-FY	Mathematics Careers and Employability	C	
Level 5	MA207-5-AU	Statistics II	CC	◆
	MA216-5-SP	Survival Analysis	CC	
	MA206-5-AU	Mathematical Methods	C	◆
	MA209-5-SP	Introduction to Numerical Methods	C	◆
	MA210-5-SP	Vector Calculus	C	◆
		Mathematics Option from List B		
		Mathematics Option from List B		
		Mathematics Option from List B		
	MA 199-5-FY	Mathematics Careers and Employability	C	
Level 6	MA317-6-AU	Modelling Experimental Data		
	MA318-7-SP	Statistical Methods		
	MA321-6-SP	Applied Statistics		
		Statistics Option from List C		
		Mathematics or Statistics Option from List C or List D		
		2 to 3 Mathematics Option from List D		
		MA199-6-FY	Mathematics Careers and Employability	C

**List A**

- MA105-4-AU      Applied Mathematics
- MA125-4-SP     Mathematical Skills
- MA126-4-SP     Financial Mathematics
- CE151-4-AU     Introduction to Programming

◆
◆

<b>CE152-4-SP</b>	Object-oriented Programming	<input type="checkbox"/>
<b>CE163-4-AU</b>	Foundations of Electronics	<input type="checkbox"/>
<b>EC111-4-FY</b>	Introduction to Economics	<input type="checkbox"/>

**List B**

<b>MA201-5-AU</b>	Linear Algebra	<input checked="" type="checkbox"/>
<b>MA203-5-SP</b>	Analysis	<input checked="" type="checkbox"/>
<b>MA205-5-AU</b>	Optimization	<input type="checkbox"/>
<b>MA212-5-AU</b>	Contingencies I	<input type="checkbox"/>
<b>MA224-5-AU</b>	The Laws of Physics	<input type="checkbox"/>
<b>EC252-5-SP</b>	Introduction to Econometric Methods	<input type="checkbox"/>

**List C**

<b>MA319-6-AU</b>	Stochastic processes	<input checked="" type="checkbox"/>
<b>MA322-6-SP</b>	Bayesian Computational Statistics	<input type="checkbox"/>

**List D**

<b>MA302-6-SP</b>	Complex Variables and Applications	<input checked="" type="checkbox"/>
<b>MA303-6-AU</b>	Ordinary Differential Equations	<input checked="" type="checkbox"/>
<b>MA305-6-AU</b>	Nonlinear Programming	<input checked="" type="checkbox"/>
<b>MA306-6-SP</b>	Combinatorial Optimization	<input type="checkbox"/>
<b>MA311-6-SP</b>	Mathematics of Portfolios	<input checked="" type="checkbox"/>
<b>MA312-6-AU</b>	Contingencies II	<input type="checkbox"/>
<b>MA314-6-SP</b>	Graph Theory	<input type="checkbox"/>
<b>MA315-6-AU</b>	Cryptography and Codes	<input type="checkbox"/>
<b>MA333-6-SP</b>	Mathematical Biology	<input checked="" type="checkbox"/>
<b>MA831-6-FY</b>	Mathematics Project	<input checked="" type="checkbox"/>
<b>EC352-A-AU</b>	Econometric Methods	<input type="checkbox"/>

- ◆ Indicates that the learning outcome is mapped to the module
- C Indicates that a module is compulsory
- CC Indicates that a Core module

	Knowledge					Cognitive					Practical				Key Skills					
	Ideas of Proof	IT	Modelling	Statistics	Analyse Problem	Articulate Arguments	Bring together Data	Evaluate Evidence	Analyse Data	Use Computational Tools	Use Rigorous Approach	Organising and presenting data	Identify Data Sources	Present Ideas Coherently	Use IT	Use Maths	Analyse Problems	Working with others	Improve own Learning	
	A2	A3	A4	A5	B1	B2	B3	B4	B5	C1	C2	C3	C4	D1	D2	D3	D4	D5	D6	
	◆				◆	◆					◆			◆		◆	◆	◆	◆	
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	Mathematics Option from List B																	
<b>MA 199-5-FY</b>	Mathematics Careers and Employability	<b>C</b>																

	<b>Year Abroad</b>	<b>C</b>	◆	◆		◆	◆	◆	◆	◆							◆	◆
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Level 6

<b>MA317-6-AU</b>	Modelling Experimental Data				◆		◆		◆	◆	◆		◆	◆	◆			
<b>MA318-7-SP</b>	Statistical Methods			◆	◆	◆	◆		◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
<b>MA321-6-SP</b>	Applied Statistics				◆		◆		◆	◆	◆		◆	◆	◆			
	Statistics Option from List C																	
	Mathematics or Statistics Option from List C or List D																	
	2 to 3 Mathematics Option from List D																	
<b>MA199-6-FY</b>	Mathematics Careers and Employability	<b>C</b>																

**List A**

- MA105-4-AU** Applied Mathematics
- MA125-4-SP** Mathematical Skills
- MA126-4-SP** Financial Mathematics
- CE151-4-AU** Introduction to Programming
- CE152-4-SP** Object-oriented Programming
- CE163-4-AU** Foundations of Electronics
- EC111-4-FY** Introduction to Economics

		◆				◆	◆				◆	◆						
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		◆					◆							◆	◆			
		◆					◆	◆										◆

**List B**

- MA201-5-AU** Linear Algebra
- MA203-5-SP** Analysis
- MA205-5-AU** Optimization
- MA212-5-AU** Contingencies I
- MA224-5-AU** The Laws of Physics
- EC252-5-SP** Introduction to Econometric Methods

◆	◆					◆	◆											◆
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		◆	◆	◆		◆	◆		◆			◆		◆	◆			
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		◆		◆		◆	◆					◆	◆	◆				

**List C**

- MA319-6-AU** Stochastic processes
- MA322-6-SP** Bayesian Computational Statistics

◆	◆		◆			◆	◆				◆		◆		◆			
		◆		◆		◆	◆	◆			◆	◆	◆					

**List D**

- MA302-6-SP**      Complex Variables and Applications
- MA303-6-AU**      Ordinary Differential Equations
- MA305-6-AU**      Nonlinear Programming
- MA306-6-SP**      Combinatorial Optimization
- MA311-6-SP**      Mathematics of Portfolios
- MA312-6-AU**      Contingencies II
- MA314-6-SP**      Graph Theory
- MA315-6-AU**      Cryptography and Codes
- MA333-6-SP**      Mathematical Biology
- MA831-6-FY**      Mathematics Project
- EC352-A-AU**      Econometric Methods

◆	◆		◆			◆	◆				◆
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			◆				◆

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		◆		◆	◆	◆	◆
◆		◆		◆	◆	◆	◆
◆	◆	◆	◆		◆	◆	◆

**MODULE MAP OF PROGRAMME LEARNING OUTCOMES:**

**Programme: Mathematics and Statistics with a Year Abroad**

Basic Maths

				A1
Level 4	<b>MA104-4-AU</b>	Calculus	CC	◆
	<b>MA108-4-SP</b>	Statistics I	CC	◆
	<b>MA114-4-AU</b>	Linear Mathematics	CC	◆
	<b>MA118-4-SP</b>	Further Calculus	CC	◆
	<b>MA122-4-AU</b>	Introduction to Computing	C	
	<b>MA181-4-SP</b>	Discrete Mathematics	C	◆
		from First Year option list A		
		from First Year option list A		
	<b>MA199-4-FY</b>	Mathematics Careers and Employability	C	
Level 5	<b>MA207-5-AU</b>	Statistics II	CC	◆
	<b>MA216-5-SP</b>	Survival Analysis	CC	
	<b>MA206-5-AU</b>	Mathematical Methods	C	◆
	<b>MA209-5-SP</b>	Introduction to Numerical Methods	C	◆
	<b>MA210-5-SP</b>	Vector Calculus	C	◆
		Mathematics Option from List B		
		Mathematics Option from List B		
		Mathematics Option from List B		
	<b>MA 199-5-FY</b>	Mathematics Careers and Employability	C	
	<b>MA100-6-FY</b>	<b>Placement Year</b>	C	
Level 6	<b>MA317-6-AU</b>	Modelling Experimental Data		
	<b>MA318-7-SP</b>	Statistical Methods		
	<b>MA321-6-SP</b>	Applied Statistics		
		Statistics Option from List C		
		Mathematics or Statistics Option from List C or List D		
		2 to 3 Mathematics Option from List D		
		<b>MA199-6-FY</b>	Mathematics Careers and Employability	C

**List A**

**MA105-4-AU** Applied Mathematics  
**MA125-4-SP** Mathematical Skills



<b>MA126-4-SP</b>	Financial Mathematics	<input checked="" type="checkbox"/>
<b>CE151-4-AU</b>	Introduction to Programming	<input type="checkbox"/>
<b>CE152-4-SP</b>	Object-oriented Programming	<input type="checkbox"/>
<b>CE163-4-AU</b>	Foundations of Electronics	<input type="checkbox"/>
<b>EC111-4-FY</b>	Introduction to Economics	<input type="checkbox"/>

**List B**

<b>MA201-5-AU</b>	Linear Algebra	<input checked="" type="checkbox"/>
<b>MA203-5-SP</b>	Analysis	<input checked="" type="checkbox"/>
<b>MA205-5-AU</b>	Optimization	<input type="checkbox"/>
<b>MA212-5-AU</b>	Contingencies I	<input type="checkbox"/>
<b>MA224-5-AU</b>	The Laws of Physics	<input type="checkbox"/>
<b>EC252-5-SP</b>	Introduction to Econometric Methods	<input type="checkbox"/>

**List C**

<b>MA319-6-AU</b>	Stochastic processes	<input checked="" type="checkbox"/>
<b>MA322-6-SP</b>	Bayesian Computational Statistics	<input type="checkbox"/>

**List D**

<b>MA302-6-SP</b>	Complex Variables and Applications	<input checked="" type="checkbox"/>
<b>MA303-6-AU</b>	Ordinary Differential Equations	<input checked="" type="checkbox"/>
<b>MA305-6-AU</b>	Nonlinear Programming	<input checked="" type="checkbox"/>
<b>MA306-6-SP</b>	Combinatorial Optimization	<input type="checkbox"/>
<b>MA311-6-SP</b>	Mathematics of Portfolios	<input checked="" type="checkbox"/>
<b>MA312-6-AU</b>	Contingencies II	<input type="checkbox"/>
<b>MA314-6-SP</b>	Graph Theory	<input type="checkbox"/>
<b>MA315-6-AU</b>	Cryptography and Codes	<input type="checkbox"/>
<b>MA333-6-SP</b>	Mathematical Biology	<input checked="" type="checkbox"/>
<b>MA831-6-FY</b>	Mathematics Project	<input checked="" type="checkbox"/>
<b>EC352-A-AU</b>	Econometric Methods	<input type="checkbox"/>







MODULE MAP OF PROGRAMME LEARNING OUTCOMES: ◆

Programme: Mathematics with Computing (G1GK)

Module		Knowledge						Intellectual Skills				Practical Skills				Key Skills							
		A1	A2	A3	A4	A5	A6	B1	B2					C1	C2				D1	D2	D3	D4	D5
<b>Level 4</b>																							
MA104	Calculus	◆						◆	◆					◆					◆		◆	◆	◆
MA108	Statistics I	◆						◆	◆					◆					◆		◆	◆	◆
MA114	Linear Mathematics	◆						◆	◆					◆					◆		◆	◆	◆
MA118	Further Calculus	◆						◆	◆					◆					◆		◆	◆	◆
MA122	Introduction to Computing	◆	◆	◆	◆	◆		◆	◆				◆	◆				◆	◆	◆	◆	◆	◆
MA181	Discrete Mathematics	◆	◆					◆	◆										◆	◆	◆	◆	◆
CE151	Introduction to Programming			◆		◆		◆	◆				◆	◆				◆	◆	◆	◆	◆	◆
CE152	Object-Oriented Programming			◆		◆		◆	◆				◆	◆				◆	◆	◆	◆	◆	◆
<b>Level 5</b>																							
MA206	Mathematical Methods	◆	◆					◆	◆					◆				◆		◆	◆	◆	◆
MA207	Statistics II	◆			◆			◆	◆									◆		◆	◆	◆	◆
	Mathematics Options	◆	◆					◆	◆					◆				◆		◆	◆	◆	◆
CE203	Application Programming			◆		◆		◆	◆				◆					◆	◆		◆	◆	◆
CE204	Data Structures and Algorithms			◆		◆		◆	◆				◆					◆	◆		◆	◆	◆
	CSEE Options			◆		◆		◆	◆				◆	◆				◆		◆	◆	◆	◆
<b>Level 6</b>																							
MA302	Complex Variables and Applications	◆	◆					◆	◆					◆				◆		◆	◆	◆	◆
MA303	Ordinary Differential Equations	◆	◆		◆			◆	◆									◆		◆	◆	◆	◆
	CSEE Options (30 credits)			◆		◆		◆	◆				◆	◆				◆	◆		◆	◆	◆
	Mathematics Options (60 credits)	◆	◆					◆	◆				◆					◆		◆	◆	◆	◆

MODULE MAP OF PROGRAMME LEARNING OUTCOMES: ◆

Programme: Mathematics with Computing IYA (G1G4)

Module		Knowledge						Intellectual Skills				Practical Skills				Key Skills							
		A1	A2	A3	A4	A5	A6	B1	B2					C1	C2				D1	D2	D3	D4	D5
				Basic Maths Methods Proof IT	Modelling & Assumptions Computer Programming USA	Methods to Solve Problem Problem Analysis							Use IT Apply numerate approach					Communication IT	Numeracy Problem Solving Self Guidance				
<b>Level 4</b>																							
MA104	Calculus	◆						◆	◆					◆					◆		◆	◆	◆
MA108	Statistics I	◆						◆	◆					◆					◆		◆	◆	◆
MA114	Linear Mathematics	◆						◆	◆					◆					◆		◆	◆	◆
MA118	Further Calculus	◆						◆	◆					◆					◆		◆	◆	◆
MA122	Introduction to Computing	◆	◆	◆	◆	◆		◆	◆				◆	◆					◆	◆	◆	◆	◆
MA181	Discrete Mathematics	◆	◆					◆	◆										◆	◆	◆	◆	◆
CE151	Introduction to Programming			◆		◆		◆	◆				◆	◆					◆	◆	◆	◆	◆
CE152	Object-Oriented Programming			◆		◆		◆	◆				◆	◆					◆	◆	◆	◆	◆
<b>Level 5</b>																							
MA206	Mathematical Methods	◆	◆					◆	◆				◆						◆		◆	◆	◆
MA207	Statistics II	◆			◆			◆	◆					◆					◆		◆	◆	◆
	Mathematics Options	◆	◆					◆	◆				◆						◆		◆	◆	◆
CE203	Application Programming			◆		◆		◆	◆				◆						◆	◆		◆	◆
CE204	Data Structures and Algorithms			◆		◆		◆	◆				◆						◆	◆		◆	◆
	CSEE Options			◆		◆		◆	◆				◆	◆					◆		◆	◆	◆
MA501	Year Abroad	◆	◆					◆	◆	◆			◆	◆					◆	◆	◆	◆	◆
MA502	Year Abroad	◆	◆					◆	◆	◆			◆	◆					◆	◆	◆	◆	◆
<b>Level 6</b>																							
MA302	Complex Variables and Applications	◆	◆					◆	◆				◆						◆		◆	◆	◆
MA303	Ordinary Differential Equations	◆	◆		◆			◆	◆										◆		◆	◆	◆
	CSEE Options			◆		◆		◆	◆				◆	◆					◆	◆		◆	◆
	Mathematics Options	◆	◆					◆	◆				◆						◆		◆	◆	◆

MODULE MAP OF PROGRAMME LEARNING OUTCOMES: ◆

Programme: Mathematics with Economics (G1L1)

Module	Knowledge					Practical					Key Skills				
	A1	A2	A3	A4	A5	B1	B2	C1	C2	D1	D2	D3	D4	D5	
<b>Level 4</b>															
EC111					◆			◆	◆			◆	◆	◆	
MA104	◆						◆	◆		◆			◆	◆	
MA108	◆		◆				◆	◆		◆	◆	◆	◆	◆	
MA114	◆	◆					◆	◆		◆		◆	◆	◆	
MA118	◆	◆					◆	◆		◆		◆	◆	◆	
MA122			◆				◆	◆			◆	◆	◆	◆	
MA181	◆	◆					◆	◆		◆		◆	◆	◆	
<b>Level 5</b>															
EC202				◆	◆			◆	◆			◆	◆	◆	
MA203	◆	◆					◆	◆		◆		◆	◆	◆	
MA205	◆	◆	◆	◆			◆	◆		◆	◆	◆	◆	◆	
MA206	◆	◆					◆	◆		◆		◆	◆	◆	
MA207	◆	◆					◆	◆		◆		◆	◆	◆	
				◆			◆	◆		◆		◆	◆	◆	
<b>Level 6</b>															
MA303	◆	◆		◆			◆	◆		◆		◆	◆	◆	
MA311	◆			◆			◆	◆		◆		◆	◆	◆	
	◆	◆		◆			◆	◆		◆		◆	◆	◆	
				◆	◆		◆	◆		◆		◆	◆	◆	

MODULE MAP OF PROGRAMME LEARNING OUTCOMES: ◆

Programme: Mathematics with Economics IYA (G1LC)

Module	Knowledge						Practical						Key Skills				
	A1	A2	A3	A4	A5	A6	B1	B2	C1	C2	D1	D2	D3	D4	D5		
<b>Level 4</b>																	
EC111					◆		◆	◆			◆		◆	◆	◆		
MA104	◆						◆	◆		◆		◆	◆	◆	◆		
MA108	◆						◆	◆		◆		◆	◆	◆	◆		
MA114	◆	◆					◆	◆		◆		◆	◆	◆	◆		
MA118	◆	◆					◆	◆		◆		◆	◆	◆	◆		
MA122			◆					◆	◆	◆		◆	◆	◆	◆		
MA181	◆	◆					◆	◆		◆		◆	◆	◆	◆		
<b>Level 5</b>																	
EC202				◆	◆		◆	◆			◆		◆	◆	◆		
MA203	◆	◆					◆	◆		◆		◆	◆	◆	◆		
MA205	◆	◆	◆	◆			◆	◆	◆	◆		◆	◆	◆	◆		
MA206	◆	◆					◆	◆		◆		◆	◆	◆	◆		
MA207	◆	◆						◆		◆		◆	◆	◆	◆		
				◆			◆	◆		◆		◆	◆	◆	◆		
MA501	◆	◆		◆		◆	◆	◆		◆		◆	◆	◆	◆		
MA502	◆	◆		◆		◆	◆	◆		◆		◆	◆	◆	◆		
<b>Level 6</b>																	
MA303	◆	◆		◆			◆	◆		◆		◆	◆	◆	◆		
MA311	◆			◆			◆	◆		◆		◆	◆	◆	◆		
	◆	◆		◆			◆	◆				◆	◆	◆	◆		
				◆	◆		◆	◆				◆	◆	◆	◆		

**MODULE MAP OF PROGRAMME LEARNING OUTCOMES:**



**Programme: Mathematics with a Modern Language G1R9**

		Knowledge						Intellectual Skills			Practical Skills				Key Skills						
Module	C?	A1	A2	A3	A4	A5	A6	B1	B2	B3	C1	C2	C3	C4	D1	D2	D3	D4	D5	D6	
Level 4	MA104	C	Calculus	◆																	
	MA108	C	Statistics I	◆				◆	◆		◆	◆				◆	◆	◆	◆	◆	◆
	MA114	C	Linear Mathematics	◆	◆			◆	◆			◆					◆	◆			◆
	MA118	C	Further Calculus	◆	◆			◆	◆			◆				◆		◆	◆		◆
		C	Language (Advanced) OR (Part 1 Intensive)				◆			◆			◆	◆		◆	◆			◆	◆
		C	Language (Part 2 Intensive) OR MA122 and MA181																		
Level 5																					
	MA203	C	Analysis	◆	◆			◆	◆			◆				◆		◆	◆		◆
	MA205	C	Optimisation (Linear Programming)			◆		◆	◆		◆	◆				◆	◆	◆	◆		◆
	MA206	C	Mathematical Methods	◆	◆			◆	◆			◆				◆		◆	◆		◆
	MA207	C	Statistics II	◆				◆	◆			◆				◆		◆	◆	◆	◆
			Optional modules (2 x 15 credits)	◆		◆		◆	◆		◆	◆				◆	◆	◆	◆		◆
			Language Module (Advanced or Proficiency)				◆			◆			◆	◆		◆	◆			◆	◆
Level 6																					
	MA302	C	Complex Variables	◆	◆			◆	◆			◆				◆		◆	◆		◆
	MA303	C	Ordinary Differential Equations	◆	◆			◆	◆			◆				◆		◆	◆		◆
			Maths Options (Either 2 x 15 credits and 1 x 30 credits OR 4 x 15 credits)																		
			Language Module (Mastery or Proficiency)				◆			◆			◆	◆		◆	◆			◆	◆

**MODULE MAP OF PROGRAMME LEARNING OUTCOMES:**



**Programme: Mathematics with a Modern Language (IYA) GCR9**

		Knowledge						Intellectual Skills			Practical Skills				Key Skills						
Module	C?	A1	A2	A3	A4	A5	A6	B1	B2	B3	C1	C2	C3	C4	D1	D2	D3	D4	D5	D6	
Level 4	MA104	C	Calculus	◆					◆	◆						◆		◆	◆		◆
	MA108	C	Statistics I	◆					◆	◆	◆	◆				◆	◆	◆	◆	◆	◆
	MA114	C	Linear Mathematics	◆	◆				◆	◆		◆				◆		◆	◆		◆
	MA118	C	Further Calculus	◆	◆				◆	◆		◆				◆		◆	◆		◆
		C	Language (Advanced) OR (Part 1 Intensive)				◆			◆				◆	◆					◆	◆
		C	Language (Part 2 Intensive) OR MA122 and MA181																		
Level 5	MA203	C	Analysis	◆	◆				◆	◆		◆				◆		◆	◆		◆
	MA205	C	Optimisation (Linear Programming)			◆			◆	◆	◆	◆				◆	◆	◆	◆		◆
	MA206	C	Mathematical Methods	◆	◆				◆	◆		◆				◆		◆	◆		◆
	MA207	C	Statistics II	◆					◆	◆		◆				◆		◆	◆	◆	◆
			Optional modules (2 x 15 credits)	◆		◆			◆	◆	◆	◆				◆	◆	◆	◆		◆
			Language Module (Advanced or Proficiency)				◆			◆			◆	◆		◆	◆			◆	◆
Level 5	MA501		Year abroad	◆	◆		◆	◆	◆	◆	◆	◆	◆	◆	◆	◆		◆	◆	◆	◆
	MA502		Year abroad	◆	◆		◆	◆	◆	◆	◆	◆	◆	◆	◆	◆		◆	◆	◆	◆
Level 6	MA302	C	Complex Variables	◆	◆				◆	◆		◆				◆		◆	◆	◆	◆
	MA303	C	Ordinary Differential Equations	◆	◆				◆	◆		◆				◆		◆	◆	◆	◆
			Maths Options (Either 2 x 15 credits and 1 x 30 credits OR 4 x 15 credits)																		
			Language Module (Mastery or Proficiency)				◆			◆				◆	◆					◆	◆

**MODULE MAP OF PROGRAMME LEARNING OUTCOMES**  
**BSc Management, Mathematics & Economics NGL0**

Lvl	Module	Code	Title	Cr	Knowledge/Understanding															Key Skills									
					Basic Maths									Current research Packages Modelling MSOR applications Econ principles Information sources Management USA						Analyze problem Assess theory Synthesize Construct assessments Computational Tools Rigorous Numerical Approach Identify Information Take Notes Present Ideas in Writing Use Appropriate Terminology Present Ideas Coherently Use Appropriate IT Maths techniques Analyse Problems Improve Own Learning									
					A1	A2	A3	A4	A5	A6	A7	A8	A9	B1	B2	B3	B4	C1	C2	C3	C4	C5	C6	D1	D2	D3	D4	D5	
4	BE100	Introduction to Accounting	30		◆					◆				◆	◆	◆	◆			◆	◆	◆	◆	◆			◆	◆	
	BE400	Introduction to Management	30			◆	◆		◆	◆	◆			◆	◆	◆	◆	◆		◆	◆	◆	◆	◆	◆		◆	◆	
	EC111	Introduction to Economics	30							◆	◆			◆	◆	◆	◆			◆	◆	◆	◆	◆			◆	◆	
	MA108	Statistics I	15	◆		◆	◆	◆						◆				◆	◆		◆		◆	◆	◆	◆	◆	◆	
	MA114	Linear Mathematics	15	◆			◆	◆						◆				◆	◆		◆		◆	◆		◆	◆	◆	
5	BE410	Organisational Behaviour	15				◆							◆	◆		◆			◆	◆	◆	◆	◆			◆	◆	
	BE310	Introduction to Quantitative Management	15	◆			◆	◆						◆	◆		◆	◆		◆	◆		◆	◆	◆	◆	◆	◆	
	BE413	International Business Environment	15		◆					◆	◆			◆	◆	◆	◆			◆	◆	◆	◆	◆			◆	◆	
	MA207	Statistics II	15				◆	◆						◆		◆	◆	◆		◆	◆		◆	◆	◆	◆	◆	◆	
	MA205	Optimisation (Linear Programming)	15			◆	◆	◆						◆			◆	◆		◆	◆		◆	◆	◆	◆	◆	◆	
	EC202	Microeconomics	30								◆			◆	◆	◆	◆			◆	◆	◆	◆	◆	◆			◆	◆
		EBS Options	15							◆				◆	◆	◆				◆	◆	◆	◆	◆					
6	BE431	Business Strategy	15		◆				◆		◆			◆	◆			◆		◆	◆	◆	◆	◆			◆	◆	
	BE433	Human Resource Management	15		◆						◆			◆	◆	◆	◆			◆	◆	◆	◆	◆			◆	◆	
	MA311	Mathematics of Portfolios	15		◆		◆	◆						◆			◆	◆		◆	◆		◆	◆	◆	◆	◆	◆	
		Management or Mathematics Options	45												◆					◆	◆		◆	◆			◆	◆	
		Economics Options	30												◆					◆	◆	◆	◆	◆			◆	◆	