

Mathematics with Economics

Students pursuing Mathematics (*Major*) and Economics (*Major*) should have the following:

Levels II and III courses for Economics Major

ECON2000 Intermediate Microeconomics I
 ECON2002 Intermediate Macroeconomics I
 ECON2017 Calculus II for Business and Social Sciences
 ECON2019 Matrix Algebra for Business and Social Sciences
 ECON2001 Intermediate Microeconomics II
 ECON2003 Intermediate Macroeconomics II
 ECON3031 Probability and Distribution Theory
 ECON3049 Econometrics I

Where Economics and Math courses are anti-requisites, students should **substitute** the economics courses with other Levels II and III Economics electives. You cannot take a course for credit if you have already or are currently taking one of its anti-requisites.

Courses	Anti requisites
ECON1003	MATH0110, MATH1150, MATH1180, MATH1140
ECON1001	ECON1011, ECON1012
ECON1002	ECON1011, ECON1012
ECON1005	SOCI1005, MATH2140, MATH2150
ECON1006	MATH1150 , MATH1180
ECON1011	ECON1001, ECON1002
ECON1012	ECON1001, ECON1002
ECON2000	MGMT2020
ECON2007	ECON2008, MATH2150, MATH3341
ECON2008	SOCI2008, MATH2150, M31D
ECON2009	MATH2150, M31D, SOCI2008
ECON2010	SOCI2009
ECON2014	SOCI2007
ECON2017	MATH2160, MATH2125
ECON2019	MATH2110
ECON2020	ECON2021
ECON3031	MATH2140
ECON3032	MATH2150, MATH2160
ECON3037	MATH3130
ECON3038	MATH3370
ECON3049	MATH3341

ACTUARIAL SCIENCE

Codes	Names	Credits
Part I		
MATH1141	Introductory Linear Algebra and Analytic Geometry	3
MATH1142	Calculus I	3
MATH1151	Calculus II	3
MATH1152	Introduction to Formal Mathematics	3
COMP1126	Introduction to Computing I	3
COMP1127	Introduction to Computing II	3
COMP1161	Object oriented programming	3
COMP1220	Computing & Society	3
ECON1000	Principles of Economics I	3
ECON1012	Principles of Economics II	3
ACCT1005	Introduction to Financial Accounting	3
ACCT1003	Introduction to Cost & Management Accounting	3

Part II Compulsory

MATH2401	Elements of Mathematical Analysis	3
MATH2404	Introduction to Probability Theory	3
MATH2410	A first course in Linear Algebra	3
MATH2701	Financial Mathematics I	3
MGMT2023	Financial Management I	3
MATH2407	Stochastic Modelling I	3
MATH2420	Introduction of Ordinary Differential Equations	3
MATH2702	Actuarial Mathematics I	3
STAT2001	Inferential Statistics	3
MATH3801	Financial Mathematics II	3
MATH3804	Actuarial Mathematics II	3
MATH3805	Mathematics of Pension Funds	3
STAT3001	Regression Analysis	3
MATH3802	Evaluation of Actuarial Models	3
MATH3803	Models for Financial Economics	3
MATH3806	Topics in General Insurance	3
MATH3002	Time Series	3
MGMT3048	Financial Management II	3

A minimum of eleven (11) additional credits should be selected from:

MATH2403	Multivariable Calculus	3
MATH2411	Introduction of Abstract Algebra	3
MATH2430	Linear Optimization	3
MATH2431	Non-Linear Optimization	3
MATH3014	Selected Topics in Operations Algebra	3
MATH3410	Advanced Linear Algebra	3

MATH3221	Introduction to Partial Differential Equations	3
MATH3422	Mathematical Modelling	3
MATH3423	Research Project in Mathematics	3
MATH3424	Numerical Methods	3
MATH3490	Complex Analysis	3
COMP2140	Software Engineering	3
COMP2180	Web Design & Programming I	3
COMP3110	Information Systems in Organisations	3
COMP3180	Web Design & Programming II	3
SOCI2004	Introduction to Population	3
SOCI3018	Demography I	3
SOCI3021	Demography II	3
ECON2000	Intermediate Microeconomics I	3
ECON2001	Intermediate Microeconomics II	3
ECON2002	Intermediate Macroeconomics I	3
ECON2003	Intermediate Macroeconomics II	3



MATHS ELECTIVES LISTING:

MATH2411	- Introduction to Abstract Algebra [3 credits]
MATH2430	- Linear Optimization [3 credits]
MATH2404	- Introduction to Probability Theory [3 credits]
STAT2001	- Inferential Statistics [3 credits]
MATH2407	- Stochastic Modelling [3 credits]
MATH2420	- Ordinary Differential Equations [3 credits]
MATH2421	- Fourier Series & Integral Transforms [3 credits]
MATH2403	- Multivariable Calculus [3 credits]
MATH2431	- Non-Linear Optimization [3 credits]
STAT3001	- Regression Analysis* [3 credits]
MATH3414	- Selected Topics in Operations Research* [3 credits]
MATH3402	- A Course on Metric Space & Topology* [3 credits]
MATH3421	- Partial Differential Equations* [3 credits]
MATH3422	- Mathematical Modelling* [3 credits]
MATH3424	- Numerical Methods* [3 credits]
MATH3403	- Some Topics in Functional Analyses* [3 credits]
MATH3401	- Introduction to the Theory of Integration* [3 credits]
MATH3411	- Advanced Abstract Algebra* [3 credits]
MATH3404	- Introduction to Differential Geometry with Maple* [3 credits]
STAT3002	- Time Series* [3 credits]

**courses beginning with MATH3--- or STAT--- are yet to be approved*



THE UNIVERSITY OF THE WEST
 INDIES
 MONA CAMPUS

Department of Mathematics

Information Sheet (Undergraduate) 2012/13 Academic Year

The Department of Mathematics currently offers 2 B.Sc. Options Mathematics with Education and Actuarial Science), one B.Sc. major (Mathematics and Modelling Processes), one B.Sc. major (Mathematics) and one minor (Mathematics).

Major in Mathematics and Modelling

A major in Mathematics and Modelling Processes requires passes in **MATH1141, MATH1142, MATH1151, MATH1152 (or M10A/MATH1140 and M10B/MATH1150) at Level I, and** a total of 64 credits from Part II these must include 32 credits from level II and 32 credits from level III courses, these must include the following courses:

MATH2401	Elements of Mathematical Analysis	3
MATH2410	A first course in Linear Algebra	3
MATH2421	Fourier Series & Integral Transforms	3
MATH2404	Introduction to Probability Theory	3
MATH2430	Linear Optimization	3
MATH2411	Introduction to Abstract Algebra	3
MATH2403	Multivariable Calculus	3
MATH2407	Stochastic Modelling	3
MATH2420	Ordinary Differential Equations	3
STAT2001	Inferential Statistics	3
MATH3400	Complex Variables	3

MATH3412	Advanced Linear Algebra	3
MATH3421	Partial Differential Equations	3
MATH3422	Mathematical Modelling	3
MATH3402	A course on Metric Space & Topology	3
MATH3424	Numerical Methods	3
MATH3423	Research Project	3

Electives – 9 credits from below:

MATH3401	Introduction to the Theory of Integration	3
MATH3411	Advanced Abstract Algebra	3
MATH3414	Selected Topics in Operations Research	3
STAT3001	Regression Analysis	3
MATH3403	Some topics in Functional Analysis	3
MATH3404	Introduction to Differential Geometry with Maple	3
STAT3002	Time Series	3

**courses beginning with MATH3—or STAT3---- are yet to be approved*

The Mathematics Major

A major in Mathematics requires passes in **MATH1141, MATH1142, MATH1151, MATH1152 (or M10A/MATH1140 and M10B/MATH1150) at Level 1.**

Level II

MATH2401	Elements of Mathematical Analysis	3
MATH2410	A First course in Linear Algebra	3
MATH2404	Introduction to Probability Theory	3
MATH2411	Introduction to Abstract Algebra	3
MATH2403	Multivariable Calculus	3
MATH2420	Ordinary Differential Equations	3

Level III

MATH3400	Complex Variables	3
MATH3412	Advanced Linear Algebra	3
MATH3402	A course on Metric Spaces & Topology	3

Plus any 3 Level 3 courses from the following electives:

MATH3414	Selected Topics in Operations Research	3
MATH3421	Partial Differential Equations	3
MATH3422	Mathematical Modelling	3
MATH3424	Numerical Methods	3
MATH3423	Research Project	3
STAT3001	Regression Analysis	3

MATH3403	Some Topics in Functional Analysis	3
MATH3401	Introduction to the Theory of Integration	3
MATH3411	Advanced Abstract Algebra	3
MATH3404	Introduction to Differential Geometry with Maple	3
STAT3002	Time Series	3

**courses beginning with MATH3—or STAT3---- are yet to be approved*

The Mathematics Minor

A minor in Mathematics requires passes in MATH1141, MATH1142, MATH1151, MATH1152 (or M10A/MATH1140 and M10B/MATH1150) at Level 1.

Level II

MATH2401	Elements of Mathematical Analysis	3
MATH2410	A First Course in Linear Algebra	3

Level III

MATH3400	Complex Variables	3
MATH 3412	Advanced Linear Algebra	3

Plus any two courses from the Math Elective List (see listing)

Mathematics with Education

Part I

Twenty-four (24) credits from **two** subject areas in the Pure and Applied Sciences divided equally between the two so as to provide the prerequisite for Part II courses. One of the subject areas must be Mathematics. Required courses are MATH1141, MATH1142, MATH1151, MATH1152 (or M10A/MATH1140 and M10B/MATH1150). Foundations of Education courses may also be taken with Part I courses from the Faculty of Pure and Applied Sciences.

Part II

Plus courses listed as core courses in the Mathematics Major.

MATH EDUCATION COURSES

Initial Teacher Training

Year	Semester I	Semester II
1	Core Education (9 credits) EDTL1020 (ED10T) Introduction to Teaching and Learning EDPS1003 (ED10C) Psychological Issues in the Classroom EDEA2305 (ED23E) Action Research in Educational Administration	Core Education (3 credits) EDTL1021 (ED10U) Planning For Teaching
2	Specialization (6 credits) EDMC2213 (ED22M) Children Learning Mathematics EDMC2214 (ED22N) The Nature and Scope of Mathematics Core education (3 credits) EDTK2025 (ED20Y) Introduction to Computer Technology in Education (optional) EDME2006 (ED20F) Classroom Testing and Evaluation (optional) EDCU2013 (ED20M) Introduction to Curriculum Studies (optional) EDCE3004 (ED30D) Educational Technology (optional)	Specialisation (3 credits) EDMC2216 (ED22P) Analysis and Teaching of Mathematics Practicum (3 credits) EDTL2021 (ED20U) School-based Experience 1
3	Specialisation (6 credits) EDMA3206 (ED32F) Investigations and Problem-Solving EDMA3217 (ED32Q) Pedagogical Issues in the Teaching of Mathematics Practicum (3 credits) EDTL3017 (ED30Q) School-based Experience	Specialisation (3 credits) EDME3205 (ED32E) Teaching Mathematics in Grades 10 and 11 Practicum (3 credits) EDRS3019 (ED30S) Report

Teacher Trained

Year	Semester I	Semester II
1	Specialization (6 credits) EDMC2213 (ED22M) Children Learning Mathematics EDMC2214 (ED22N) The Nature and Scope of Mathematics Core Education (6 credits) EDEA2305 (ED23E) Action Research in Educational Administration (compulsory)	Specialization (3 credits) EDMC2216 (ED22P) Analysis and Teaching of Mathematics
2	Specialization (6 credits) EDMA3206 (ED32F) Investigations and Problem-Solving EDMA3217 (ED32Q) Pedagogical Issues in the Teaching of Mathematics Core education (3 credits) EDTK2025 (ED20Y) Introduction to Computer Technology in Education (optional) EDME2006 (ED20F) Classroom Testing and Evaluation (optional) EDCU2013 (ED20M) Introduction to Curriculum Studies (optional) EDCE3004 (ED30D) Educational Technology (optional)	Specialization (3 credits) EDME3205 (ED32E) Teaching Mathematics in Grades 10 and 11
3	Practicum (6 credits) EDTL3020 (ED30T) Pre Practicum EDTL3021 (ED30U) Field Study	Practicum (3 credits) EDRS3019 (ED30S) Report

Mathematics with Economics

Students pursuing Mathematics (*major*) and Economics (*minor*) should have the following:

ECON2000, ECON2001, ECON2002 & ECON2003 plus one level III elective.