

Changes in Selected Module Information in relation to the Important Updates dated 5 March 2021

Modules listed in this document are the ones that may affect Cohorts before 2021/2022. Those that do not affect these cohorts will not be listed (as they would only be offered to Cohorts 2021/2022 and later).

Cohorts before 2021/2022 are strongly urged to complete required higher level modules before the code changes take effect, to avoid delaying graduation (the new codes are not included in their graduation requirements).

Current Module Code and Title	New Module Code and Title	Current Prerequisite (Preclusion, if relevant)	Revised Prerequisite	Revised Preclusion (if applicable)	Changes effective from
DSA3102 Essential Data Analysis Tools: Convex Optimisation	-	CS1010/CS1010E/CS1010S/CS1010X and MA1101R and (MA1104 or MA2104 or MA2311) (Preclusion: Nil)	CS1010/CS1010E/CS1010S/CS1010X and (MA1101R or MA2001) and (MA1104 or MA2104 or MA2311)	MA3236	AY2021/2022 Semester 1
MA1101R Linear Algebra I	MA2001 Linear Algebra I	GCE 'A' Level or H2 Mathematics or H2 Further Mathematics or MA1301 or MA1301FC or MA1301X (Preclusion: EG1401, EG1402, MA1101, MA1311, MA1506, MA1508, FOE students, YSC2232)	-	EG1401, EG1402, MA1506, MA1508, MA1508E, MA1513, FOE students, YSC2232, MA1101R	AY2021/2022 Semester 1
MA1102R Calculus	MA2002 Calculus	GCE 'A' Level or H2 Mathematics or H2 Further Mathematics or MA1301 or MA1301FC or MA1301X (Preclusion: EE1401, EE1461, EG1401, EG1402, CE1402, MA1102, MA1312, MA1505, MA1505C, MA1507, MA1521, CEC students, COM students who matriculated on and after 2002 (including poly 2002 intake), FOE students, YSC1216)	-	EE1401, EE1461, EG1401, EG1402, CE1402, MA1312, MA1505, MA1505C, MA1507, MA1521, CEC students, COM students who matriculated on and after 2002 (including poly 2002 intake), FOE students, YSC1216, MA1102R	AY2021/2022 Semester 1

Current Module Code and Title	New Module Code and Title	Current Prerequisite (Preclusion, if relevant)	Revised Prerequisite	Revised Preclusion (if applicable)	Changes effective from
MA1312 Calculus with Applications	-	AO-Level Mathematics or H1 Mathematics or MA1301 or MA1301FC or MA1301X (Preclusions: MA1102R, MA1505, MA1505C, MA1521, MA1511, FoE students)	-	MA1102R, MA1505, MA1505C, MA1521, MA1511, MA2002, FoE students	AY2021/2022 Semester 1
MA1505 Mathematics I	-	GCE 'A' Level Mathematics or H2 Mathematics or H2 Further Mathematics or MA1301 or MA1301X (Preclusions: Students reading a primary major in Mathematics/Applied Mathematics/Quantitative Finance/Data Science and Analytics, MA1102R, MA1312, MA1507, MA1511, MA1521, MA2311, MA2501, YSC1216)	-	Students reading a primary major in Mathematics/Applied Mathematics/Quantitative Finance/Data Science and Analytics, MA1102R, MA1312, MA1507, MA1511, MA1521, MA2002, MA2311, MA2501, YSC1216	AY2021/2022 Semester 1
MA1508E Linear Algebra for Engineering	-	GCE 'A' Level or H2 Mathematics or H2 Further Mathematics or equivalent (Preclusions: MA1101R, MA1311, MA1506, MA1508, MA1513, YSC2232)	-	MA1101R, MA1311, MA1506, MA1508, MA1513, MA2001, YSC2232	AY2021/2022 Semester 1
MA1511 Engineering Calculus	-	GCE 'A' level or H2 Mathematics or H2 Further Mathematics or equivalent (Preclusions: MA1102R, MA1312, MA1505, MA1506, MA1507, MA1521, MA2311, MA2501, EE1461, PC2134, PC2174, YSC1216)	-	MA1102R, MA1312, MA1505, MA1506, MA1507, MA1521, MA2002, MA2311, MA2501, EE1461, PC2134, PC2174, YSC1216	AY2021/2022 Semester 1
MA1513 Linear Algebra with Differential Equations	-	GCE 'A' Level or H2 Mathematics or H2 Further Mathematics or equivalent (Preclusions: MA1101R, MA1311, MA1506, MA1508, MA1508E, YSC2232)	-	MA1101R, MA1311, MA1506, MA1508, MA1508E, MA2001, YSC2232	AY2021/2022 Semester 1

Current Module Code and Title	New Module Code and Title	Current Prerequisite (Preclusion, if relevant)	Revised Prerequisite	Revised Preclusion (if applicable)	Changes effective from
MA1521 Calculus for Computing	-	GCE 'A' Level Mathematics or H2 Mathematics or H2 Further Mathematics or MA1301 or MA1301X (Preclusions: Students reading a primary major in Mathematics/Applied Mathematics/Quantitative Finance/Data Science and Analytics, MA1102R, MA1312, MA1505, MA1507, MA2501, FoE students, YSC1216)	-	Students reading a primary major in Mathematics/Applied Mathematics/Quantitative Finance/Data Science and Analytics, MA1102R, MA1312, MA1505, MA1507, MA2002, MA2501, FoE students, YSC1216	AY2021/2022 Semester 1
MA2101 Linear Algebra II	-	MA1101R or MA1506 or MA1508 or MA1508E or MA1513 (Preclusions: MA2101S, MA2101H, MA2201, MA2203, MQ2201, MQ2101, MQ2203)	MA1101R or MA2001 or MA1506 or MA1508 or MA1508E or MA1513	-	AY2021/2022 Semester 1
MA2101S Linear Algebra II (S)	-	(MA1101R or MA1506 or MA1508 or MA1508E or MA1513) and departmental approval (Preclusions: MA2101, MA2101H, MA2201, MA2203, MQ2201, MQ2101, MQ2203)	(MA1101R or MA2001 or MA1506 or MA1508 or MA1508E or MA1513) and departmental approval	-	AY2021/2022 Semester 1
MA2104 Multivariable Calculus	-	MA1102R or MA1505 or MA1511 or MA1521 (Preclusions: MA1104, MA2311, MA1507, MPE students, YSC2252)	MA1102R or MA2002 or MA1505 or MA1511 or MA1521	-	AY2021/2022 Semester 1
MA2108 Mathematical Analysis I	-	MA1102R or MA1505 or MA1511 or MA1505C or MA1507 or MA1521 (Preclusions: MA2108S, MA2311, YSC3206)	MA1102R or MA2002 or MA1505 or MA1511 or MA1505C or MA1507 or MA1521	-	AY2021/2022 Semester 1

Current Module Code and Title	New Module Code and Title	Current Prerequisite (Preclusion, if relevant)	Revised Prerequisite	Revised Preclusion (if applicable)	Changes effective from
MA2108S Mathematical Analysis I (S)	-	(MA1102R or MA1505 or MA1511 or MA1505C or MA1507 or MA1521) and departmental approval (Preclusions: MA2108, MA2206, MA2208, MA2221, MA2311, MQ2202, MQ2102, MA2203, CN2401, EE2401, ME2492)	(MA1102R or MA2002 or MA1505 or MA1511 or MA1505C or MA1507 or MA1521) and departmental approval	-	AY2021/2022 Semester 1
MA2213 Numerical Analysis I	-	(MA1102R or MA1312 or MA1507 or MA1505 or MA1521 or MA1511 or EG1402 or EE1401 or EE1461) and (MA1101R or MA1311 or MA1508 or MA1506 or MA1508E or MA1513) (Preclusions: CE2407, ME3291, CN3421, CN3411, CHE students (for breadth requirements), EVE students (for breadth requirements), DSA2102)	(MA1102R or MA2002 or MA1312 or MA1507 or MA1505 or MA1521 or MA1511 or EG1402 or EE1401 or EE1461) and (MA1101R or MA2001 or MA1311 or MA1508 or MA1506 or MA1508E or MA1513)	-	AY2021/2022 Semester 1
MA2214 Combinatorics and Graphs I	-	MA1100 or MA1101R or MA1311 or MA1506 or MA1508 or MA1508E or MA1513 or CS1231 or CS1231S	MA1100 or MA1101R or MA2001 or MA1311 or MA1506 or MA1508 or MA1508E or MA1513 or CS1231 or CS1231S	-	AY2021/2022 Semester 1
MA2216 Probability	MA2116 Probability	MA1102R or MA1312 or MA1507 or MA1505 or MA1505C or MA1511 or MA1521 (Preclusions: ST2131 (Cross-listing), ST2334, CE2407, YSC2243)	MA1102R or MA2002 or MA1312 or MA1507 or MA1505 or MA1505C or MA1511 or MA1521	ST2131 (Cross-listing), ST2334, CE2407, YSC2243, MA2216	AY2021/2022 Semester 1 (for change in prerequisites) / AY2022/2023 Semester 1 (for change in module code and preclusions)

Current Module Code and Title	New Module Code and Title	Current Prerequisite (Preclusion, if relevant)	Revised Prerequisite	Revised Preclusion (if applicable)	Changes effective from
MA2219 Introduction to Geometry	-	MA1100 or MA1101R or MA1506 or MA1508 or MA1508E or MA1513 or MA1102R or MA1505 or MA1507 or MA1511 or CS1231 or CS1231S	MA1100 or MA1101R or MA2001 or MA1506 or MA1508 or MA1508E or MA1513 or MA1102R or MA2002 or MA1505 or MA1507 or MA1511 or CS1231 or CS1231S	-	AY2021/2022 Semester 1
MA2288/ MA2289 Basic UROPS in Mathematics I/II	-	MA1101R and departmental approval	(MA1101R or MA2001) and departmental approval	-	AY2021/2022 Semester 1
MA2311 Techniques in Advanced Calculus	-	MA1102R or MA1312 or MA1421 or MA1521 (Preclusions: MA1104, MA2104, MA1505, MA1507, MA1511, MA2108, MA2108S, MPE students, Mathematics majors, Applied Mathematics majors, Quantitative Finance majors, second major in Mathematics, second major in Financial Mathematics)	MA1102R or MA2002 or MA1312 or MA1421 or MA1521	-	AY2021/2022 Semester 1
MA3110 Mathematical Analysis II	MA3210 Mathematical Analysis II	MA2108 or MA2108S (Preclusions: MA2118, MA2118H, MA2205, MQ3202, MA3110S, ST2236)	-	MA3110S, MA3110	AY2021/2022 Semester 1
<p>Revised description: This is a continuation of MA2108 Mathematical Analysis I. The objective of this module is to develop rigorously all the basic results in one- and multi-variable calculus. The emphasis is on logical rigour. Major topics: total and partial derivatives, Jacobian matrix, differentiable functions, chain rule, mean value theorem, l'Hopital's rule, Taylor's theorem, convergence of derivatives; Riemann and Darboux integrals, Fubini's theorem, convergence of integrals, improper integral of functions, fundamental theorem of calculus, integration by parts, differentiation under integral sign, change of variable formula.</p>					

Current Module Code and Title	New Module Code and Title	Current Prerequisite (Preclusion, if relevant)	Revised Prerequisite	Revised Preclusion (if applicable)	Changes effective from
MA3111 Complex Analysis I	MA3211 Complex Analysis I	(MA1104 or MA1507 or MA2104) and (MA3110 or MA3110S) (Preclusions: MA3111S, EE3002, MPE students)	(MA1507 or MA2104) and (MA2108 or MA2108S or MA3110 or MA3110S)	MA3111, MA3111S, MA3211S, MPE students	AY2021/2022 Semester 1
MA3111S Complex Analysis I (S)	MA3211S Complex Analysis I (S)	(MA1104 or MA1507 or MA2104) and (MA3110 or MA3110S) and departmental approval (Preclusions: MA3111, EE3002, MPE students)	(MA1507 or MA2104) and (MA2108 or MA2108S or MA3110 or MA3110S) and departmental approval	MA3111, MA3111S, MA3211, MPE students	AY2021/2022 Semester 1
MA3220 Ordinary Differential Equation	-	(MA1104 or MA2104 or MA1505 or MA1507 or MA1511 or MA1521) and (MA1101R or MA1311 or MA1506 or MA1508 or MA1508E or MA1513) and (MA2108 or MA2108S) (Preclusion: MA2312, PC2174)	(MA1104 or MA2104 or MA1505 or MA1507 or MA1511 or MA1521) and (MA1101R or MA2001 or MA1311 or MA1506 or MA1508 or MA1508E or MA1513) and (MA2108 or MA2108S)	-	AY2021/2022 Semester 1
MA3227 Numerical Analysis II	-	MA2213 and (MA1104 or MA2104 or MA1505 or MA1506 or MA1507 or MA1511 or MA2311) and (MA2216 or ST2131 or ST2334) (Preclusion: ME3291)	(MA2213 or DSA2102) and (MA1104 or MA2104 or MA1505 or MA1506 or MA1507 or MA1511 or MA2311) and (MA2216 or MA2116* or ST2131 or ST2334)	-	AY2021/2022 Semester 1 *AY2022/2023 Semester 1
MA3236 Non-Linear Programming	-	MA1104 or MA2104 or MA1506 or MA1507 or MA1505 or MA1511 or MA2311 (Preclusion: DSC3214, DSN3701)	MA1104 or MA2104 or MA1506 or MA1507 or MA1505 or MA1511 or MA2311	DSA3102, DSC3214, DSN3701	AY2021/2022 Semester 1

Current Module Code and Title	New Module Code and Title	Current Prerequisite (Preclusion, if relevant)	Revised Prerequisite	Revised Preclusion (if applicable)	Changes effective from
MA3238 Stochastic Processes I	-	(MA1101 or MA1101R or MA1311 or MA1508 or GM1302) and (ST2131 or MA2216) (Preclusion: ST3236.)	(MA1101 or MA2001 or MA1101R or MA1311 or MA1508 or GM1302) and (ST2131 or MA2216 or MA2116)	-	AY2021/2022 Semester 1
MA3252 Linear & Network Optimization	-	MA1101R or MA1306 or MA1311 or MA1508 or MA1506 or MA1508E or MA1513 (Preclusion: MQ2204, CS3252, IC2231, DSC3214, DSN3701, MA3235, BH3214, ISE students)	MA1101R or MA2001 or MA1306 or MA1311 or MA1508 or MA1506 or MA1508E or MA1513	-	AY2021/2022 Semester 1
MA3259 Mathematical Methods in Genomics	-	MA2216 or MA3233 or MA3501 or ST2131 or ST2334 or LSM2241	MA2216 or MA2116 or MA3233 or MA3501 or ST2131 or ST2334 or LSM2241	-	AY2022/2023 Semester 1
MA3269 Mathematical Finance I	QF2104 Fundamentals of Quantitative Finance	CS1010 or CS1010E or CS1010S or CS1010FC or IT1006 or CS1101 or CS1101C or CS1101S or IT1002) and (ST2131 or ST2334 or MA2216) (Preclusion: QF2101)	CS1010 or CS1010E or CS1010S or CS1010FC or IT1006 or CS1101 or CS1101C or CS1101S or IT1002) and (ST2131 or ST2334 or MA2216 or MA2116 or EC2303 or MA2301) and QF1100	QF2101 and MA3269	AY2022/2023 AY2023/2024 Semester 1
MA4229 Approximation Theory	MA4229 Fourier Analysis and Approximation	(MA2101 or MA2101S) and (MA3110 or MA3110S)	(MA2101 or MA2101S) and (MA3110 or MA3110S or MA2108 or MA2108S)	MA3266	AY2021/2022 Semester 1
<p>Revised description: Fourier analysis occupies a central position in both pure and applied mathematics. This module introduces some of the main ideas of Fourier analysis while trying to keep the technical prerequisites to a minimum. In particular, Lebesgue integration is not required. Selected applications to approximation problems are presented. Main topics: Fourier series, summability, pointwise and mean square convergence of Fourier series. Fejer's Theorem, localization principle and Dini's test. Applications: Weierstrass Approximation Theorem, orthogonal polynomials, mean square approximation, best uniform polynomial approximation</p>					

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MA4260 Stochastic Operations Research	-	(MA2216 or ST2131 or ST2334) and (MA3236 or MA3252 or DSC3214 or DSN3701) (Preclusion: ISE students)	(MA2216 or MA2116 or ST2131 or ST2334) and (MA3236 or MA3252 or DSA3102 or DSC3214 or DSN3701)	-	AY2022/2023 Semester 1 AY2021/2022 Semester 1
MA4264 Game Theory	-	(MA3236 or MA3252 or DSC3214 or DSN3701) and (MA2216 or ST2131 or ST2334) (Preclusion: EC3312)	(MA3236 or MA3252 or DSA3102 or DSC3214 or DSN3701) and (MA2216 or MA2116 or ST2131 or ST2334)	-	AY2022/2023 Semester 1 AY2021/2022 Semester 1
MA4268 Mathematics for Visual Data Processing	-	MA2213	MA2213 or DSA2102	-	AY2021/2022 Semester 1
MA4269 Mathematical Finance II	QF4103 Mathematical Models of Financial Derivatives	(MA1104 or MA1506 or MA1507 or MA2104 or MA2311) and MA3269	(MA1104 or MA1506 or MA1507 or MA2104 or MA2311) and (MA3269 or QF2104)	MA4269	AY2022/ 2023 Semester 1
MA4270 Data Modelling and Computation	-	(MA2213 or DSA2102) and (MA2216 or ST2131 or ST2334) (Preclusion: CS5339, DSA5102)	(MA2213 or DSA2102) and (MA2216 or MA2116 or ST2131 or ST2334)	-	AY2022/ 2023 Semester 1
QF3101 Investment Instruments: Theory and Computation	QF3101 Investment Instrument and Risk Management	(MA1104 or MA2104 or MA1505 or MA1507 or MA1511) and (MA2222 or QF2101 or MA3269)	(MA1104 or MA2104 or MA1505 or MA1507 or MA1511 or MA2311) and (MA2222 or QF2101 or MA3269 or QF2104)	-	AY2021/ 2022 Semester 1