

Faculty of Science and Engineering Summary of Degree Requirements BSc and BSc (Hons)

The following is *not* intended to be a complete list of the many requirements of which you should be aware. For that, see the main York Calendar or the FSE Calendar.

All candidates must complete the following (in addition to 1000-level MATH requirements):

- (Lab requirements) 12 credits chosen from (BIOL 1010 6.0 or BIOL 1410 6.0), (CHEM 1000 3.0 and CHEM 1001 3.0), (EATS 1010 3.0 and EATS 1011 3.0), (MATH 2041+2042)¹, (PHYS 1410 6.0 or PHYS 1010 6.0)
- 12 credits of “General Education” courses — at least 3 credits in each of two approved areas outside Science. See Section IV of the FSE Calendar.
- at least 3, and in some cases 6, CSE credits — see individual program requirements on the next three pages.

Degree Program Selection:

Each student must choose a departmental program (see the following seven pages and also the section “Programs” near the front of this minicalendar), in which to complete one of the following degrees:

Specialized Honours Program	Honours Double Major ² Program	Bachelor Program
Honours Major/Minor Program	Honours Major Program	

Total Credit Requirements:

<p>Bachelor Program</p> <p>At least 90 credits must be completed.</p> <p>At least 66 must be in SC courses, of which at least 24 must be at the 1000 level.</p> <p>At least 18 must be in courses at the 3000 level or higher.</p>	<p>Honours Program</p> <p>At least 120 credits must be completed.</p> <p>At least 90 must be in SC courses, of which at least 24 must be at the 1000 level.</p> <p>At least 42 must be in courses at the 3000 level or higher.</p>
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GPA Requirements for Bachelor Programs:

For students admitted to York University for 2001/2002 and subsequent years, the Senate of York University will require a minimum cumulative credit-weighted grade-point average (c.c.w.g.p.a.), computed over *all* courses, of 4.0, for eligibility to graduate in an undergraduate Bachelor program.

GPA Requirements for Honours Programs:

- To “declare”:* At least 24 credits passed, and a minimum c.c.w.g.p.a. of at least 5.0³ over all courses completed.
- To proceed:* Each year, a c.c.w.g.p.a. of at least 5.0³ over all courses.
- To graduate:* For students admitted to York University for 1999/2000 and subsequent years, a minimum c.c.w.g.p.a., computed over *all* courses, of 5.0³ is required, for eligibility to graduate in an undergraduate Honours degree program.
- Note:* A maximum of 6 credits from 1000-level College courses may be counted towards a BSc or BSc (Hons) degree.

“In-department” and “in-Faculty” credit are important, and potentially complex, issues. Any student concerned about these should consult with an advisor.

¹ If MATH 2041 + 2042 is chosen, the student must also ensure that (s)he takes a total of at least 24 1000-level science (SC) credits. These 24 may NOT include any of: CHEM 1500, CHEM 1520, MATH 1500, MATH 1510, MATH 1515, PHYS 1510, nor any NATS courses.

² Choose two different Honours Majors (e.g., Mathematics and Physics, or Applied Mathematics and Statistics).

³ Honours Double Major with Biology also requires 6.0 over SC courses.

Mathematics BA and BA (Hons) Programs (Pre FW 08/09)

Important: For a summary of Faculty degree requirements, see page 34. See page 39 for Applied Mathematics BA programs.

Honours Core:							
MATH 1000 3.0	<input type="checkbox"/>	MATH 1010 3.0 ¹	<input type="checkbox"/>	MATH 2310 3.0	<input type="checkbox"/>		
One of: MATH 1019 3.0, MATH 1090 3.0, MATH 1190 3.0 ² , MATH 2090 3.0, MATH 2320 3.0							
MATH 1021 3.0 ³	<input type="checkbox"/>	MATH 2022 3.0 ³	<input type="checkbox"/>	MATH 3010 3.0	<input type="checkbox"/>	MATH 3210 3.0	<input type="checkbox"/>
Either MATH 3020 6.0 or (MATH 3131 3.0+ 3132 3.0)							
6 credits chosen from the MATH courses:							
4000 6.0/3.0	4010 6.0	4020 6.0	4030 3.0	4080 6.0	4110 3.0	4120 3.0	
4130 3.0	4140 3.0	4150 3.0	4160 3.0	4170 6.0	4210 3.0	4230 3.0	
4250 6.0	4280 3.0	4290 3.0	4300 3.0/6.0	4430 3.0	4431 3.0	4630 3.0	
4730 3.0							

Specialized Honours:	Honours Core (above) completed	<input type="checkbox"/>	
	30 more MATH credits (without second digit "5"), six of which must be at the 4000 level.		
	Note: MATH 4010 or MATH 4020 must be taken, among the twelve 4000-level credits mentioned above.		

Honours Major, Honours Double Major:	Honours Core (above) completed	<input type="checkbox"/>	6 more MATH credits (without second digit "5") at the 4000 level	<input type="checkbox"/>
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Bachelor Program, Honours Minor⁷:	MATH 1300 3.0 ⁴	<input type="checkbox"/>	MATH 1310 3.0 ⁴	<input type="checkbox"/>	MATH 2310 3.0	<input type="checkbox"/>	
	MATH 1021 3.0 ⁵	<input type="checkbox"/>	MATH 2022 3.0 ⁶	<input type="checkbox"/>			
	One of: MATH 1090 3.0, MATH 1190 3.0 ² , MATH 2090 3.0, MATH 2320 3.0.						
	12 more MATH credits (without second digit "5"), at the 3000 level or higher.						

¹ Courses from the sequence MATH 1300/1310/2310 or the sequence MATH 1013/1014/2015 may be substituted for the corresponding courses in the sequence MATH 1000/1010/2310. BUT: Any student who has not completed MATH 1010 3.0 will have to take MATH 3110 3.0 over and above the other program requirements.

² Note that MATH 1190 may not be taken for degree credit if any 3000- or higher-level MATH course has been passed.

³ Or MATH 2221 3.0 + MATH 2222 3.0 with at least an A grade in both. If grade in either is less than A, student must take TWO of: MATH 1090, 1190, 2090, 2320 or equivalent.

⁴ Or MATH 1000/1010.

⁵ Or MATH 2021 or 2221 taken before FW 01.

⁶ Or MATH 2222 taken before FW 01. ⁷ Note that NO 4000-level MATH credits are required in Honours Minor.

Mathematics for Commerce BA and BA (Hons) Programs (Pre FW 08/09)

Mathematics for Commerce may not be taken jointly with another subject in a Double Major honours program.

New (as of 1999/2000) is a Minor in Mathematics for Commerce (see below).

For a summary of Faculty degree requirements, see page 34. In particular, see footnote 6 below.

Common Core (Honours Actuarial, Honours Operations Research):			
MATH 1300 3.0 + 1310 3.0	<input type="checkbox"/>	MATH 1131 3.0 ¹ + 2030 3.0 + 2131 3.0	<input type="checkbox"/>
CSE 1520 3.0 ² + 1530 3.0 ²	<input type="checkbox"/>	MATH 1021 3.0 ³ + 2022 3.0 ⁴	<input type="checkbox"/>
MATH 2310 3.0	<input type="checkbox"/>	MATH 3330 3.0 ⁵	<input type="checkbox"/>

Honours Actuarial Stream:	Common Core (above) completed	<input type="checkbox"/>	MATH 2280 3.0	<input type="checkbox"/>
	MATH 3131 3.0	<input type="checkbox"/>	MATH 3280 6.0	<input type="checkbox"/>
	MATH 4280 3.0	<input type="checkbox"/>	MATH 4430 3.0 or MATH 4431 3.0	<input type="checkbox"/>
	6 more 4000-level MATH credits ⁶	<input type="checkbox"/>		

Honours Operations Research Stream:	Common Core (above) completed	<input type="checkbox"/>	MATH 3034 3.0 ⁷ or MATH 3430 3.0	<input type="checkbox"/>
	MATH 3170 6.0	<input type="checkbox"/>	MATH 4170 6.0	<input type="checkbox"/>
	6 more 4000-level MATH credits ⁶	<input type="checkbox"/>		

Courses required for the Honours Minor:			
CSE 1520 3.0	<input type="checkbox"/>	MATH 1550 6.0 or (MATH 1530 3.0 + 1540 3.0)	<input type="checkbox"/>
MATH 1021 3.0 ³	<input type="checkbox"/>	MATH 2560 3.0 + 2570 3.0	<input type="checkbox"/>
MATH 3330 3.0	<input type="checkbox"/>	One of: MATH 3034 3.0 ⁷ or 3430 3.0	<input type="checkbox"/>

Courses required for the Bachelor Program:			
CSE 1520 3.0 + 1530 3.0	<input type="checkbox"/>	MATH 1550 6.0 or (MATH 1530 3.0 + 1540 3.0)	<input type="checkbox"/>
MATH 2221 3.0 + 2222 3.0	<input type="checkbox"/>	MATH 2560 3.0 + 2570 3.0	<input type="checkbox"/>
MATH 3330 3.0 ⁵	<input type="checkbox"/>	One of: MATH 3034 3.0 ⁷ or 3430 3.0	<input type="checkbox"/>

¹ MATH 1131 can be replaced by the pair of courses MATH 2560 and MATH 2570.

² Or CSE 1540 3.0, or six credits from any other computer science course.

³ Or MATH 2221 taken before FW 01.

⁴ Or MATH 2222 taken before FW 01.

⁵ Or MATH 3033 3.0 or MATH 3230 3.0.

⁶ Note that, in any BA Honours program three full courses at the 4000 level are required. Students must plan ahead (even from first year) to ensure that they have the prerequisites for six *more* credits at the 4000 level, in MATH or some other subject. One possibility is ECON 4500 3.0 + 4510 3.0, which has only ECON 1000/1010 as prerequisite.

⁷ Or MATH 3230 3.0.

⁸ This may be replaced by MATH 2280 3.0 plus 3 more MATH credits, at the 2000 level or higher, or may be replaced by MATH 1581 3.0 + MATH 2581 3.0.

Statistics BA Programs (Pre FW 08/09)

Important: For a summary of Faculty degree requirements, see page 34.

List A (Specialized Honours, Honours Major, Honours Double Major Core):

MATH 1000 3.0 + 1010 3.0 ¹	<input type="checkbox"/>	MATH 1131 3.0+2030 3.0+2131 3.0	<input type="checkbox"/>	MATH 1021 3.0+2022 3.0 ¹	<input type="checkbox"/>
MATH 2310 3.0 ²	<input type="checkbox"/>	MATH 3033 3.0 or MATH 3330 3.0	<input type="checkbox"/>	MATH 3131 3.0+3132 3.0	<input type="checkbox"/>

Specialized Honours:

List A completed	<input type="checkbox"/>	MATH 3010 3.0	<input type="checkbox"/>	
MATH 3034 3.0	<input type="checkbox"/>	MATH 3210 3.0	<input type="checkbox"/>	MATH 3430 3.0 <input type="checkbox"/>
12 credits of 4000-level AS/MATH courses with third digit "3".				
9 more credits of AS/MATH courses without second digit "5".				

Honours Major, Honours Double Major:

List A completed ¹	<input type="checkbox"/>	
Either MATH 3034 3.0 or MATH 3430 3.0	<input type="checkbox"/>	
12 credits of 4000-level AS/MATH courses with third digit "3".		

List B (Core for Honours Minor or Bachelor Program):

First-year calculus (6 credits, without second digit "5").

MATH 1131 3.0 ⁴ + 2030 3.0 + 2131 3.0	<input type="checkbox"/>	MATH 2221 3.0 + 2222 3.0 ³	<input type="checkbox"/>
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Honours Minor:

List B completed	<input type="checkbox"/>	
9 more credits of AS/MATH courses with third digit "3", at the 2000 level or higher		

Bachelor Program:

List B completed	<input type="checkbox"/>	MATH 2310 3.0 ²	<input type="checkbox"/>	6 more credits of AS/MATH courses at 3000 or 4000 level; at least 3 of those credits from a third digit "3" course.
MATH 3033 3.0 or MATH 3330 3.0	<input type="checkbox"/>	MATH 3131 3.0	<input type="checkbox"/>	

¹ In Honours Major or Honours Double Major only, it is permitted but not recommended to make the following substitutions: MATH 1300 + 1310 or MATH 1013 + 1014 for MATH 1000 + 1010. It is also permitted to substitute MATH 1025 or MATH 2221 for MATH 1021, and/or MATH 2222 for MATH 2022.

² A student doing Honours Major or Honours Double Major or a Bachelor program can replace MATH 2310 by MATH 2015 3.0.

³ A student who may wish subsequently to pursue a Specialized Honours degree should consider taking MATH 1021 + 2022 instead.

⁴ Students doing a major in a discipline (such as economics) that require a course (such as ECON 2500) which is a course degree exclusion with MATH 1131 will be required to take another MATH course to satisfy the 3-degree requirement for the minor in statistics. This MATH course must be in the area of statistics and must be approved by the Program Director of statistics.

Applied Mathematics BA, BA (Hons), BSc, BSc (Hons) Programs (Pre FW 08/09)

Important: For a summary of Faculty degree requirements, see page 34 for BA, BA (Hons) and page 35 for BSc, BSc (Hons).

Program Core:						
Year 1: ¹	MATH 1013 3.0 ²	<input type="checkbox"/>	MATH 1016 1.0	<input type="checkbox"/>	CSE 1540 3.0*	<input type="checkbox"/>
	MATH 1014 3.0 ²	<input type="checkbox"/>	MATH 1017 1.0	<input type="checkbox"/>	MATH 1021 3.0 ³	<input type="checkbox"/>
Year 2:	MATH 2015 3.0	<input type="checkbox"/>	MATH 2018 1.0	<input type="checkbox"/>	MATH 2041 3.0	<input type="checkbox"/>
	MATH 2270 3.0	<input type="checkbox"/>	<i>*CSE 2031 3.0 is acceptable in place of CSE 1540.</i>			
Year 3:	MATH 3241 3.0	<input type="checkbox"/>				

Note: See also the “areas of concentration” listed on page 8, when choosing upper-year courses.

	Program Core completed	<input type="checkbox"/>	MATH 2022 3.0 ³	<input type="checkbox"/>	MATH 2030 3.0	<input type="checkbox"/>
BA (Hons) or BSc (Hons) Specialized Honours:	If MATH 1010 has not been completed: MATH 3110 3.0 <input type="checkbox"/>					
	MATH 3210 3.0	<input type="checkbox"/>	MATH 3242 3.0	<input type="checkbox"/>	MATH 3410 3.0	<input type="checkbox"/>
	21 more credits selected from MATH courses (without second digit “5”) at the 3000 level or higher, including: MATH 3260 or 3170, and at least 12 credits at the 4000 level.					

BA Honours Major or Double Major or BSc Honours Major or Double Major:	Program Core completed	<input type="checkbox"/>	MATH 3242 3.0 or MATH 3170 6.0	<input type="checkbox"/>		
and 12 credits at the 4000 level, selected from MATH courses without second digit “5”. <i>These are the MATH requirements for BA or BSc Honours Double Major (formerly called Combined Honours).</i>						

BA or BSc:	Program Core completed	<input type="checkbox"/>	MATH 2022 3.0 ³ or 2030 3.0 or 2320 3.0	<input type="checkbox"/>		
and 12 credits selected from MATH courses (without second digit “5”) at the 3000 level or higher.						

BA (Hons) or BSc (Hons) Honours Minor (with another Major subject):	MATH 1013 3.0+1014 3.0 ⁴	<input type="checkbox"/>	CSE 1540 3.0	<input type="checkbox"/>	MATH 1021 3.0 ³	<input type="checkbox"/>
	Two of: MATH 2041 3.0, 2022 3.0 ³ , 2270 3.0			<input type="checkbox"/>	MATH 2015 3.0	<input type="checkbox"/>
and 9 more credits, including at least one of MATH 3170 6.0, 3241 3.0 or 3260 3.0, and the remaining credits selected from MATH courses without second digit “5” at the 3000 level or higher.						

¹ The year levels merely indicate years in which the courses are normally taken.

² Or MATH 1000/1010 taken before FW 98.

³ MATH 1025 taken before FW 2001 may be substituted for MATH 1021. MATH 2222 taken before FW 2001 may be substituted for MATH 2022.

⁴ Or MATH 1000 + 1010, or MATH 1300 + 1310.

Faculty of Science and Engineering
Computational Mathematics Specialized Honours BSc
(Pre FW 08/09)

Important: For a summary of Faculty degree requirements, see page 35.

The only degree currently offered in Computational Mathematics is Specialized Honours BSc. Students must complete the core courses below, and choose one of the three areas of concentration appearing further down this page.

Core Courses:	CSE 1020 3.0+1030 3.0+2031 3.0	<input type="checkbox"/>	<input type="checkbox"/>	MATH 2041 3.0	<input type="checkbox"/>
	MATH 1013 3.0+1014 3.0+2015 3.0 or equivalents	<input type="checkbox"/>	<input type="checkbox"/>	MATH 1021 3.0+2022 3.0	<input type="checkbox"/>
	MATH 2030 3.0	<input type="checkbox"/>		MATH 1131 3.0	<input type="checkbox"/>
	MATH (1016 1.0+1017 1.0+2018 1.0) or MATH 1190 3.0 or MATH 2131 3.0				
	MATH 3090 3.0	<input type="checkbox"/>		MATH 4090 3.0	<input type="checkbox"/>

Applied and Industrial Mathematics:	Core courses (above) completed				<input type="checkbox"/>
	MATH 2270 3.0 ¹	<input type="checkbox"/>	MATH 3241 3.0 ¹	<input type="checkbox"/>	MATH 3242 3.0 <input type="checkbox"/>
	MATH 2042 3.0	<input type="checkbox"/>	MATH 4141 3.0	<input type="checkbox"/>	MATH 4142 3.0 <input type="checkbox"/>

Financial Mathematics:	Core courses (above) completed				<input type="checkbox"/>
	ECON 1000 3.0	<input type="checkbox"/>	ECON 1010 3.0	<input type="checkbox"/>	MATH 2280 3.0 <input type="checkbox"/>
	MATH 3170 6.0	<input type="checkbox"/>	MATH 4143 3.0 ²	<input type="checkbox"/>	

Actuarial Mathematics:	Core courses (above) completed				<input type="checkbox"/>
	MATH 3033 3.0 or MATH 3330 3.0 ²			MATH 4143 3.0 ²	<input type="checkbox"/>
	MATH 2280 3.0	<input type="checkbox"/>	MATH 3280 6.0	<input type="checkbox"/>	MATH 4280 3.0 <input type="checkbox"/>
	MATH 4430 3.0 or MATH 4431 3.0			<input type="checkbox"/>	

Students who do not maintain a 5.0 g.p.a. can opt to switch to a Bachelor program in (say) Applied Mathematics.

¹ A student who chooses these courses could later easily opt to pursue a BSc in Applied Mathematics as an alternative to Computational Mathematics.

² A student choosing these courses would be in good position to pursue a BSc in Statistics as an alternative to Computational Mathematics.

Faculty of Science and Engineering Mathematics BSc and BSc (Hons) Programs (Pre FW 08/09)

Important: For a summary of Faculty degree requirements, see page 35.

Computing Requirement:	CSE 1520 3.0 or equivalent	<input type="checkbox"/>	CSE 1530 3.0 or MATH 2041 3.0 or equivalent	<input type="checkbox"/>
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Honours Core:						
MATH 1000 3.0	<input type="checkbox"/>	MATH 1010 3.0 ¹	<input type="checkbox"/>	MATH 2310 3.0	<input type="checkbox"/>	
One of: MATH 1019 3.0, MATH 1090 3.0, MATH 1190 3.0 ² , MATH 2090 3.0, MATH 2320 3.0					<input style="width: 100px;" type="text"/>	
MATH 1021 3.0 ³	<input type="checkbox"/>	MATH 2022 3.0 ³	<input type="checkbox"/>	MATH 3010 3.0	<input type="checkbox"/>	MATH 3210 3.0 <input type="checkbox"/>
Either MATH 3020 6.0 or (MATH 3131 3.0 + 3132 3.0)				<input style="width: 150px;" type="text"/>		
6 credits	<input style="width: 150px;" type="text"/>		chosen from the MATH courses:			
4000 6.0/3.0	4010 6.0	4020 6.0	4030 3.0	4080 6.0	4110 3.0	4120 3.0
4130 3.0	4140 3.0	4150 3.0	4160 3.0	4170 6.0	4210 3.0	4230 3.0
4250 6.0	4280 3.0	4290 3.0	4300 3.0/6.0	4430 3.0	4431 3.0	4630 3.0
4730 3.0						

Specialized Honours:	Computing Requirement (above)	<input type="checkbox"/>	Honours Core (above) completed	<input type="checkbox"/>
30 more MATH credits (without second digit "5"), of which 6 must be at the 4000 level.				
<input style="width: 300px;" type="text"/>				
Note: Either MATH 4010 or MATH 4020 must be taken, among the 12 4000-level credits mentioned above.				

Honours Major⁵, Honours Double Major:	Computing Requirement (above)	<input type="checkbox"/>	Honours Core (above) completed	<input type="checkbox"/>
6 more MATH credits (without second digit "5") at 4000 level.				

Bachelor Program, Honours Minor⁵:	Computing Requirement (above) — for Bachelor Program only — not required for Honours Minor				<input type="checkbox"/>
MATH 1300 3.0 ⁴	<input type="checkbox"/>	MATH 1310 3.0 ⁴	<input type="checkbox"/>	MATH 2310 3.0	<input type="checkbox"/>
MATH 1021 3.0 ⁶	<input type="checkbox"/>	MATH 2022 3.0 ⁷	<input type="checkbox"/>		
One of: MATH 1090 3.0, MATH 1190 3.0 ² , MATH 2090 3.0, MATH 2320 3.0					<input style="width: 180px;" type="text"/>
12 more MATH credits (without second digit "5"), at the 3000 level or higher					<input style="width: 180px;" type="text"/>

¹ See footnote 1 on page 37.

² See footnote 2 on page 37.

³ Or MATH 2221 3.0 + MATH 2222 3.0 with at least an A grade in both. If grade in either is less than A, student must take TWO of: MATH 1090, 1190, 2090, 2320 or equivalent.

⁴ Or MATH 1000/1010. ⁵ A BSc Honours Major can be obtained as a stand-alone degree, or as a part of either an Honours Double Major or an Honours Major/Minor program. Note that no 4000-level MATH credits are required in Honours Minor. ⁶ Or MATH 2021 or 2221 taken before FW 01. ⁷ Or MATH 2222 taken before FW 01.

Faculty of Science and Engineering
International Dual Degree Mathematics and Statistics
BSc, BSc (Specialized Hons) Programs (Pre FW 08/09)

Important: For a summary of Faculty degree requirements, see page 35.

Note: This program requires a *Specified General Education Requirement*. See box at the bottom of this page.

Program Core:						
24 SC credits:	SC/CSE 1520 3.0	<input type="checkbox"/>	SC/CSE 1540 3.0	<input type="checkbox"/>	SC/MATH 1000 3.0 or SC/MATH 1013 3.0	<input type="checkbox"/>
	SC/MATH 1010 3.0 or SC/MATH 1014 3.0	<input type="checkbox"/>	SC/MATH 1021 3.0	<input type="checkbox"/>	SC/MATH 1190 3.0 ¹	<input type="checkbox"/>
	SC/PHYS 1410 6.0 or SC/PHYS 1010 6.0	<input type="checkbox"/>				
27 credits 2000-level MATH:	SC/MATH 2022 3.0	<input type="checkbox"/>	SC/MATH 2030 3.0	<input type="checkbox"/>	SC/MATH 2041 3.0	<input type="checkbox"/>
	SC/MATH 2042 3.0	<input type="checkbox"/>	SC/MATH 2131 3.0	<input type="checkbox"/>	SC/MATH 2270 3.0	<input type="checkbox"/>
	SC/MATH 2280 3.0	<input type="checkbox"/>	SC/MATH 2310 3.0 or SC/MATH 2015 3.0	<input type="checkbox"/>	SC/MATH 2320 3.0	<input type="checkbox"/>
at least 21 credits 3000/ 4000 level MATH	SC/MATH 3170 6.0	<input type="checkbox"/>	SC/MATH 3241 3.0	<input type="checkbox"/>	SC/MATH 3242 3.0	<input type="checkbox"/>
	SC/MATH 3271 3.0	<input type="checkbox"/>	SC/MATH 3410 3.0	<input type="checkbox"/>	SC/MATH 4430 3.0 or SC/MATH 4431 3.0	<input type="checkbox"/>

BSc Specialized Honours:	Program Core completed	<input type="checkbox"/>				
	36 <i>more</i> credits, of which 18 must be SC credits and 6 must be MATH credits at the 4000 level. At least 21 must be 3000 level courses or higher.					

BSc:	Program Core completed	<input type="checkbox"/>	6 more credits	<input type="checkbox"/>		
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In lieu of the Faculty's General Education Requirement, students of this program MUST take:	AP/IT 1000 6.0 ²	<input type="checkbox"/>	Lingua e Cultura Italiana 3.0 (offered by the University of L'Aquila)	<input type="checkbox"/>		
	Any Faculty-approved General Education course 3.0	<input type="checkbox"/>				

¹ SC/MATH 1190 3.0 may be replaced by SC/MATH 1090 3.0, in which case SC/MATH 2320 3.0 must be replaced by another 2000- or 3000-level SC/MATH courses not already contained in the program core, preferably SC/MATH 3260 3.0.

² Students are encouraged to take a higher-level Italian language course, such as AP/IT 2000 6.0.

Faculty of Science and Engineering Statistics BSc and BSc (Hons) Programs (Pre FW 08/09)

Important: For a summary of Faculty degree requirements, see page 35.

Requirements for the Honours Major/Minor BSc Program in Statistics appear on the next page.

Specialized Honours:	CSE 1020 3.0+1030 3.0, or CSE 1520 3.0+1530 3.0, or CSE 1540 3.0					<input style="width: 100%; height: 20px;" type="text"/>
	MATH 1000 3.0+1010 3.0	<input type="checkbox"/>	MATH 1131 3.0+2030 3.0+2131 3.0	<input type="checkbox"/>	<input type="checkbox"/>	
	MATH 1021 3.0 + 2022 3.0	<input type="checkbox"/>	MATH 2310 3.0+3010 3.0		<input type="checkbox"/>	
	MATH 3131 3.0 + 3132 3.0	<input type="checkbox"/>	MATH 3033 3.0 or MATH 3330 3.0		<input type="checkbox"/>	
	MATH 3210 3.0	<input type="checkbox"/>	MATH 3430 3.0+3034 3.0		<input type="checkbox"/>	
	12 credits from 4000-level SC/MATH courses with third digit "3"					<input style="width: 100%; height: 20px;" type="text"/>
	9 more credits from SC/MATH courses (without second digit "5")					<input style="width: 100%; height: 20px;" type="text"/>

Core for Honours Double Major¹, and Bachelor Program:	CSE 1020 3.0+1030 3.0, or CSE 1520 3.0+1530 3.0, or CSE 1540 3.0, or equivalents					<input style="width: 100%; height: 20px;" type="text"/>
	First-year calculus (6 credits, without second digit "5")					<input style="width: 100%; height: 20px;" type="text"/>
	MATH 1131 3.0+2030 3.0+2131 3.0	<input type="checkbox"/>	MATH 2310 3.0 ²		<input type="checkbox"/>	
	MATH 2221 3.0+2222 3.0 ³ (but MATH 1021 + 2022 is preferred)	<input type="checkbox"/>	MATH 3131 3.0		<input type="checkbox"/>	
	MATH 3033 3.0 or MATH 3330 3.0	<input type="checkbox"/>				

Honours Double Major:¹	Above Core courses completed	<input type="checkbox"/>
	9 more credits from 3000- or 4000-level SC/MATH courses with third digit "3" (excluding MATH 3230 3.0)	
	Note: MATH 3132 3.0 is recommended for any student considering Graduate Studies in a Statistics Program.	

Bachelor Program:	Above Core courses completed	<input type="checkbox"/>
	At least 3 more credits from 3000- or 4000-level SC/MATH courses with third digit "3"	

See next page for Statistics BSc Honours Major/Minor Programs.

¹ Called "Combined Honours" before 1999/2000. For these degrees, careful planning is necessary to ensure that MATH and *other* prerequisites are met.

² This may be replaced by MATH 2015 3.0.

³ This pair may be replaced by MATH 1025 + 2222 or by MATH 1021 + 2022 (preferred).

Faculty of Science and Engineering
Statistics BSc (Hons) Programs (Pre FW 08/09)
(continued)

Honours Major, Honours Major (only when taken as part of a Major/Minor):	CSE 1520 3.0+1530 3.0 (or CSE 1540 3.0, or CSE 1020 3.0+1030 3.0, or equivalents)		<input style="width: 100%; height: 20px;" type="text"/>	
	MATH 1000 3.0+1010 3.0 ¹	<input type="checkbox"/> <input type="checkbox"/>	MATH 1131 3.0+2030 3.0+2131 3.0	<input type="checkbox"/> <input type="checkbox"/>
	MATH 2015 3.0 or 2310 3.0	<input type="checkbox"/>	MATH 1021 3.0+2022 3.0 ¹	<input type="checkbox"/>
	MATH 3034 3.0 or 3430 3.0	<input type="checkbox"/>	MATH 3033 3.0 or MATH 3330 3.0	<input type="checkbox"/>
	MATH 3131 3.0+3132 3.0	<input type="checkbox"/> <input type="checkbox"/>		
12 credits of 4000-level SC/MATH courses with third digit "3"				

Honours Minor:	First-year calculus (6 credits, without second digit "5")		<input style="width: 100%; height: 20px;" type="text"/>	
	MATH 1131 3.0+2030 3.0+2131 3.0	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	MATH 2221 3.0+2222 3.0 ²	<input type="checkbox"/> <input type="checkbox"/>
	(but MATH 1021 + 2022 is preferred)			
9 more credits of SC/MATH courses with third digit "3", at the 2000-level or higher			<input style="width: 100%; height: 20px;" type="text"/>	

¹ These substitutes will be accepted, but are not recommended:

For MATH 1000 + 1010: (MATH 1013 + 1014), or (MATH 1300 + 1310).

These substitutes will also be accepted, but are not recommended:

For MATH 1021 + 2022: (MATH 1025 + 2222), or (MATH 2221 + 2222).

² A student who may wish subsequently to pursue a Specialized Honours degree should consider taking MATH 1021+2022 instead.

Faculty of Science and Engineering Mathematics for Education BSc (Hons) Programs (Pre FW 08/09)

Important: For a summary of Faculty degree requirements, see page 35.

Note: This may be taken as a double major, or as a minor with a program in the Faculty of Arts.

Program Core:	CSE 1540 3.0 <i>or</i> CSE 1530 3.0		<input style="width: 100%;" type="text"/>
	MATH 1300 3.0+MATH 1310 3.0+MATH 2310 3.0	<input type="checkbox"/>	
	MATH 1021 3.0+MATH 2022 3.0	<input type="checkbox"/>	MATH 1131 3.0+MATH 2030 3.0 <input type="checkbox"/>
	MATH 2041 3.0	<input type="checkbox"/>	MATH 4100 3.0 <input type="checkbox"/>

Specialized Honours:	Program Core completed		
	MATH 3050 3.0	<input type="checkbox"/>	MATH 3090 3.0 <input type="checkbox"/>
	One of: MATH 2131 3.0, MATH 2280 3.0, MATH 2270 3.0		<input style="width: 100%;" type="text"/>
	One of: MATH 3020 6.0, MATH 3140 6.0, (MATH 3110 3.0 + MATH 3210 3.0), (MATH 3260 3.0+MATH 4160 3.0)		<input style="width: 100%;" type="text"/>
	MATH 4400 6.0	<input type="checkbox"/>	
	3 more MATH credits at the 3000 level or higher, without second digit "5".		

Honours Major, Double Major or Major in a Major/Minor Program:	Program Core completed		
	Two of: MATH 4400 6.0, MATH 3050 6.0 , MATH 3020 6.0, MATH 3140 6.0, (MATH 3110 3.0+MATH 3210 3.0), (MATH 3260 3.0+MATH 4160 3.0)		<input style="width: 100%;" type="text"/>
	6 more MATH credits at the 3000 level or higher, without second digit "5".		

Honours Minor:	MATH 1300 3.0+MATH 1310 3.0		MATH 1131 3.0+MATH 2030 3.0 <input type="checkbox"/>
	MATH 1021 3.0+MATH 2022 3.0	<input type="checkbox"/>	
	(MATH 4100 3.0 + 3 MATH credits at the 3000 level or higher) <i>or</i> MATH 4400 6.0		<input type="checkbox"/>
	One of: MATH 3050 6.0, MATH 3020 6.0, MATH 3140 6.0, (MATH 3110 3.0+MATH 3210 3.0), (MATH 3260 3.0+MATH 4160 3.0), other proof-based courses approved by the director.		<input type="checkbox"/>

NOTE: Programs Starting in 2008

The following new mathematics and statistics program descriptions apply to all students (including transfer students) who enter York in September 2008 or later. In particular, these students may not use the older programs described on the preceding pages. Transfer students should consult with the UPD to determine which courses are required to complete their program.

Note that careful planning is necessary to insure that prerequisites of a required MATH course are taken previously.

MATH 1513 6.0 may be substituted for MATH 1300 3.0.

MATH 1013 3.0 + MATH 1014 3.0 may be substituted for MATH 1300 3.0 + MATH 1310 3.0 although this is not recommended.

Students who have taken MATH 1530 3.0 and MATH 1540 3.0 or MATH 1550 6.0 may not take MATH 1300 3.0, but will be considered to have credit for MATH 1300 3.0 and may take MATH 1310 3.0.

Mathematics for Commerce BA and BA (Hons) Programs (Post FW 07/08)

Mathematics for Commerce may not be taken jointly with another subject in a Double Major honours program. For a summary of Faculty degree requirements, see page 34.¹

Mathematics/Statistics Core:

MATH 1131 3.0	<input type="checkbox"/>	MATH 1200 3.0	<input type="checkbox"/>	MATH 1300 3.0	<input type="checkbox"/>	MATH 1310 3.0	<input type="checkbox"/>
MATH 1021 3.0	<input type="checkbox"/>	MATH 2022 3.0	<input type="checkbox"/>	MATH 2030 3.0	<input type="checkbox"/>	MATH 2310 3.0	<input type="checkbox"/>

Specialized Honours Actuarial Stream:

Mathematics/Statistics Core	<input type="checkbox"/>						
CSE 1560 3.0	<input type="checkbox"/>	MATH 2001 3.0	<input type="checkbox"/>	MATH 2131 3.0	<input type="checkbox"/>	MATH 2270 3.0	<input type="checkbox"/>
MATH 2280 3.0	<input type="checkbox"/>	MATH 2281 3.0	<input type="checkbox"/>	MATH 3131 3.0	<input type="checkbox"/>	MATH 3132 3.0	<input type="checkbox"/>
MATH 3280 3.0	<input type="checkbox"/>	MATH 3281 3.0	<input type="checkbox"/>	MATH 3330 3.0	<input type="checkbox"/>	MATH 4280 3.0	<input type="checkbox"/>
MATH 4130B 3.0	<input type="checkbox"/>	MATH 4143 3.0	<input type="checkbox"/>	MATH 4281 3.0	<input type="checkbox"/>		
MATH 4430 3.0 or MATH 4431 3.0	<input type="checkbox"/>						

Honours Actuarial Stream:

Mathematics/Statistics Core	<input type="checkbox"/>						
CSE 1560 3.0	<input type="checkbox"/>	MATH 2131 3.0	<input type="checkbox"/>	MATH 2280 3.0	<input type="checkbox"/>	MATH 3131 3.0	<input type="checkbox"/>
MATH 3280 3.0 + 3281 3.0 ²	<input type="checkbox"/>		<input type="checkbox"/>	MATH 3330 3.0	<input type="checkbox"/>	MATH 4280 3.0	<input type="checkbox"/>
MATH 4430 3.0 or MATH 4431 3.0	<input type="checkbox"/>						
6 additional credits selected from MATH courses at the 4000 level.					<input type="checkbox"/>		

Honours Operations Research Stream:

Mathematics/Statistics Core	<input type="checkbox"/>						
CSE 1560 3.0	<input type="checkbox"/>	MATH 2131 3.0	<input type="checkbox"/>	MATH 3170 6.0	<input type="checkbox"/>	MATH 3330 3.0	<input type="checkbox"/>
MATH 4170 6.0	<input type="checkbox"/>	MATH 3034 3.0 or MATH 3430 3.0			<input type="checkbox"/>		
6 additional credits selected from MATH courses at the 4000 level.					<input type="checkbox"/>		

See next page for Mathematics for Commerce BA Honours Minor (with another subject as Major) and BA Bachelor Programs.

¹ In an honours program, three full courses at the 4000 level are required. Students must plan ahead to ensure they have the prerequisites for six *more* credits at the 4000 level, in MATH or another subject. One possibility is ECON 4500 3.0 + ECON 4510 3.0 which has only ECON 1000 + ECON 1010 as prerequisites.

² This may be replaced by MATH 3280 6.0.

Mathematics for Commerce BA and BA (Hons) Programs (Post FW 07/08) (continued)

Honours Minor (with another subject as Major):

CSE 1520 3.0	<input type="checkbox"/>	MATH 1550 6.0 <i>or</i> (MATH 1530 3.0 + 1540 3.0)	<input type="checkbox"/>				
MATH 1021 3.0	<input type="checkbox"/>	MATH 1581 3.0	<input type="checkbox"/>	MATH 2560 3.0	<input type="checkbox"/>	MATH 2570 3.0	<input type="checkbox"/>
MATH 3170 6.0	<input type="checkbox"/>	MATH 3330 3.0	<input type="checkbox"/>	MATH 3034 3.0 <i>or</i> MATH 3430 3.0		<input type="checkbox"/>	

Bachelor Program:

CSE 1520 3.0	<input type="checkbox"/>	CSE 1530 3.0	<input type="checkbox"/>	MATH 1550 6.0 <i>or</i> (MATH 1530 3.0 + 1540 3.0)	<input type="checkbox"/>		
MATH 2221 3.0	<input type="checkbox"/>	MATH 2222 3.0	<input type="checkbox"/>	MATH 2560 3.0	<input type="checkbox"/>	MATH 2570 3.0	<input type="checkbox"/>
MATH 1581 3.0 + 2581 3.0 ¹			<input type="checkbox"/>	MATH 3330 3.0	<input type="checkbox"/>	MATH 3170 6.0	<input type="checkbox"/>
One of: MATH 3034 3.0 <i>or</i> MATH 3430 3.0			<input type="checkbox"/>				

¹ This may be replaced by MATH 2580 6.0.

Statistics BA and BA (Hons) Programs (Post FW 07/08)

Important: For a summary of Faculty degree requirements, see page 34.

Mathematics/Statistics Core:

MATH 1131 3.0	<input type="checkbox"/>	MATH 1200 3.0	<input type="checkbox"/>	MATH 1300 3.0	<input type="checkbox"/>	MATH 1310 3.0	<input type="checkbox"/>
MATH 1021 3.0	<input type="checkbox"/>	MATH 2022 3.0	<input type="checkbox"/>	MATH 2030 3.0	<input type="checkbox"/>	MATH 2310 3.0	<input type="checkbox"/>

Specialized Honours Major:

Mathematics/Statistics Core	<input type="checkbox"/>	CSE 1560 3.0	<input type="checkbox"/>
MATH 2001 3.0	<input type="checkbox"/>	MATH 2131 3.0	<input type="checkbox"/>
MATH 3034 3.0	<input type="checkbox"/>	MATH 3131 3.0	<input type="checkbox"/>
MATH 3132 3.0	<input type="checkbox"/>	MATH 3001 3.0	<input type="checkbox"/>
MATH 3430 3.0	<input type="checkbox"/>	MATH 3330 3.0	<input type="checkbox"/>
12 additional credits selected from MATH courses with third digit "3" at the 4000 level.			<input type="checkbox"/>
6 additional credits selected from MATH courses (without second digit "5").			<input type="checkbox"/>

Honours Major, Double Major or Major/Minor:

Mathematics/Statistics Core ¹	<input type="checkbox"/>						
CSE 1560 3.0	<input type="checkbox"/>	MATH 2131 3.0	<input type="checkbox"/>	MATH 3330 3.0	<input type="checkbox"/>	MATH 3131 3.0	<input type="checkbox"/>
MATH 3132 3.0	<input type="checkbox"/>	MATH 3034 3.0 or MATH 3430 3.0		<input type="checkbox"/>			
12 additional credits selected from MATH courses with third digit "3" at the 4000 level.			<input type="checkbox"/>				

Honours Minor (with another subject as Major):

MATH 1021 3.0 ²	<input type="checkbox"/>	MATH 1131 3.0	<input type="checkbox"/>	MATH 1300 3.0	<input type="checkbox"/>	MATH 1310 3.0	<input type="checkbox"/>
MATH 2022 3.0 ¹	<input type="checkbox"/>	MATH 2030 3.0	<input type="checkbox"/>	MATH 2131 3.0	<input type="checkbox"/>		
9 additional credits selected from MATH courses with third digit "3" at the 3000 level or higher.			<input type="checkbox"/>				

Bachelor Program:

Mathematics/Statistics Core ¹	<input type="checkbox"/>						
CSE 1560 3.0	<input type="checkbox"/>	MATH 2131 3.0	<input type="checkbox"/>	MATH 3131 3.0	<input type="checkbox"/>	MATH 3330 3.0	<input type="checkbox"/>
3 additional credits selected from MATH courses with third digit "3" at the 3000 level or higher.			<input type="checkbox"/>				
3 additional credits selected from MATH courses (without second digit "5") at the 3000 level or higher.			<input type="checkbox"/>				

¹ MATH 2222 3.0 will be accepted in lieu of MATH 2022 3.0 in this program, but is not recommended.

² MATH 2221 3.0 will be accepted in lieu of MATH 1021 3.0 in this program, but is not recommended.

Applied Mathematics BA, BA (Hons), BSc, BSc (Hons) Programs (Post FW 07/08)

Important: For a summary of Faculty degree requirements, see page 34 for BA, BA (Hons) and page 35 for BSc, BSc (Hons).

Note: See also the "areas of concentration" listed on page 7, when choosing upper-year courses.

Mathematics/Statistics Core:

MATH 1131 3.0	<input type="checkbox"/>	MATH 1200 3.0	<input type="checkbox"/>	MATH 1300 3.0	<input type="checkbox"/>	MATH 1310 3.0	<input type="checkbox"/>
MATH 1021 3.0	<input type="checkbox"/>	MATH 2022 3.0	<input type="checkbox"/>	MATH 2030 3.0	<input type="checkbox"/>	MATH 2310 3.0	<input type="checkbox"/>

Specialized Honours BA or BSc Major:

Mathematics/Statistics Core	<input type="checkbox"/>	CSE 1560 3.0	<input type="checkbox"/>	
MATH 2001 3.0	<input type="checkbox"/>	MATH 2041 3.0	<input type="checkbox"/>	
MATH 3241 3.0	<input type="checkbox"/>	MATH 3242 3.0	<input type="checkbox"/>	
MATH 3260 3.0 or MATH 3170 6.0	<input type="checkbox"/>	MATH 3410 3.0	<input type="checkbox"/>	
12 additional credits selected from MATH courses (without second digit "5") at the 4000 level.				<input type="checkbox"/>

Honours BA or BSc Major, Double Major or Major/Minor:

Mathematics/Statistics Core	<input type="checkbox"/>	
CSE 1560 3.0	<input type="checkbox"/>	
MATH 2041 3.0	<input type="checkbox"/>	
MATH 2270 3.0	<input type="checkbox"/>	
MATH 3241 3.0	<input type="checkbox"/>	
MATH 3242 3.0 or MATH 3260 3.0 or MATH 3170 6.0	<input type="checkbox"/>	
12 additional credits selected from MATH courses (without second digit "5") at the 4000 level.		<input type="checkbox"/>

Honours Minor BA or BSc (with another subject as Major):

MATH 1021 3.0	<input type="checkbox"/>	MATH 1300 3.0	<input type="checkbox"/>	MATH 1310 3.0	<input type="checkbox"/>	CSE 1560 3.0	<input type="checkbox"/>
MATH 2310 3.0	<input type="checkbox"/>						
6 credits chosen from: MATH 2041 3.0; MATH 2270 3.0; either MATH 2022 3.0 or MATH 2222 3.0.							<input type="checkbox"/>
12 additional credits selected from MATH courses (without second digit "5") at the 3000 level or higher including at least one of MATH 3170 6.0, MATH 3241 3.0 or MATH 3260 3.0.							<input type="checkbox"/>

BA Program:

Mathematics/Statistics Core	<input type="checkbox"/>	CSE 1560 3.0	<input type="checkbox"/>	MATH 2041 3.0	<input type="checkbox"/>	
MATH 2270 3.0	<input type="checkbox"/>	MATH 3241 3.0	<input type="checkbox"/>	MATH 3260 3.0 or MATH 3170 6.0	<input type="checkbox"/>	
6 or 3 additional credits selected from MATH courses (without second digit "5") at the 3000 level or higher to make the total of such courses at least 12.						<input type="checkbox"/>

BSc Program:

Mathematics/Statistics Core	<input type="checkbox"/>
CSE 1560 3.0	<input type="checkbox"/>
MATH 2041 3.0	<input type="checkbox"/>
MATH 2270 3.0	<input type="checkbox"/>
MATH 3241 3.0	<input type="checkbox"/>
MATH 3260 3.0 or MATH 3170 6.0	<input type="checkbox"/>

Computational Mathematics Specialized Honours BSc (FW 08/09 and FW 09/10)

Important: For a summary of Faculty degree requirements, see page 35.

The only degree currently offered in Computational Mathematics is Specialized Honours BSc. Students must complete the courses in the first box below and the courses in one of the three areas of concentration appearing further down this page. Students must complete at least 54 credits from MATH courses (without second digit "5").

Mathematics/Statistics Core:

MATH 1131 3.0	<input type="checkbox"/>	MATH 1200 3.0	<input type="checkbox"/>	MATH 1300 3.0	<input type="checkbox"/>	MATH 1310 3.0	<input type="checkbox"/>
MATH 1021 3.0	<input type="checkbox"/>	MATH 2022 3.0	<input type="checkbox"/>	MATH 2030 3.0	<input type="checkbox"/>	MATH 2310 3.0	<input type="checkbox"/>

Computational Mathematics Core:

CSE 1020 3.0	<input type="checkbox"/>	CSE 1030 3.0	<input type="checkbox"/>	CSE 2031 3.0	<input type="checkbox"/>	MATH 2041 3.0	<input type="checkbox"/>
MATH 3090 3.0	<input type="checkbox"/>	MATH 4090 3.0	<input type="checkbox"/>				

Applied and Industrial Mathematics:

Mathematics/Statistics Core	<input type="checkbox"/>	Computational Mathematics Core	<input type="checkbox"/>
MATH 2042 3.0	<input type="checkbox"/>	MATH 2270 3.0	<input type="checkbox"/>
MATH 4141 3.0	<input type="checkbox"/>	MATH 3241 3.0	<input type="checkbox"/>
		MATH 3242 3.0	<input type="checkbox"/>

Financial Mathematics

Mathematics/Statistics Core	<input type="checkbox"/>	Computational Mathematics Core	<input type="checkbox"/>
ECON 1000 3.0	<input type="checkbox"/>	ECON 1010 3.0	<input type="checkbox"/>
MATH 4143 3.0	<input type="checkbox"/>	MATH 2280 3.0	<input type="checkbox"/>
		MATH 3170 6.0	<input type="checkbox"/>

Actuarial Mathematics:

Mathematics/Statistics Core	<input type="checkbox"/>	Computational Mathematics Core	<input type="checkbox"/>
MATH 2280 3.0	<input type="checkbox"/>	MATH 3280 6.0	<input type="checkbox"/>
MATH 4280 3.0	<input type="checkbox"/>	MATH 3330 3.0	<input type="checkbox"/>
		MATH 4143 3.0	<input type="checkbox"/>
		MATH 4430 3.0 or MATH 4431 3.0	<input type="checkbox"/>

See next page for Computational Mathematics Specialized Honours BSc (Post FW 09/10).

Computational Mathematics Specialized Honours BSc (Post FW 09/10)

Important: For a summary of Faculty degree requirements, see page 35.

The only degree currently offered in Computational Mathematics is Specialized Honours BSc. Students must complete the courses in the first box below and the courses in one of the two areas of concentration appearing further down this page.

Mathematics/Statistics Core:

MATH 1131 3.0	<input type="checkbox"/>	MATH 1200 3.0	<input type="checkbox"/>	MATH 1300 3.0	<input type="checkbox"/>	MATH 1310 3.0	<input type="checkbox"/>
MATH 1021 3.0	<input type="checkbox"/>	MATH 2022 3.0	<input type="checkbox"/>	MATH 2030 3.0	<input type="checkbox"/>	MATH 2310 3.0	<input type="checkbox"/>

Computational Mathematics Core:

CSE 1020 3.0	<input type="checkbox"/>	CSE 1030 3.0	<input type="checkbox"/>	CSE 2031 3.0	<input type="checkbox"/>	MATH 2041 3.0	<input type="checkbox"/>
MATH 2131 3.0	<input type="checkbox"/>	MATH 2270 3.0	<input type="checkbox"/>	MATH 3090 3.0	<input type="checkbox"/>	MATH 3241 3.0	<input type="checkbox"/>
MATH 3242 3.0	<input type="checkbox"/>	MATH 3271 3.0	<input type="checkbox"/>	MATH 4090 3.0	<input type="checkbox"/>		

Applied and Industrial Mathematics:

Mathematics/Statistics Core	<input type="checkbox"/>	Computational Mathematics Core	<input type="checkbox"/>
MATH 3170 6.0	<input type="checkbox"/>	MATH 4141 3.0	<input type="checkbox"/>
		MATH 4170 6.0	<input type="checkbox"/>

Financial Mathematics

Mathematics/Statistics Core	<input type="checkbox"/>	Computational Mathematics Core	<input type="checkbox"/>
ECON 1000 3.0	<input type="checkbox"/>	ECON 1010 3.0	<input type="checkbox"/>
		MATH 2280 3.0	<input type="checkbox"/>
		MATH 2281 3.0	<input type="checkbox"/>
MATH 3330 3.0	<input type="checkbox"/>	MATH 4143 3.0	<input type="checkbox"/>
		MATH 4430 3.0 or MATH 4431 3.0	<input type="checkbox"/>

Mathematics BA, BA (Hons), BSc, BSc (Hons) Programs (Post FW 07/08)

Important: For a summary of Faculty degree requirements, see page 34 for BA, BA (Hons) and page 35 for BSc, BSc (Hons).

Mathematics/Statistics Core¹:

MATH 1131 3.0	<input type="checkbox"/>	MATH 1200 3.0	<input type="checkbox"/>	MATH 1300 3.0	<input type="checkbox"/>	MATH 1310 3.0	<input type="checkbox"/>
MATH 1021 3.0	<input type="checkbox"/>	MATH 2022 3.0	<input type="checkbox"/>	MATH 2030 3.0	<input type="checkbox"/>	MATH 2310 3.0	<input type="checkbox"/>

Pure Mathematics 4000 Level Courses:

4000 6.0/3.0	4001 6.0	4020 6.0	4030 3.0	4080 6.0	4110 3.0	4120 3.0
4130 3.0	4140 3.0	4150 3.0	4160 3.0	4170 6.0	4210 3.0	4230 3.0
4250 6.0	4280 3.0	4290 3.0	4300 6.0/3.0	4430 3.0	4431 3.0	4630 3.0
4730 3.0						

Specialized Honours BA or BSc Major:

Mathematics/Statistics Core	<input type="checkbox"/>						
CSE 1560 3.0	<input type="checkbox"/>	MATH 2001 3.0	<input type="checkbox"/>	MATH 3001 3.0	<input type="checkbox"/>	MATH 3010 3.0	<input type="checkbox"/>
MATH 3020 6.0 or both MATH 3131 3.0 and MATH 3132 3.0					<input type="checkbox"/>		
6 credits chosen from the Pure Math 4000 Level Courses above					<input type="checkbox"/>		
6 additional credits selected from MATH courses (without second digit "5") at the 4000 level, including either MATH 4001 6.0 or MATH 4020 6.0 if neither was taken above.		<input type="checkbox"/>					
15 additional credits selected from MATH courses (without second digit "5").					<input type="checkbox"/>		

Honours BA or BSc Major, Double Major or Major/Minor:

Mathematics/Statistics Core	<input type="checkbox"/>						
CSE 1560 3.0	<input type="checkbox"/>	MATH 2001 3.0	<input type="checkbox"/>	MATH 3001 3.0	<input type="checkbox"/>	MATH 3010 3.0	<input type="checkbox"/>
MATH 3020 6.0 or both MATH 3131 3.0 and MATH 3132 3.0					<input type="checkbox"/>		
6 credits chosen from the Pure Math 4000 Level Courses above.					<input type="checkbox"/>		
6 additional credits selected from MATH courses (without second digit "5") at the 4000 level.					<input type="checkbox"/>		

Honours BA or BSc Minor (with another subject as Major):

MATH 1300 3.0	<input type="checkbox"/>	MATH 1310 3.0	<input type="checkbox"/>	MATH 1021 3.0	<input type="checkbox"/>	MATH 2022 3.0	<input type="checkbox"/>
MATH 2310 3.0	<input type="checkbox"/>						
3 credits chosen from:							
MATH 1019 3.0, MATH 1090 3.0, MATH 1190 3.0, MATH 1200 3.0, MATH 2030 3.0, MATH 2320 3.0							<input type="checkbox"/>
12 additional credits selected from MATH courses (without second digit "5") at the 3000 level or higher							<input type="checkbox"/>

Bachelor BA or BSc Program:

MATH 1300 3.0	<input type="checkbox"/>	MATH 1310 3.0	<input type="checkbox"/>	MATH 1021 3.0 ²	<input type="checkbox"/>	MATH 2022 3.0 ³	<input type="checkbox"/>
MATH 2310 3.0	<input type="checkbox"/>	CSE 1560 3.0	<input type="checkbox"/>				
3 credits chosen from:							
MATH 1019 3.0, MATH 1090 3.0, MATH 1190 3.0, MATH 1200 3.0, MATH 2030 3.0, MATH 2320 3.0.							<input type="checkbox"/>
12 additional credits selected from MATH courses (without second digit "5") at the 3000 level or higher.							<input type="checkbox"/>

¹ In all Mathematics Honours programs, MATH 1021 3.0 and/or MATH 2022 3.0 may be replaced by other linear algebra courses, but if the grade obtained in any such replacement is below A then one of the following courses must be taken above and beyond the normal Honours requirements: MATH 1019 3.0, MATH 1090 3.0, MATH 1190 3.0 or MATH 2320 3.0. ² MATH 2221 3.0 or MATH 1025 3.0 will be accepted in lieu of MATH 1021 3.0 in this program. ³ MATH 2222 3.0 will be accepted in lieu of MATH 2022 3.0 in this program.

International Dual Degree Mathematics Statistics BSc, BSc (Specialized Hons) Programs (Post FW 07/08)

Important: For a summary of Faculty degree requirements, see page 35.

Note: This program requires a *Specified General Education Requirement*. See box at bottom of this page.

Mathematics/Statistics Core:

MATH 1131 3.0	<input type="checkbox"/>	MATH 1200 3.0	<input type="checkbox"/>	MATH 1300 3.0	<input type="checkbox"/>	MATH 1310 3.0	<input type="checkbox"/>
MATH 1021 3.0	<input type="checkbox"/>	MATH 2022 3.0	<input type="checkbox"/>	MATH 2030 3.0	<input type="checkbox"/>	MATH 2310 3.0	<input type="checkbox"/>

Specialized Honours Major:

Mathematics/Statistics Core	<input type="checkbox"/>						
CSE 1530 3.0	<input type="checkbox"/>	CSE 1560 3.0	<input type="checkbox"/>	PHYS 1410 6.0	<input type="checkbox"/>	MATH 2001 3.0	<input type="checkbox"/>
MATH 2270 3.0	<input type="checkbox"/>	MATH 2320 3.0	<input type="checkbox"/>	MATH 3020 6.0	<input type="checkbox"/>	MATH 3170 6.0	<input type="checkbox"/>
MATH 3241 3.0	<input type="checkbox"/>	MATH 3271 3.0	<input type="checkbox"/>	MATH 3410 3.0	<input type="checkbox"/>		
9 additional credits selected from MATH courses at the 4000 level.					<input type="checkbox"/>		

Bachelor Program:

Mathematics/Statistics Core	<input type="checkbox"/>						
CSE 1530 3.0	<input type="checkbox"/>	CSE 1560 3.0	<input type="checkbox"/>	PHYS 1410 6.0	<input type="checkbox"/>	MATH 2001 3.0	<input type="checkbox"/>
MATH 2270 3.0	<input type="checkbox"/>	MATH 2320 3.0	<input type="checkbox"/>	MATH 3020 6.0	<input type="checkbox"/>	MATH 3170 6.0	<input type="checkbox"/>
MATH 3241 3.0	<input type="checkbox"/>	MATH 3271 3.0	<input type="checkbox"/>	MATH 3410 3.0	<input type="checkbox"/>		

In lieu of the Faculty's General Education Requirement, students of this program MUST take the appropriate courses.

Students whose home university is York University

AP/IT 1000 6.0	<input type="checkbox"/>	Any Faculty-approved General Education course 3.0	<input type="checkbox"/>
Lingua e Cultura Italiana 3.0 (offered by the University of L'Aquila)	<input type="checkbox"/>		

Students whose home university is University of L'Aquila

Lingua Inglese 1, 2 (offered by the University of L'Aquila)	<input type="checkbox"/>	HUMA 1220 9.0	<input type="checkbox"/>
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¹ For an up-to-date list of equivalent courses offered at the University of L'Aquila, contact the Department of Mathematics and Statistics.

Statistics BSc and BSc (Hons) Programs (Post FW 07/08)

Important: For a summary of Faculty degree requirements, see page 35.

Mathematics/Statistics Core:

MATH 1131 3.0	<input type="checkbox"/>	MATH 1200 3.0	<input type="checkbox"/>	MATH 1300 3.0	<input type="checkbox"/>	MATH 1310 3.0	<input type="checkbox"/>
MATH 1021 3.0	<input type="checkbox"/>	MATH 2022 3.0	<input type="checkbox"/>	MATH 2030 3.0	<input type="checkbox"/>	MATH 2310 3.0	<input type="checkbox"/>

Specialized Honours Major:

Mathematics/Statistics Core	<input type="checkbox"/>	CSE 1560 3.0	<input type="checkbox"/>		
MATH 2001 3.0	<input type="checkbox"/>	MATH 2131 3.0	<input type="checkbox"/>	MATH 3001 3.0	<input type="checkbox"/>
MATH 3034 3.0	<input type="checkbox"/>	MATH 3131 3.0	<input type="checkbox"/>	MATH 3132 3.0	<input type="checkbox"/>
12 additional credits selected from MATH courses with third digit "3" at the 4000 level.					<input type="checkbox"/>
6 additional credits selected from MATH courses (without second digit "5").					<input type="checkbox"/>

Honours Major or Major/Minor:

Mathematics/Statistics Core ¹	<input type="checkbox"/>				
CSE 1560 3.0	<input type="checkbox"/>	MATH 2131 3.0	<input type="checkbox"/>	MATH 3330 3.0	<input type="checkbox"/>
MATH 3132 3.0	<input type="checkbox"/>	MATH 3034 3.0 or MATH 3430 3.0		<input type="checkbox"/>	<input type="checkbox"/>
12 additional credits selected from MATH courses with third digit "3" at the 4000 level.					<input type="checkbox"/>

Honours Double Major:

Mathematics/Statistics Core ¹	<input type="checkbox"/>	CSE 1560 3.0	<input type="checkbox"/>		
MATH 2131 3.0	<input type="checkbox"/>	MATH 3330 3.0	<input type="checkbox"/>	MATH 3131 3.0	<input type="checkbox"/>
6 additional credits selected from MATH courses with third digit "3" at the 3000 level or higher.					<input type="checkbox"/>

Honours Minor (with another subject as Major):

MATH 1021 3.0 ²	<input type="checkbox"/>	MATH 1131 3.0	<input type="checkbox"/>	MATH 1300 3.0	<input type="checkbox"/>	MATH 1310 3.0	<input type="checkbox"/>
MATH 2022 3.0 ¹	<input type="checkbox"/>	MATH 2030 3.0	<input type="checkbox"/>	MATH 2131 3.0	<input type="checkbox"/>		
9 additional credits selected from MATH courses with third digit "3" at the 3000 level or higher.							<input type="checkbox"/>

Bachelor Program:

Mathematics/Statistics Core ¹	<input type="checkbox"/>				
CSE 1530 3.0	<input type="checkbox"/>	MATH 2131 3.0	<input type="checkbox"/>	MATH 3131 3.0	<input type="checkbox"/>
3 additional credits selected from MATH courses with third digit "3" at the 3000 level or higher.					<input type="checkbox"/>

¹ MATH 2222 3.0 will be accepted in lieu of MATH 2022 3.0 in this program, but is not recommended.

² MATH 1025 3.0 or MATH 2221 3.0 will be accepted in lieu of MATH 1021 3.0 in this program, but is not recommended.

Mathematics for Education BSc (Hons) Programs (Post FW 07/08)

Important: For a summary of Faculty degree requirements, see page 35.

Note: This program may be taken as a double major, or as a minor with a program in other Faculties.

Mathematics/Statistics Core:

MATH 1131 3.0	<input type="checkbox"/>	MATH 1200 3.0	<input type="checkbox"/>	MATH 1300 3.0	<input type="checkbox"/>	MATH 1310 3.0	<input type="checkbox"/>
MATH 1021 3.0	<input type="checkbox"/>	MATH 2022 3.0	<input type="checkbox"/>	MATH 2030 3.0	<input type="checkbox"/>	MATH 2310 3.0	<input type="checkbox"/>

Specialized Honours Major:

Mathematics/Statistics Core	<input type="checkbox"/>	CSE 1560 3.0	<input type="checkbox"/>	
3 credits chosen from: MATH 2001 3.0, MATH 2131 3.0, MATH 2270 3.0, MATH 2280 3.0				
MATH 3050 6.0	<input type="checkbox"/>	MATH 3090 3.0	<input type="checkbox"/>	MATH 4100 3.0
				MATH 4400 6.0
9 additional credits selected from MATH courses (without second digit "5") at the 3000 level or higher.				<input type="checkbox"/>

Honours Major, Double Major or Major/Minor:

Mathematics/Statistics Core	<input type="checkbox"/>	CSE 1560 3.0	<input type="checkbox"/>	MATH 4100 3.0	<input type="checkbox"/>
18 additional credits selected from MATH courses (without second digit "5") at the 3000 level or higher (MATH 3050 6.0, MATH 4400 6.0 and one of MATH 3090 3.0 or MATH 4090 3.0 recommended).					
Proof-based requirement: at least 3 credits, which may be within the choices above, selected from:					
MATH 2001 3.0		MATH 3020 6.0		MATH 3050 6.0	MATH 3001 3.0
MATH 3140 6.0		MATH 3260 3.0		MATH 4160 3.0	<input type="checkbox"/>

Honours Minor (with another subject as Major):

3 CSE credits (CSE 1560 3.0 recommended)

MATH 1021 3.0	<input type="checkbox"/>	MATH 1131 3.0	<input type="checkbox"/>	MATH 1200 3.0	<input type="checkbox"/>	MATH 1300 3.0	<input type="checkbox"/>
MATH 1310 3.0	<input type="checkbox"/>	MATH 2022 3.0	<input type="checkbox"/>	MATH 2030 3.0	<input type="checkbox"/>		
9 additional credits selected from MATH courses (without second digit "5") at the 3000 level or higher including MATH 4100 3.0 or MATH 4400 6.0.							<input type="checkbox"/>
3 credits, which may be within the choices above, selected from proof-based courses approved by the director (such as MATH 2001 3.0, MATH 3020 6.0, MATH 3050 6.0, MATH 3140 6.0, MATH 3260 3.0, MATH 4160 3.0).							<input type="checkbox"/>

Mathematics for Education BA (Hons) Programs (Post FW 07/08)

Important: For a summary of Faculty degree requirements, see page 34.

Note: This program may be taken as a double major, or as a minor with a program in other Faculties.

Mathematics/Statistics Core:

MATH 1131 3.0	<input type="checkbox"/>	MATH 1200 3.0	<input type="checkbox"/>	MATH 1300 3.0	<input type="checkbox"/>	MATH 1310 3.0	<input type="checkbox"/>
MATH 1021 3.0	<input type="checkbox"/>	MATH 2022 3.0	<input type="checkbox"/>	MATH 2030 3.0	<input type="checkbox"/>	MATH 2310 3.0	<input type="checkbox"/>

Specialized Honours Major:

Mathematics/Statistics Core CSE 1560 3.0

3 credits chosen from: MATH 2001 3.0, MATH 2131 3.0, MATH 2270 3.0, MATH 2280 3.0

MATH 3050 6.0 MATH 3090 3.0 MATH 4100 3.0 MATH 4400 6.0

9 additional credits selected from MATH courses (without second digit "5") at the 3000 level or higher including 3 credits at the 4000 level.

Honours Major, Double Major or Major/Minor:

Mathematics/Statistics Core CSE 1560 3.0 MATH 4100 3.0

18 additional credits selected from MATH courses (without second digit "5") at the 3000 level or higher including 9 credits at the 4000 level (MATH 3050 6.0, MATH 4400 6.0 and one of MATH 3090 3.0 or MATH 4090 3.0 recommended).

Proof-based requirement: at least 3 credits, which may be within the choices above, selected from:

MATH 2001 3.0	MATH 3020 6.0	MATH 3050 6.0	MATH 3001 3.0
MATH 3140 6.0	MATH 3260 3.0	MATH 4160 3.0 <input type="checkbox"/>	

Honours Minor (with another subject as Major):

3 CSE credits (CSE 1560 3.0 recommended)

MATH 1021 3.0	<input type="checkbox"/>	MATH 1131 3.0	<input type="checkbox"/>	MATH 1200 3.0	<input type="checkbox"/>	MATH 1300 3.0	<input type="checkbox"/>
MATH 1310 3.0	<input type="checkbox"/>	MATH 2022 3.0	<input type="checkbox"/>	MATH 2030 3.0	<input type="checkbox"/>		

9 additional credits selected from MATH courses (without second digit "5") at the 3000 level or higher, with at least 6 credits at the 4000 level, including MATH 4100 3.0 or MATH 4400 6.0.

3 credits, which may be within the choices above, selected from proof-based courses approved by the director (such as MATH 2001 3.0, MATH 3020 6.0, MATH 3050 6.0, MATH 3140 6.0, MATH 3260 3.0, MATH 4160 3.0).