

## School of Mathematics & Statistics

### Entry to Honours

Students who attain an average of grade 11.0 or above at the first sitting in the requisite 2000-level modules and who meet all other programme requirements will be given automatic offers of entry into Honours programmes\*.

\*Apart from students on Integrated Masters degrees.

Students permitted automatic entry to Honours will only be permitted to trail one module to a maximum of 30 sub-honours credits into Honours.

This School also allows 'Qualified Entry to Honours' as defined in:

[Entry to Honours](#)

### BSc / MA Honours

The general requirements are 480 credits over a period of normally four years (and not more than five years) or part-time equivalent, of which the final two years form an approved Honours programme of 240 credits, of which 90 credits are at 4000 level and at least a further 120 credits at 3000 and/or 4000 levels.

### BSc / MA Honours with Integrated Year Abroad

The general requirements are 540 credits over a period of normally five years (and not more than six years) or part-time equivalent, of which the final three years are an approved Honours programme of 300 credits, of which 60 credits are gained during the integrated year abroad, 90 credits are at 4000 level and at least a further 120 credits at 3000 and/or 4000 levels.

### MMath Honours

The general requirements are 600 credits over a period of normally five years (or four years with advanced standing credits) and in no circumstances more than six years or part-time equivalent, of which the final years form an approved Honours programme of at least 330 credits of which 120 credits are at 5000 level and at least a further 210 credits are at 3000 level and above.

**Exchange scheme:** In the case of students who spend part of the BSc/MA Honours programme abroad on a recognised Exchange scheme, the Programme Requirements will be amended to take into account courses taken while abroad.

(see <http://www.st-andrews.ac.uk/studyabroad/outgoingstudents/AcademicInformation/>).

### Applied Mathematics - Single Honours (5-year) MMath

First Year: 20 credits: MT1002.

*(Students without prerequisite for MT1002 will take MT1001 in Semester 1.)*

Second Year (2013/4): 60 credits: MT2001 and MT2003 - with a pass at grade 15 or better in both.

Second Year (2014/5): 120 credits: MT2501 - MT2508 passed with an average grade of at least 13.5 and no more than two modules with grade below 11.

Third, Fourth and Fifth Years:

45 credits: MT3501 and MT3503 and MT3504;

60 credits: MT3601 and MT4005 and MT4509 and MT4510;

Between 15 and 20 credits: MT4112 (recommended) or MT4111 or MT5611;

60 credits in three of: MT5802, MT5806, MT5809, MT5810, MT5990;

40 credits: MT5999 (Fifth Year only);

20 further credits from: MT5000 - MT5753, MT5757 - MT5999, ID5059;

Further credits: MT3000 - MT5753, MT5757 - MT5999, ID5059, to a total of 360 credits across Third, Fourth and Fifth Years, except that 30 of these credits in Third or Fourth Year may be substituted by credits from another Level or School, with permission of the Adviser of Studies and any other School involved.

In total, at least 330 credits must be achieved at 3000, 4000 and 5000 level, including at least 120 credits at 5000 level.

## Mathematics & Statistics - Programme Requirements 2014/15 - November 2014

### Applied Mathematics - Single Honours MMath (Fast Track)

Approved candidates will be awarded (60 in 2013/4) 90 in 2014/5 advanced standing credits

#### Applied Mathematics - Single Honours MMath (Fast Track), entrants 2013/4 or earlier:

First Year (2013/4): 20 credits: MT1002;

30 credits: MT2001 - with a pass at grade 15 or better.

Second Year (2013/4): 30 credits: MT2003 - with a pass at grade 15 or better;

30 credits in two of: MT3501, MT3503, MT3504;

30 further credits: MT2000 - MT4999.

Second Year (2014/5): 90 credits: MT2502, MT2504-MT2508;

30 credits in two of: MT3501, MT3503, MT3504.

An average of 13.5 on the 2000-level modules taken (including MT2001) with no more than two below grade 11 required to progress into Honours.

Third and Fourth Years:

15 further credits: MT3501 or MT3503 or MT3504

60 credits: MT3601 **and** MT4005 **and** MT4509 **and** MT4510;

Between 15 and 20 credits: MT4112 (recommended) **or** MT4111 **or** MT5611;

60 credits in three of: MT5802, MT5806, MT5809, MT5810, MT5990;

40 credits: MT5999 (Fourth Year only);

20 further credits from: MT5000 - MT5753, MT5757 - MT5999, ID5059;

Further credits: MT3000 - MT5753, MT5757 - MT5999, ID5059, to a total of 300 credits across Third and Fourth Years.

In total, at least 330 credits must be achieved at 3000, 4000 and 5000 level, including at least 120 credits at 5000 level.

#### Applied Mathematics - Single Honours MMath (Fast Track), entrants 2014/5 or later:

First Year (2014/5): 20 credits: MT1002;

10 credits: MT1010.

75 credits: MT2501, MT2503, MT2504, MT2506, MT2507.

15 credits: MT2505 or MT2508

An average of 13.5 on the six 2000-level modules with no more than one below grade 11 required to progress into Honours.

Second Year (2015/6): 15 credits: MT2502

15 further credits: MT2505 or MT2508

Second, Third and Fourth Years:

45 credits: MT3501 **and** MT3503 **and** MT3504

60 credits: MT3601 **and** MT4005 **and** MT4509 **and** MT4510;

Between 15 and 20 credits: MT4112 (recommended) **or** MT4111 **or** MT5611;

60 credits in three of: MT5802, MT5806, MT5809, MT5810, MT5990;

40 credits: MT5999 (Fourth Year only);

20 further credits from: MT5000 - MT5753, MT5757 - MT5999, ID5059;

Further credits: MT3000 - MT5753, MT5757 - MT5999, ID5059, to a total of 330 credits across Second, Third and Fourth Years.

In total, at least 330 credits must be achieved at 3000, 4000 and 5000 level, including at least 120 credits at 5000 level.

## Mathematics & Statistics - Programme Requirements 2014/15 - November 2014

### Mathematics - Single Honours BSc or MA

First Year: 20 credits: MT1002.  
*(Students without prerequisite for MT1002 will take MT1001 in Semester 1.)*

Second Year (2013/4): 30 credits: MT2001 - with a pass at grade 11 or better;  
 At least 30 credits: MT2002 - MT2005 - with a pass at grade 11 or better in one of these.

Second Year (2014/5): 15 credits: MT2501  
 At least 45 credits: MT2502-MT2508 in at least one of the following: (MT2502, MT2503 & MT2505), (MT2502, MT2504 & MT2505), (MT2502, MT2504 & MT2508), (MT2503, MT2504 & MT2508), (MT2503, MT2506 & MT2507), or (MT2504, MT2505 & MT2508)  
 passed with the average of the best four grades on MT2501-MT2508 being 11 or higher to progress into Honours.

Third and Fourth Years:  
 45 credits: MT3501 **and** MT3503 **and** MT3504;  
 15 credits: MT3600 **or** MT3601 **or** MT3606;  
 15 credits: MT3607 **or** MT4111 **or** MT4112;  
 15 credits: MT4599 (in Fourth Year only);  
 150 further credits: MT3000 - MT4999, except that 30 of these credits in Third Year may be substituted by credits from another Level or School, with permission of the Adviser of Studies and any other School involved.

In total, at least 210 credits must be achieved at 3000 and 4000 level, including at least 90 credits at 4000 level.

### Mathematics - Joint Honours BSc or MA

(BSc Honours)	(MA Honours)
<p><b>Mathematics and one of:</b> Biology, Chemistry, Computer Science, Economics, Geography, Internet Computer Science<sup>N</sup>, Logic &amp; Philosophy of Science, Management Science, Physics, Psychology</p> <p><sup>N</sup> Not available to entrants from 2011-12</p>	<p><b>Mathematics and one of:</b> Ancient History, Arabic<sup>W</sup>, Art History, Biblical Studies, Classical Studies, Economics, English, German<sup>W</sup>, Hebrew, International Relations, Italian<sup>W</sup>, Latin, Mediaeval History, Modern History, Philosophy, Psychology, Russian<sup>W</sup>, Scottish History, Spanish<sup>W</sup>, Theological Studies</p> <p><sup>W</sup> Available also as 'With Integrated Year Abroad' degree</p>
<p><b>Mathematics element of Joint BSc or MA Honours (except Mathematics and Computer Science or Physics or Psychology with BPS recognition):</b></p> <p>First Year: 20 credits: MT1002.  <i>(Students without prerequisite for MT1002 will take MT1001 in Semester 1.)</i></p> <p>Second Year (2013/4): 30 credits: MT2001 - with a pass at grade 11 or better;                      30 credits: MT2002 (for Pure Maths options) <b>or</b> MT2003 (for Applied Maths options) - with a pass at grade 11 or better.</p> <p>Second Year (2014/5): 15 credits: MT2501                      At least 45 credits: MT2502 - MT2508 including at least one of the following: (MT2502, MT2503 &amp; MT2505), (MT2502, MT2504 and MT2505), (MT2503, MT2506 and MT2507), (MT2502, MT2504 and MT2508) or (MT2504, MT2505 and MT2508) passed with the average of the best 4 grades on MT2501 - MT2508 being 11 or higher</p> <p>Third and Fourth Years:                      30 credits in two of: MT3501, MT3503, MT3504;                      15 credits: MT3600 <b>or</b> MT3601;                      15 credits: MT4111 <b>or</b> MT4112;                      15 credits: MT4599 (in Fourth Year only);                      45 further credits: MT3000 - MT4999.</p> <p>In total, 240 credits must be achieved at 3000 and 4000 level, including at least 90 credits at 4000 level.</p>	

## Mathematics & Statistics - Programme Requirements 2014/15 - November 2014

### Mathematics element of Mathematics and Computer Science - Joint BSc Honours:

First Year: 20 credits: MT1002.

*(Students without prerequisite for MT1002 will take MT1001 in Semester 1.)*

Second Year (2013/4): 30 credits: MT2001 - with a pass at grade 11 or better;

30 credits: MT2002 (for Pure Maths options) **or** MT2003 (for Applied Maths options) - with a pass at grade 11 or better.

Second Year (2014/5): 15 credits: MT2501

At least 45 credits: MT2502 - MT2508 including at least one of the following: (MT2502, MT2503 & MT2505), (MT2502, MT2504 and MT2505), (MT2503, MT2506 and MT2507), (MT2502, MT2504 and MT2508) or (MT2504, MT2505 and MT2508) passed with the average of the best 4 grades on MT2501 - MT2508 being 11 or higher

Third and Fourth Years:

30 credits in two of: MT3501, MT3503, MT3504;

15 credits: MT3600 **or** MT3601;

15 credits: MT4599 (in Fourth Year only);

60 further credits: MT3000 - MT4999.

In total, 240 credits must be achieved at 3000 and 4000 level, including at least 90 credits at 4000 level.

### Mathematics element of Mathematics and Psychology (with BPS recognition) - Joint BSc or MA Honours:

First Year: 20 credits: MT1002.

*(Students without prerequisite for MT1002 will take MT1001 in Semester 1.)*

Second Year (2013/4): 30 credits: MT2001 - with a pass at grade 11 or better;

30 credits: MT2002 (for Pure Maths options) **or** MT2003 (for Applied Maths options) - with a pass at grade 11 or better.

Second Year (2014/5): 15 credits: MT2501

At least 45 credits: MT2502 - MT2508 including at least one of the following: (MT2502, MT2503 & MT2505), (MT2502, MT2504 and MT2505), (MT2503, MT2506 and MT2507), (MT2502, MT2504 and MT2508) or (MT2504, MT2505 and MT2508) passed with the average of the best 4 grades on MT2501 - MT2508 being 11 or higher

Third and Fourth Years:

30 credits in two of: MT3501, MT3503, MT3504;

15 credits: MT3600 **or** MT3601;

15 credits: MT4111 **or** MT4112;

15 credits: MT4599 (in Fourth Year only);

15 further credits: MT3000 - MT4999.

In total, 240 credits must be achieved at 3000 and 4000 level, including at least 90 credits at 4000 level.

**Mathematics and Physics - Joint Honours BSc**

First Year: 60 credits: PH1011 **and** PH1012 **and** MT1002.  
*(Students without prerequisite for MT1002 will take MT1001 in Semester 1.)*

Second Year (2013/4): 90 credits: PH2011 **and** PH2012 **and** MT2001 - with passes at grade 11 or better in all;  
 30 credits: MT2002 **or** MT2003 - with a pass at grade 11 or better.

Second Year (2014/5): 60 credits: PH2011 **and** PH2012 - with passes at grade 11 or better;  
 30 credits: MT2501 and MT2503  
 30 credits: one of either: (MT2502 and MT2505) or (MT2506 and MT2507)  
 passed with an average grade of 11 or better in the four 2000-level MT modules

Third and Fourth Years (Maths):  
 30 credits in two of: MT3501, MT3503, MT3504;  
 15 credits: MT3600 **or** MT3601;  
 15 credits: MT4111 **or** MT 4112 (unless PH3080 taken);  
 15 credits: MT4599 (in Fourth Year only);  
 45 further credits: MT3000 - MT4999.

Third Year (Physics): **EITHER (if MT2003 taken in Second Year):**  
 50 credits: PH3007 **and** PH3012 **and** PH3061 **and** PH3062;  
 10 credits: PH3080 (unless MT4111 **or** MT4112 taken).  
**OR (if MT2003 not taken in Second Year):**  
 50 credits: PH3012 **and** PH3061 **and** PH3062 **and** PH3081;  
 10 credits: PH3080 (unless MT4111 **or** MT4112 taken).

Fourth Year (Physics): **EITHER (if MT2003 taken in Second Year):**  
 25 credits: PH4022 **and** PH4039;  
 At least 30 further credits: AS3000-AS5999, PH3000 - PH4110, PH5000 - PH5099.  
**OR (if MT2003 not taken in Second Year):**  
 40 credits: PH3007 **and** PH4022 **and** PH4039;  
 At least 15 further credits: AS3000 - AS5999, PH3000 - PH4110, PH5000 - PH5099.

In total, 240 credits must be achieved at 3000 and 4000 level with at least 90 of these at 4000 level.

## Mathematics & Statistics - Programme Requirements 2014/15 - November 2014

### Mathematics - Single Honours (5-year) MMath

First Year: 20 credits: MT1002.

*(Students without prerequisite for MT1002 will take MT1001 in Semester 1.)*

Second Year (2013/4): 30 credits: MT2001 - with a pass at grade 15 or better;

60 credits in two of: MT2002 - MT2005 - with a pass at grade 15 or better in one of these and a pass at grade 11 better in another.

Second Year (2014/5): 120 credits: MT2501 - MT2508 passed with an average grade of at least 13.5 and no more than two modules with grade below 11.

Third, Fourth and Fifth Years:

45 credits: MT3501 **and** MT3503 **and** MT3504;

15 credits: MT3600 **or** MT3601 **or** MT3606;

30 credits in two of: MT4003, MT4004, MT4509, MT4510, MT4606;

Between 15 and 20 credits: MT3607 **or** MT4111 **or** MT4112 **or** MT5611;

60 credits from: MT5751 - MT5753, MT5757, MT5758, MT5802, MT5806, MT5809, MT5810, MT5821, MT5823 - MT5830, MT5836, MT5990, ID5059;

40 credits: MT5999 (Fifth Year only);

20 further credits from: MT5000 - MT5753, MT5757 - MT5999, ID5059;

Further credits: MT3000 - MT5753, MT5757 - MT5999, ID5059, to a total of 360 credits across Third, Fourth and Fifth Years, except that 30 of these credits in Third or Fourth Year may be substituted by credits from another Level or School, with permission of the Adviser of Studies and any other School involved.

In total, at least 330 credits must be achieved at 3000, 4000 and 5000 level, including at least 120 credits at 5000 level.

**Mathematics - Single Honours MMath (Fast Track)**

Approved candidates will be awarded 60 (2013/4) 90 (2014/5) advanced standing credits

**Mathematics - Single Honours MMath (Fast Track), entrants 2013/4 or earlier:**

**First Year (2013/4):** 20 credits: MT1002;

30 credits: MT2001 - with a pass at grade 15 or better.

**Second Year (2013/14):** 60 credits in two of: MT2002 - MT2005 - with a pass at grade 15 or better in one of these and a pass at grade 11 better in another.

30 credits in two of: MT3501, MT3503, MT3504;

30 further credits: MT2000 - MT4999.

**Second Year (2014/5):**

90 credits: MT2502, MT2504-MT2508;

30 credits in two of: MT3501, MT3503, MT3504.

An average of 13.5 on the 2000-level modules taken (including MT2001) with no more than two below grade 11 required to progress into Honours.

Third and Fourth Years:

15 further credits: MT3501 or MT3503 or MT3504;

15 credits: MT3600 or MT3601 or MT3606;

30 credits: MT4003, MT4004, MT4509, MT4510, MT4606;

Between 15 and 20 credits: MT3607 or MT4111 or MT4112 or MT5611;

60 credits from: MT5751 - MT5753, MT5757, MT5758, MT5802, MT5806, MT5809, MT5810, MT5821, MT5823 - MT5830, MT5836, MT5990, ID5059;

40 credits: MT5999 (Fourth Year only);

20 further credits from: MT5000 - MT5753, MT5757 - MT5999, ID5059;

Further credits: MT3000 - MT573, MT5757 - MT5999, ID5059, to a total of 300 credits from these ranges across Third and Fourth Years.

In total, at least 330 credits must be achieved at 3000, 4000 and 5000 level, including at least 120 credits at 5000 level.

**Mathematics - Single Honours MMath (Fast Track), entrants 2014/5 or later:**

**First Year (2014/5):** 20 credits: MT1002;

10 credits: MT1010;

45 credits: MT2501, MT2503, MT2504

45 credits in three of: MT2505, MT2506, MT2507, MT2508.

An average of 13.5 on the six 2000-level modules with no more than one below grade 11 required to progress into Honours.

**Second Year (2015/16):** 15 credits: MT2502;

15 further credits in: MT2505, MT2506, MT2507, MT2508.

Second, Third and Fourth Years:

45 credits: MT3501 and MT3503 and MT3504;

15 credits: MT3600 or MT3601 or MT3606;

30 credits in two of: MT4003, MT4004, MT4509, MT4510, MT4606;

At least 15 credits: MT3607 or MT4111 or MT4112 or MT5611;

60 credits from: MT5751 - MT5753, MT5757, MT5758, MT5802, MT5806, MT5809, MT5810, MT5821, MT5823 - MT5830, MT5836, MT5990, ID5059;

40 credits: MT5999 (Fourth Year only);

20 further credits from: MT5000 - MT5753, MT5757 - MT5999, ID5059;

Further credits: MT3000 - MT573, MT5757 - MT5999, ID5059, to a total of 330 credits from these ranges across Third and Fourth Years.

In total, at least 330 credits must be achieved at 3000, 4000 and 5000 level, including at least 120 credits at 5000 level.

## Mathematics & Statistics - Programme Requirements 2014/15 - November 2014

### Pure Mathematics - Single Honours (5-year) MMath

First Year: 20 credits: MT1002.

*(Students without prerequisite for MT1002 will take MT1001 in Semester 1.)*

Second Year (2013/4): 60 credits: MT2001 **and** MT2002 - with a pass at grade 15 or better in both.

Second Year (2014/5): 120 credits: MT2501-MT2508 passed with an average grade of at least 13.5 and no more than two modules with grade below 11.

Third, Fourth and Fifth Years: 45 credits: MT3501 **and** MT3503 **and** MT3504;

45 credits: MT3600 **and** MT4003 **and** MT4004;

Between 15 and 20 credits: MT4111 **or** MT4112 **or** MT5611;

60 credits in three of: MT5821, MT5823 - MT5830, MT5836, MT5990;

40 credits: MT5999 (Fifth Year only);

20 further credits from: MT5000 - MT5753, MT5757 - MT5999, ID5059;

Further credits: MT3000 - MT5753, MT5757 - MT5999, ID5059, to a total of 360 credits across Third, Fourth and Fifth Years, except that 30 of these credits in Third or Fourth Year may be substituted by credits from another Level or School, with permission of the Adviser of Studies and any other School involved.

In total, at least 330 credits must be achieved at 3000, 4000 and 5000 level, including at least 120 credits at 5000 level.

**Pure Mathematics - Single Honours MMath (Fast Track)**

Approved candidates will be awarded 60 (2013/4) 90 (2014/5) advanced standing credits

**Pure Mathematics - Single Honours MMath (Fast Track), entrants 2013/4 or earlier:**

First Year (2013/4): 20 credits: MT1002;

30 credits: MT2001 - with a pass at grade 15 or better.

Second Year (2013/4): 30 credits: MT2002 - with a pass at grade 15 or better

30 credits in two of: MT3501, MT3503, MT3504;

30 further credits: MT2000 - MT4999.

Second Year (2014/5): 90 credits: MT2502, MT2504-MT2508;

30 credits in two of: MT3501, MT3503, MT3504.

An average of 13.5 on the 2000-level modules taken (including MT2001) with no more than two below grade 11 required to progress into Honours.

Third and Fourth Years:

15 further credits: MT3501 **or** MT3503 **or** MT3504;

45 credits: MT3600 **and** MT4003 **and** MT4004;

Between 15 and 20 credits: MT4111 **or** MT4112 **or** MT5611;

60 credits in three of: MT5821, MT5823 - MT5830, MT5836, MT5990;

40 credits: MT5999 (Fourth Year only);

20 further credits from: MT5000 - MT5753, MT5757 - MT5999, ID5059;

Further credits: MT3000 - MT5753, MT5757 - MT5999, ID5059, to a total of 300 credits across Third and Fourth Years.

In total, at least 330 credits must be achieved at 3000, 4000 and 5000 level, including at least 120 credits at 5000 level.

**Pure Mathematics - Single Honours MMath (Fast Track), entrants 2014/5 or later:**

First Year (2014/5): 20 credits: MT1002;

10 credits: MT1010

60 credits: MT2501, MT2503, MT2504, MT2505

30 credits in two of: MT2506, MT2507, MT2508.

An average of 13.5 on the six 2000-level modules with no more than one below grade 11 required to progress into Honours.

Second Year (2015/6): 15 credits: MT2502

15 further credits in: MT2506, MT2507, MT2508

Second, Third and Fourth Years:

45 credits: MT3501 **and** MT3503 **and** MT3504;

45 credits: MT3600 **and** MT4003 **and** MT4004;

At least 15 credits: MT4111 **or** MT4112 **or** MT5611;

60 credits in three of: MT5821, MT5823 - MT5830, MT5836, MT5990;

40 credits: MT5999 (Fourth Year only);

20 further credits from: MT5000 - MT5753, MT5757 - MT5999, ID5059;

Further credits: MT3000 - MT5753, MT5757 - MT5999, ID5059, to a total of 330 credits across Third and Fourth Years.

In total, at least 330 credits must be achieved at 3000, 4000 and 5000 level, including at least 120 credits at 5000 level.

## Mathematics & Statistics - Programme Requirements 2014/15 - November 2014

<b>Mathematics 'with' ... - Honours BSc</b>	
(BSc Honours) <b>Mathematics with one of:</b> Geography <sup>w</sup> Available also as 'With Integrated Year Abroad' degree	(MA Honours) <b>Mathematics with either</b> Russian <sup>w</sup> <b>or</b> Spanish <sup>w</sup> <sup>w</sup> Available also as 'With Integrated Year Abroad' degree
<p><b>Mathematics Major element of BSc or MA Honours 'with' degree:</b></p> <p>First Year: 20 credits: MT1002. <i>(Students without prerequisite for MT1002 will take MT1001 in Semester 1.)</i></p> <p>Second Year (2013/4): 30 credits: MT2001 - with a pass at grade 11 or better; 30 credits: MT2002 (for Pure Maths options) <b>or</b> MT2003 (for Applied Maths options) - with a pass at grade 11 or better.</p> <p>Second Year (2014/5): 15 credits: MT2501; At least 45 credits: MT2502 - MT2508 including at least one of the following: (MT2502, MT2503 &amp; MT2505), (MT2502, MT2504 and MT2505), (MT2503, MT2506 and MT2507), (MT2502, MT2504 and MT2508) or (MT2504, MT2505 and MT2508) passed with the average of the best 4 grades on MT2501 - MT2508 being 11 or higher</p> <p>Third and Fourth Years: 30 credits in two of: MT3501, MT3503, MT3504; 15 credits: MT3600 <b>or</b> MT3601; 15 credits: MT4111 <b>or</b> MT 4112; 15 credits: MT4599 (in Fourth Year only); 105 further credits: MT3000 - MT4999.</p> <p>In total, 240 credits must be achieved at 3000 and 4000 level, including at least 90 credits at 4000 level.</p>	

## Mathematics & Statistics - Programme Requirements 2014/15 - November 2014

### Mathematics and Theoretical Physics - Joint Honours M.Phys.

First Year:	60 credits: PH1011 <b>and</b> PH1012 <b>and</b> MT1002. <i>(Students without pre requisite for MT1002 will take MT1001 in Semester 1.)</i> Additional credits to reach 120
Second Year	90 credits: PH2011 <b>and</b> PH2012 <b>and</b> MT2001 - with passes at grade 15 or better in all.
(2013/4):	30 credits: MT2002 <b>or</b> MT2003
Second Year:	60 credits: PH2011 <b>and</b> PH2012 - with passes at grade 15 or better.
(2014/5):	30 credits: MT2501 and MT2503 30 credits: one of either (MT2502 and MT2505) or (MT2506 and MT2507) passed with an average of grade 15 or better in the four 2000-level MT modules
Third Year:	<b>EITHER (if MT2003 taken in Second Year):</b> 50 credits: PH3007 <b>and</b> PH3012 <b>and</b> PH3061 - PH3062; 30 credits: MT3501 <b>and</b> MT3504; At least 10 credits: MT4111 <b>or</b> MT4112 <b>or</b> PH3080; 15 credits: MT4507 <b>or</b> PH4038. 15 further credits: any MT, PH or AS Honours module. <b>OR (if MT2003 not taken in Second Year):</b> 50 credits: PH3012 <b>and</b> PH3061 - PH3062 <b>and</b> PH3081; 30 credits: MT3501 <b>and</b> MT3504; At least 10 credits: MT4111 <b>or</b> MT4112 <b>or</b> PH3080; 15 credits: MT4507 <b>or</b> PH4038. 15 further credits: MT3000 - MT4598 <b>or</b> MT4600 - MT4699.
Fourth Year:	<b>EITHER (if MT2003 taken in Second Year):</b> 40 credits: PH4022 <b>and</b> PH4032 <b>and</b> PH4039; At least 20 further credits: AS3000 - AS4999, PH3000 - PH4109, ID4001; At least 60 further credits: MT3000 - MT4598, MT4600 - MT4699, MT5000 - MT5899. <b>OR (if MT2003 not taken in Second Year):</b> 70 credits: PH3007 <b>and</b> PH4022 <b>and</b> PH4032 <b>and</b> PH4039; At least 45 further credits: MT3000 - MT4598, MT4600 - MT4699, MT5000 - MT5899.
Fifth Year:	At least 40 credits: MT5999 <b>or</b> PH5103; At least 15 credits from: PH5002, PH5003, PH5004, PH5011, PH5012 (unless already taken); At least 40 credits: MT5000 - MT5899 (unless already taken in Fourth Year); Further credits if necessary to a total of 145 across Third, Fourth and Fifth Years from 3000 - , 4000 - and 5000 - level MT modules (except that 30 further credits from MT2000 - MT2999 may be substituted). Further credits if necessary to a total of 145 across Third, Fourth and Fifth Years from 3000 - , 4000 - and 5000 - level PH and AS modules (except that 15 further credits from a physics-based ID4001 may be substituted).
In total, at least 330 credits must be achieved at 3000, 4000 and 5000 level with at least 120 of these at 5000 level.	

**Theoretical Physics and Mathematics - Joint Honours M.Phys. for those who entered in 2013/4**  
**Direct entry to second year** for approved candidates with 120 advanced standing credits

Second Year:	<p><b>EITHER</b>                  20 credits: MT1002;                  90 credits: PH2011 <b>and</b> PH2012 <b>and</b> MT2001 - with passes at grade 15 or better in all.                  At least 10 further credits at 1000- or 2000-level</p> <p><b>OR</b>                  90 credits: PH2011 <b>and</b> PH2012 <b>and</b> MT2001 - with passes at grade 15 or better in all.                  30 credits: MT2002 <b>or</b> MT2003</p>
Third Year:	<p><b>EITHER (if MT2003 taken in Second Year):</b>                  50 credits: PH3007 <b>and</b> PH3012 <b>and</b> PH3061 - PH3062;                  30 credits: MT3501 <b>and</b> MT3504;                  At least 10 credits: MT4111 <b>or</b> MT4112 <b>or</b> PH3080;                  15 credits: MT4507 <b>or</b> PH4038.                  At least 15 further credits: any MT, PH or AS Honours module.</p> <p><b>OR (if MT2003 not taken in Second Year):</b>                  50 credits: PH3012 <b>and</b> PH3061 - PH3062 <b>and</b> PH3081;                  30 credits: MT3501 <b>and</b> MT3504;                  At least 10 credits: MT4111 <b>or</b> MT4112 <b>or</b> PH3080;                  15 credits: MT4507 <b>or</b> PH4038.                  15 further credits: MT3000 - MT4598 <b>or</b> MT4600 - MT4699.</p>
Fourth Year:	<p><b>EITHER (if MT2003 taken in Second Year):</b>                  40 credits: PH4022 <b>and</b> PH4032 <b>and</b> PH4039;                  At least 20 further credits: AS3000 - AS4999, PH3000 - PH4109, ID4001;                  At least 60 further credits: MT3000 - MT4598, MT4600 - MT4699, MT5000 - MT5899.</p> <p><b>OR (if MT2003 not taken in Second Year):</b>                  70 credits: PH3007 <b>and</b> PH4022 <b>and</b> PH4032 <b>and</b> PH4039;                  At least 45 further credits: MT3000 - MT4598, MT4600 - MT4699, MT5000 - MT5899.</p>
Fifth Year:	<p>At least 40 credits: MT5999 <b>or</b> PH5103;                  At least 15 credits from : PH5002, PH5003, PH5004, PH5011, PH5012 (unless already taken);                  At least 40 credits: MT5000 - MT5899 (unless already taken in Fourth Year);                  Further credits if necessary to a total of 145 across Third, Fourth and Fifth Years from 3000 - , 4000 - and 5000 - level MT modules (except that 30 further credits from MT2000 - MT2999 may be substituted).                  Further credits if necessary to a total of 145 across Third, Fourth and Fifth Years from 3000 - , 4000 - and 5000 - level PH and AS modules (except that 15 further credits from a physics-based ID4001 may be substituted).</p>
<p>In total, at least 330 credits must be achieved at 3000, 4000 and 5000 level with at least 120 of these at 5000 level.</p>	

**Theoretical Physics and Mathematics - Joint Honours M.Phys. for those who entered in 2014/5**  
**Direct entry to second year** for approved candidates with 120 advanced standing credits

Second Year:	<p>60 credits: PH2011 <b>and</b> PH2012 with passes at grade 15 or better in all.          30 credits: MT2501 and MT2503          30 credits: in one of either (MT2502 and MT2505) or (MT2506 and MT2507). Passed with an average of grade 15 or better in the 4 2000-level MT modules</p>
Third Year:	<p>50 credits: PH3012 <b>and</b> PH3061 <b>and</b> PH3062 <b>and</b> PH4038          30 credits: MT3501 <b>and</b> MT3504;          15 credits: PH3081 (unless MT2506 and MT2507 were taken in second year)          15 credits: PH3007 (if MT2506 and MT2507 were taken in second year)          At least 10 credits: MT4111 <b>or</b> MT4112 <b>or</b> PH3080          Further credits: any MT, PH or AS Honours modules</p>
Fourth Year:	<p>70 credits: PH3007 (unless taken in Third Year) <b>and</b> PH4022 <b>and</b> PH4032 <b>and</b> PH4039;          Further credits: any MT, PH, AS Honours modules or ID4001</p>
Fifth Year:	<p>At least 40 credits: MT5999 <b>or</b> PH5103;          At least 15 credits from: PH5002, PH5003, PH5004, PH5011, PH5012 (unless already taken);          At least 40 credits: MT5000 - MT5899 (unless already taken in Fourth Year);          Further credits: any MT, PH or AS Honours modules          At least 145 credits across Third, Fourth and Fifth Years from 3000-, 4000- and 5000-level MT modules (except that 30 further credits from MT2000 - MT2999 may be substituted)          At least 145 credits across Third, Fourth and Fifth Years from 3000-, 4000- and 5000-level PH and AS modules (except that 15 further credits from a Physics-based ID4001 may be substituted)</p>
<p>In total, at least 330 credits must be achieved at 3000, 4000 and 5000 level with at least 120 of these at 5000 level.</p>	

## Mathematics & Statistics - Programme Requirements 2014/15 - November 2014

### Chemistry with Mathematics - Honours M.Chem

First Year:	80 credits: CH1401 <b>and</b> CH1402 <b>and</b> CH1601 <b>and</b> MT1002. <i>(Students without prerequisite for MT1002 will take MT1001 in Semester 1.)</i>
Second Year (2013/4):	90 credits: CH2501 <b>and</b> CH2701 <b>and</b> MT2001 - with passes at grade 15 or better in all three; 30 credits: MT2002 (for Pure Maths options) or MT2003 (for Applied Maths options).
Second Year (2014/5):	90 credits: CH2501 <b>and</b> CH2701 <b>and</b> MT2001 - with passes at grade 15 or better in all three; 15 credits: MT2501 - with a pass at grade 15 or better. At least 45 credits: MT2502 - MT2508 in at least one of the following: (MT2502, MT2503 and MT2505), (MT2502, MT2504 and MT2505), (MT2502, MT2504 and MT2508), (MT2503, MT2506 and MT2507), or (MT2504, MT2505 and MT2508) - passed at grades of 11 or better
Third Year (Chemistry):	20 credits: CH3441; 60 credits: CH3431, CH3514, CH3512, CH3521, CH3615, CH3621, CH3712, CH3715, CH3717, CH3721;
Fourth Year (Chemistry):	40 credits: CH4442; 30 credits: CH4514, CH4515, CH4614, CH4612, CH4613, CH4714, CH4712, CH4713;
Third and Fourth Years (Maths):	30 credits in two of: MT3501, MT3503, MT3504; 15 credits: MT3600 <b>or</b> MT3601; 45 further credits: MT3000 - MT4598, MT4600 - MT4999.
Fifth Year:	90 credits: CH5441 <b>and</b> CH5461 <b>and</b> CH5711 <b>and</b> CH5712 <b>and</b> CH5713 <b>and</b> CH5714; 30 credits: CH5511, CH5516 - CH5518, CH5611 - CH5616, CH5717 - CH5718.

### Statistics - Single Honours BSc or MA

First Year:	20 credits: MT1002. <i>(Students without prerequisite for MT1002 will take MT1001 in Semester 1.)</i>
Second Year (2013/4):	60 credits: MT2001 <b>and</b> MT2004 - with passes at grade 11 or better in both.
Second Year (2014/5):	60 credits: MT2501, MT2503, MT2504 and MT2508, passed with an average grade of 11 or higher in these modules.
Third and Fourth Years:	Between 60 and 70 credits: MT3501 <b>and</b> MT3606 <b>and</b> (MT4606 <b>or</b> MT5701) <b>and</b> (MT4607 <b>or</b> MT5753); 15 credits: MT3607 (recommended) or MT4111 or MT4112 30 or 35 credits in two of: (MT4531 <b>or</b> MT5831), MT4608, MT4609; 15 credits: MT4599 (in Fourth Year only) Further credits: MT3000 - MT4999 to a total of 240 credits across Third and Fourth Years, except that 30 of these credits in Third Year may be substituted by credits from another Level or School, with permission of the Adviser of Studies and any other School involved.
In total, at least 210 credits must be achieved at 3000 and 4000 level, including at least 90 credits at 4000 level.	

## Mathematics & Statistics - Programme Requirements 2014/15 - November 2014

<b>Statistics - Joint Honours BSc or MA</b>	
(BSc Honours) <b>Statistics and one of:</b> Biology, Computer Science, Economics, Geography, Internet Computer Science <sup>N</sup> , Logic & Philosophy of Science, Management Science, Psychology <sup>N</sup> Not available to entrants from 2011-12	(MA Honours) <b>Statistics and either</b> Economics <b>or</b> Philosophy <b>or</b> Psychology
<p><b>Statistics element of Joint Honours BSc or MA</b></p> <p>First Year:           20 credits: MT1002.                                                <i>(Students without prerequisite for MT1002 will take MT1001 in Semester 1.)</i></p> <p>Second Year (2013/4):   60 credits: MT2001 <b>and</b> MT2004 - with passes at grade 11 or better in both.                            Second Year (2014/5):   60 credits: MT2501, MT2503, MT2504 and MT2508, passed with an average grade of 11 or higher in these modules.</p> <p>Third and Fourth Years:</p> <p style="padding-left: 40px;">30 credits: MT3501 <b>and</b> MT3606;                            Between 30 and 40 credits in two of: MT3706, (MT4531 <b>or</b> MT5831), (MT4606 <b>or</b> MT5701), (MT4607 <b>or</b> MT5753), MT4608, MT4609;                            15 credits: MT4599 (in Fourth Year only);                            Further credits: MT3000 - MT4999 to a total of 120 credits.</p> <p>In total, 240 credits must be achieved at 3000 and 4000 level, including at least 90 credits at 4000 level.</p>	

<b>Statistics - Single Honours (5-year) MMath</b>
<p>First Year:           20 credits: MT1002.                                                <i>(Students without prerequisite for MT1002 will take MT1001 in Semester 1.)</i></p> <p>Second Year (2013/4):   60 credits: MT2001 <b>and</b> MT2004 - with a pass at grade 15 or better in both.                            Second Year (2014/5):   120 credits: MT2501-MT2508 passed with an average grade of at least 13.5 and no more than two modules with grade below 11.</p> <p>Third, Fourth and Fifth Years:</p> <p style="padding-left: 40px;">65 credits: MT3501 <b>and</b> MT3606 <b>and</b> MT3607 <b>and</b> MT5753;                            15 credits: MT4527 <b>or</b> MT4608;                            20 credits: MT5701 <b>or</b> MT5831;                            Between 30 and 40 credits in two of: MT5751, MT5752, MT5757, MT5758, ID5059;                            40 credits: MT5999 (on a statistical topic - Fourth Year only);                            Further credits: MT5000 - MT5753, MT5757 - MT5999, ID5059, if necessary, to a total of at least 120 credits from these ranges;                            Further credits: MT3000 - MT5753, MT5757 - MT5999, ID5059, to a total of 360 credits across Third, Fourth and Fifth Years, except that 30 of these credits in Third or Fourth Year may be substituted by credits from another Level or School, with permission of the Adviser of Studies and any other School involved.</p> <p>In total, at least 330 credits must be achieved at 3000, 4000 and 5000 level, including at least 120 credits at 5000 level.</p>

## Mathematics & Statistics - Programme Requirements 2014/15 - November 2014

### Statistics - Single Honours MMath (Fast Track)

Approved candidates will be awarded 60 (2013/4) 90 (2014/5) advanced standing credits

#### Statistics - Single Honours MMath (Fast Track), entrants 2013/4 or earlier:

First Year (2013/4): 20 credits: MT1002;

30 credits: MT2001 - with a pass at grade 15 or better.

Second Year (2013/4): 30 credits: MT2004 - with a pass at grade 15 or better

15 credits: MT3501;

15 further credits: MT3000 -MT4999.

Second Year (2014/5): 90 credits: MT2502, MT2504-MT2508;

15 credits: MT3501;

15 further credits: MT3000-MT4999.

An average of 13.5 on the 2000-level modules taken (including MT2001) with no more than two below grade 11 required to progress into Honours.

Third and Fourth Years:

50 credits: MT3606 **and** MT3607 **and** MT5753;

15 credits: MT4527 **or** MT4608;

20 credits: MT5701 **or** MT5831;

Between 30 and 40 credits in two of: MT5751, MT5752, MT5757, MT5758, ID5059;

40 credits: MT5999 (on a statistical topic - Fourth Year only);

Further credits: MT5000 - MT5753, MT5757 - MT5999, ID5059, if necessary, to a total of at least 120 credits from these ranges;

Further credits: MT3000 - MT5753, MT5757 - MT5999, ID5059, to a total of 300 credits across Third and Fourth Years.

In total, at least 330 credits must be achieved at 3000, 4000 and 5000 level, including at least 120 credits at 5000 level.

#### Statistics - Single Honours MMath (Fast Track), entrants 2014/5 or later:

First Year (2014/5): 20 credits: MT1002;

10 credits: MT1010

60 credits: MT2501, MT2503, MT2504, MT2508

30 credits in two of: MT2505, MT2506, MT2507

An average of 13.5 on the six 2000-level modules with no more than one below grade 11 required to progress into Honours.

Second Year (2015/6): 15 credits: MT2502

15 further credits: MT2505, MT2506, MT2507

Second, Third and Fourth Years:

15 credits: MT3501;

50 credits: MT3606 **and** MT3607 **and** MT5753;

15 credits: MT4527 **or** MT4608;

20 credits: MT5701 **or** MT5831;

Between 30 and 40 credits in two of: MT5751, MT5752, MT5757, MT5758, ID5059;

40 credits: MT5999 (on a statistical topic - Fourth Year only) ;

Further credits: MT5000 - MT5753, MT5757 - MT5999, ID5059, if necessary, to a total of at least 120 credits from these ranges;

Further credits: MT3000 - MT5753, MT5757 - MT5999, ID5059, to a total of 330 credits across Third and Fourth Years.

In total, at least 330 credits must be achieved at 3000, 4000 and 5000 level, including at least 120 credits at 5000 level.

Students still completing degree programmes as defined in previous Course Catalogues should discuss their module selections with their Honours Adviser(s).