Program Enrolment Checklist (PEC)

Are you on track?

BACHELOR OF MATHEMATICS – 2010-2013

It is the student’s responsibility to ensure that they meet the requirements of their program

This PEC is for students who have commenced the Bachelor of Mathematics in 2010-2012, or who commenced prior to 2010 and transitioned to this revised program structure.

To satisfy the requirements for the Bachelor of Mathematics degree program you must complete:

- A total of 240 units (24 courses @ 10 units each)
- No more than 100 units @ 1000 level
- 60 units of Core Courses in Standard Pathway, 70 Units of Core Courses in Alternate Pathway
- A major of at least 80 units with 40 units @ 3000 level
- A minimum of 60 units undertaken @ 3000 level
- 110 units Electives for Alternate Pathway and 120 units of Electives for Standard pathway.

YOU SHOULD ALSO REFER TO THE DEGREE RULES GOVERNING YOUR AWARD AT http://www.newcastle.edu.au/program/10237.html

<table>
<thead>
<tr>
<th>CORE COURSES - 1000 Level – Standard Pathway</th>
<th>Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH1210 Mathematical Discovery 1</td>
<td>1</td>
</tr>
<tr>
<td>MATH1220 Mathematical Discovery 2</td>
<td>2</td>
</tr>
<tr>
<td>MATH1800 Mathematical Modelling</td>
<td>2</td>
</tr>
<tr>
<td>STAT1070 Statistics for the Sciences</td>
<td>Both</td>
</tr>
</tbody>
</table>

or

<table>
<thead>
<tr>
<th>CORE COURSES - 1000 Level – Alternate Pathway</th>
<th>Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH1110 Mathematics 1</td>
<td>Both</td>
</tr>
<tr>
<td>MATH1120 Mathematics 2</td>
<td>Both</td>
</tr>
<tr>
<td>MATH1510 Discrete Mathematics</td>
<td>2</td>
</tr>
<tr>
<td>MATH1800 Mathematical Modelling</td>
<td>2</td>
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<tr>
<td>STAT1070 Statistics for the Science</td>
<td>Both</td>
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</table>

plus

<table>
<thead>
<tr>
<th>CORE COURSES - 2000 Level</th>
<th>Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH2310 Calculus of Science and Engineering</td>
<td>Both</td>
</tr>
<tr>
<td>MATH2320 Linear Algebra</td>
<td>2</td>
</tr>
</tbody>
</table>
**BACHELOR OF MATHEMATICS – 2010-2013**

*Please note: Students must complete an 80 units major sequence including at least 40 units @ 3000 level and all compulsory courses for that major.*

### MAJORS

<table>
<thead>
<tr>
<th>Applied Mathematics</th>
<th>Pure Mathematics</th>
<th>Statistics</th>
<th>Studies in Mathematics &amp; Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compulsory Courses</td>
<td>Sem</td>
<td>Compulsory Courses</td>
<td>Sem</td>
</tr>
<tr>
<td>MATH1800</td>
<td>2</td>
<td>MATH2310</td>
<td>Both</td>
</tr>
<tr>
<td>STAT1070</td>
<td>Both</td>
<td>MATH2320</td>
<td>2</td>
</tr>
<tr>
<td>MATH2730</td>
<td>1</td>
<td>MATH2330</td>
<td>1</td>
</tr>
<tr>
<td>MATH2800</td>
<td>2</td>
<td>PLUS</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>MATH3010</td>
<td>1</td>
</tr>
</tbody>
</table>

**Compulsory Courses**

- **MATH1800** Mathematical Modelling
- **STAT1070** Statistics for the Sciences
- **MATH2730** Operations Research 1
- **MATH2800** Differential Equations

**Pure Mathematics**

- **MATH2310** Calculus of Science & Engineering
- **MATH2320** Linear Algebra
- **MATH2330** Analysis

**Statistics**

- **MATH1800** Mathematical Modelling
- **STAT1070** Statistics for the Sciences
- **STAT2000** Applied Statistics and Data Analysis

**Studies in Mathematics & Statistics**

- **MATH2310** Calculus of Science & Engineering
- **MATH2320** Linear Algebra
- **STAT2010** Fundamentals of Statistics
- **MATH3010** Statistical Inference

**Choose 20 units @ 2000 level**

- MATH3010 Logic and Set Theory
- MATH3170 Advanced Differential Equations
- MATH3180 Topology
- MATH3200 An Intro to Hilbert Spaces
- MATH3242 Complex Analysis
- MATH3510 Combin. & Graph Theory
- MATH3700 Advanced Differential Equations
- MATH3820 Numerical Methods
- MATH3850 Industrial Project

**Choose 40 units of 3000 level Directed courses**

- MATH3120 Algebra
- MATH3170 Number Theory
- MATH3180 Topology
- MATH3200 An Intro to Hilbert Spaces
- MATH3242 Complex Analysis
- MATH3510 Combin. & Graph Theory
- MATH3700 Advanced Differential Equations
- MATH3820 Numerical Methods
- MATH3850 Industrial Project

**Choose 10 units of 2000 level Directed courses**

- MATH2600 Modern Math Computation
- MATH2800 Differential Equations

**Choose 40 units of 3000 level Directed courses**

- MATH3120 Algebra
- MATH3170 Number Theory
- MATH3180 Topology
- MATH3200 An Intro to Hilbert Spaces
- MATH3242 Complex Analysis
- MATH3510 Combin. & Graph Theory
- MATH3700 Advanced Differential Equations
- MATH3820 Numerical Methods
- MATH3850 Industrial Project

**Choose 30 units of 3000 level Directed courses**

- MATH3010 Logic and Set Theory
- MATH3170 Advanced Differential Equations
- MATH3200 An Intro to Hilbert Spaces
- MATH3242 Complex Analysis
- MATH3510 Combin. & Graph Theory
- MATH3700 Advanced Differential Equations
- MATH3820 Numerical Methods
- MATH3850 Industrial Project

**Choose 40 units @ 3000 level**

- MATH3120 Algebra
- MATH3170 Number Theory
- MATH3200 An Intro to Hilbert Spaces
- MATH3210 Directed Studies in Math
- MATH3242 Complex Analysis
- MATH3400 Research topics in Math
- MATH3510 Combin. & Graph Theory
- MATH3600 Advanced Differential Equations
- MATH3820 Numerical Methods
- MATH3830 Operations Research 2
- MATH3840 Optimisation in Busi & Ind
- MATH3850 Industrial Project
- MATH3860 Optimisation in Busi & Ind
- MATH3870 Industrial Project
- MATH3880 Industrial Project
- MATH3890 Industrial Project

**Choose 20 units @ 2000 level**

- MATH2310 Calculus of Science & Engineering
- MATH2320 Linear Algebra
- STAT2010 Fundamentals of Statistics

**Choose 40 units @ 3000 level**

- MATH2310 Calculus of Science & Engineering
- MATH2320 Linear Algebra
- STAT2010 Fundamentals of Statistics

**Choose 20 units @ 2000 level**

- MATH3010 Logic and Set Theory
- MATH3170 Advanced Differential Equations
- MATH3200 An Intro to Hilbert Spaces
- MATH3242 Complex Analysis
- MATH3510 Combin. & Graph Theory
- MATH3700 Advanced Differential Equations
- MATH3820 Numerical Methods
- MATH3850 Industrial Project

**Choose 40 units @ 3000 level**

- MATH3010 Logic and Set Theory
- MATH3170 Advanced Differential Equations
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- MATH3242 Complex Analysis
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- MATH3510 Combin. & Graph Theory
- MATH3600 Advanced Differential Equations
- MATH3820 Numerical Methods
- MATH3830 Operations Research 2
- MATH3840 Optimisation in Busi & Ind
- MATH3850 Industrial Project
- MATH3860 Optimisation in Busi & Ind
- MATH3870 Industrial Project
- MATH3880 Industrial Project
- MATH3890 Industrial Project

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