Artificial Intelligence wIE MEng (Hons) options 2018-2019

If you wish to take an external unit which is not listed on your programme course unit list you must get permission from your Year Tutor. This applies for every year of your programme. If your choices do not meet the School’s course unit and theme requirements you will be contacted and be required to change your choices.

Level 1 - compulsory units
All of the units in this pool are mandatory.

<table>
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<th>Code</th>
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<tr>
<td>COMP10120</td>
<td>First Year Team Project</td>
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<tr>
<td>COMP11120</td>
<td>Mathematical Techniques for Computer Science</td>
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<tr>
<td>COMP11212</td>
<td>Fundamentals of Computation</td>
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<td>COMP12112</td>
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<tr>
<td>COMP14112</td>
<td>Fundamentals of Artificial Intelligence</td>
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<tr>
<td>COMP15111</td>
<td>Fundamentals of Computer Architecture</td>
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<td>COMP16121</td>
<td>Object Oriented Programming with Java 1</td>
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<tr>
<td>COMP18112</td>
<td>Fundamentals of Distributed Systems</td>
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Level 2 options
MANDATORY UNITS - 80 CREDITS
OPTIONAL UNITS - 40 CREDITS

From the optional lists you must choose 10 credits from semester one and 30 credits from semester two. This programme requires 2 themes to be completed from the following list.

* Learning and Search in Artificial Intelligence (COMP24111 & COMP34120)
* Natural Language, Representation and Reasoning (COMP24412 & COMP34412)
* Visual Computing (COMP27112, COMP37111 & COMP37212)

Level 2 - compulsory units
All of the units in this pool are mandatory.

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<td>Fundamentals of Databases</td>
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<td>Web and Distributed Systems</td>
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<td>COMP23311</td>
<td>Software Engineering 1</td>
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<td>Agile Methods</td>
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<tr>
<td>COMP23412</td>
<td>Software Engineering 2</td>
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<tr>
<td>COMP24111</td>
<td>Machine Learning and Optimisation</td>
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<td>COMP24412</td>
<td>Symbolic AI</td>
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<td>Natural Language, Representation and Reasoning</td>
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<tr>
<td>COMP25111</td>
<td>Operating Systems</td>
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<tr>
<td>COMP26120</td>
<td>Algorithms and Imperative Programming</td>
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<td>Computer Languages</td>
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Level 2 - option pool 1
From this option pool choose a maximum of 10 credits and a minimum of 0 credits.

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<td>Rigorous Development</td>
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<td>Processor Microarchitecture</td>
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<td>System-on-Chip</td>
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Level 2 - option pool 2
From this option pool choose a maximum of 30 credits and a minimum of 20 credits.

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<td>COMP27112</td>
<td>Computer Graphics and Image Processing</td>
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<td>Visual Computing</td>
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<tr>
<td>COMP28112</td>
<td>Distributed Computing</td>
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<td>Web and Distributed Systems</td>
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<tr>
<td>COMP28512</td>
<td>Mobile Systems</td>
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<td>Mobile Computing and Networks</td>
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From this option pool choose a maximum of 10 credits and a minimum of 0 credits.

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<td>Introduction to Corporate Finance &amp; Financial Instruments</td>
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<td>New Product Development and Innovation</td>
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### Level 3 options

**MANDATORY UNITS - 60 CREDITS**

**OPTIONAL UNITS - 60 CREDITS**

From the optional lists you must choose 30 credits from semester one and 30 credits from semester two. This programme requires 2 themes to be completed from the following list.

* Learning and Search in Artificial Intelligence (COMP24111 & COMP34120)
* Natural Language, Representation and Reasoning (COMP24412 & COMP34412)
* Visual Computing (COMP27112, COMP37111 & COMP37212)

### Level 3 - compulsory units

All of the units in this pool are mandatory.

<table>
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<td>MCEL30032</td>
<td>Managing Finance in Enterprises for Computer Scientists</td>
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### Level 3 - option pool 1

From this option pool choose a maximum of 30 credits and a minimum of 20 credits.

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<td>COMP32512</td>
<td>User Experience</td>
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<td>COMP33711</td>
<td>Agile Software Engineering</td>
<td>10</td>
<td>Agile Methods</td>
</tr>
<tr>
<td>COMP35111</td>
<td>Advanced Algorithms 1</td>
<td>10</td>
<td>Programming and Algorithms</td>
</tr>
<tr>
<td>COMP37111</td>
<td>Advanced Computer Graphics</td>
<td>10</td>
<td>Visual Computing</td>
</tr>
<tr>
<td>COMP38411</td>
<td>Cryptography and Network Security</td>
<td>10</td>
<td>Mobile Computing and Networks</td>
</tr>
</tbody>
</table>
Level 3 - option pool 2
From this option pool choose a maximum of 30 credits and a minimum of 20 credits.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
<th>Theme</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMP34412</td>
<td>Natural Language Systems</td>
<td>10</td>
<td>Natural Language, Representation and Reasoning</td>
</tr>
<tr>
<td>COMP35112</td>
<td>Chip Multiprocessors</td>
<td>10</td>
<td>Computer Architecture</td>
</tr>
<tr>
<td>COMP36212</td>
<td>Advanced Algorithms 2</td>
<td>10</td>
<td>Programming and Algorithms</td>
</tr>
<tr>
<td>COMP36512</td>
<td>Compilers</td>
<td>10</td>
<td>Computer Languages</td>
</tr>
<tr>
<td>COMP37212</td>
<td>Computer Vision</td>
<td>10</td>
<td>Visual Computing</td>
</tr>
<tr>
<td>COMP32412</td>
<td>The Internet of Things: Architectures and Applications</td>
<td>10</td>
<td>Web and Distributed Systems</td>
</tr>
</tbody>
</table>

Level 3 - option pool 3
From this option pool choose a maximum of 40 credits and a minimum of 0 credits.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
<th>Theme</th>
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</thead>
<tbody>
<tr>
<td>COMP38120</td>
<td>AI and Games</td>
<td>20</td>
<td>Learning and Search in Artificial Intelligence</td>
</tr>
<tr>
<td>COMP38120</td>
<td>Documents, Services and Data on the Web</td>
<td>20</td>
<td>Web and Distributed Systems</td>
</tr>
</tbody>
</table>

You should aim to do 45 or 60 credits in each of semester 1 and semester 2.

Pools 1 to 4 map to periods 1 to 4 in the PGT timetable. You must pick exactly one module from Pool 5 avoiding timetable clashes.

Mandatory units - 40 credits
Optional units - 90 credits (6 course units)

Level 4 - compulsory units
All of the units in this pool are mandatory.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMP40901</td>
<td>UG MEng Industrial Project</td>
<td>25</td>
</tr>
<tr>
<td>MCEL40042</td>
<td>Business Feasibility Study</td>
<td>15</td>
</tr>
</tbody>
</table>

Level 4 - option pool 1
From this option pool choose a maximum of 30 credits and a minimum of 15 credits.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMP60411</td>
<td>Modelling data on the web</td>
<td>15</td>
</tr>
<tr>
<td>COMP60611</td>
<td>Parallel Programs and their Performance</td>
<td>15</td>
</tr>
<tr>
<td>COMP60711</td>
<td>Data Engineering</td>
<td>15</td>
</tr>
<tr>
<td>COMP61011</td>
<td>Foundations of Machine Learning</td>
<td>15</td>
</tr>
<tr>
<td>COMP61411</td>
<td>Cryptography</td>
<td>15</td>
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</tbody>
</table>

Level 4 - option pool 2
From this option pool choose a maximum of 30 credits and a minimum of 15 credits.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMP60621</td>
<td>Designing for Parallelism and Future Multi-core Computing</td>
<td>15</td>
</tr>
<tr>
<td>COMP61021</td>
<td>Modelling and visualization of high-dimensional data</td>
<td>15</td>
</tr>
<tr>
<td>COMP61421</td>
<td>Cyber Security</td>
<td>15</td>
</tr>
<tr>
<td>COMP62421</td>
<td>Querying Data on the Web</td>
<td>15</td>
</tr>
<tr>
<td>COMP62532</td>
<td>Component-based Software Development</td>
<td>15</td>
</tr>
<tr>
<td>COMP62521</td>
<td>Agile and Test-Driven Development</td>
<td>15</td>
</tr>
</tbody>
</table>

Level 4 - option pool 3
From this option pool choose a maximum of 30 credits and a minimum of 0 credits.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMP60332</td>
<td>Automated Reasoning and Verification</td>
<td>15</td>
</tr>
<tr>
<td>COMP60532</td>
<td>Principles of Digital Biology</td>
<td>15</td>
</tr>
<tr>
<td>COMP61232</td>
<td>Mobile and Energy Efficient Systems</td>
<td>15</td>
</tr>
</tbody>
</table>
Level 4 - option pool 4
From this option pool choose a maximum of 30 credits and a minimum of 0 credits.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMP60542</td>
<td>Introduction to Health Informatics</td>
<td>15</td>
</tr>
<tr>
<td>COMP61242</td>
<td>Mobile Communications</td>
<td>15</td>
</tr>
<tr>
<td>COMP61342</td>
<td>Computer Vision</td>
<td>15</td>
</tr>
</tbody>
</table>

Level 4 - option pool 5
From this option pool choose 15 credits.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMAN60092</td>
<td>Risk, Performance and Decision Analysis</td>
<td>15</td>
</tr>
<tr>
<td>BMAN60342</td>
<td>Data Analytics for Business Decision Making</td>
<td>15</td>
</tr>
<tr>
<td>BMAN70391</td>
<td>Strategic Project Organising</td>
<td>15</td>
</tr>
<tr>
<td>BMAN71652</td>
<td>Information and Knowledge Management</td>
<td>15</td>
</tr>
<tr>
<td>BMAN73272</td>
<td>Decision Behaviour, Analysis and Support</td>
<td>15</td>
</tr>
<tr>
<td>MCEL63402</td>
<td>Essential Risk Management for Business</td>
<td>15</td>
</tr>
</tbody>
</table>