Computer Science MEng (Hons) options 2019-2020

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>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMP10120</td>
<td>First Year Team Project</td>
<td>20</td>
</tr>
<tr>
<td>COMP11120</td>
<td>Mathematical Techniques for Computer Science</td>
<td>20</td>
</tr>
<tr>
<td>COMP11212</td>
<td>Fundamentals of Computation</td>
<td>10</td>
</tr>
<tr>
<td>COMP12111</td>
<td>Fundamentals of Computer Engineering</td>
<td>10</td>
</tr>
<tr>
<td>COMP15111</td>
<td>Fundamentals of Computer Architecture</td>
<td>10</td>
</tr>
<tr>
<td>COMP13212</td>
<td>Data Science</td>
<td>10</td>
</tr>
<tr>
<td>COMP15212</td>
<td>Operating Systems</td>
<td>10</td>
</tr>
<tr>
<td>COMP16321</td>
<td>Introduction to Programming 1</td>
<td>20</td>
</tr>
<tr>
<td>COMP16412</td>
<td>Introduction to Programming 2</td>
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</tr>
</tbody>
</table>

**Level 2 options**

MANDATORY UNITS - 60 CREDITS
OPTIONAL UNITS - 60 CREDITS

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.

From the optional lists you must choose 20 credits from semester one and 40 credits from semester two.

**Level 2 - compulsory units**

All of the units in this pool are mandatory.

<table>
<thead>
<tr>
<th>Code</th>
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<th>Theme</th>
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<tbody>
<tr>
<td>COMP23111</td>
<td>Fundamentals of Databases</td>
<td>10</td>
<td>Web and Distributed Systems</td>
</tr>
<tr>
<td>COMP23311</td>
<td>Software Engineering 1</td>
<td>10</td>
<td>Agile Methods</td>
</tr>
<tr>
<td>COMP23412</td>
<td>Software Engineering 2</td>
<td>10</td>
<td>Agile Methods</td>
</tr>
<tr>
<td>COMP25111</td>
<td>Operating Systems</td>
<td>10</td>
<td>Computer Architecture</td>
</tr>
<tr>
<td>COMP26120</td>
<td>Algorithms and Imperative Programming</td>
<td>20</td>
<td>Computer Languages</td>
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</tbody>
</table>

**Level 2 - option pool 1**

From this option pool choose a maximum of 20 credits and a minimum of 10 credits.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
<th>Theme</th>
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<tbody>
<tr>
<td>COMP21111</td>
<td>Logic and Modelling</td>
<td>10</td>
<td>Rigorous Development</td>
</tr>
<tr>
<td>COMP22111</td>
<td>Processor Microarchitecture</td>
<td>10</td>
<td>System-on-Chip</td>
</tr>
<tr>
<td>COMP24111</td>
<td>Machine Learning and Optimisation</td>
<td>10</td>
<td>Learning and Search in Artificial Intelligence</td>
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</tbody>
</table>

**Level 2 - option pool 2**

From this option pool choose a maximum of 40 credits and a minimum of 30 credits.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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<th>Theme</th>
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<tbody>
<tr>
<td>COMP22712</td>
<td>Microcontrollers</td>
<td>10</td>
<td>None</td>
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<tr>
<td>COMP24412</td>
<td>Symbolic AI</td>
<td>10</td>
<td>Natural Language, Representation and Reasoning</td>
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<tr>
<td>COMP25212</td>
<td>System Architecture</td>
<td>10</td>
<td>Computer Architecture</td>
</tr>
<tr>
<td>COMP27112</td>
<td>Computer Graphics and Image Processing</td>
<td>10</td>
<td>Visual Computing</td>
</tr>
<tr>
<td>COMP28112</td>
<td>Distributed Computing</td>
<td>10</td>
<td>Web and Distributed Systems</td>
</tr>
<tr>
<td>COMP28512</td>
<td>Mobile Systems</td>
<td>10</td>
<td>Mobile Computing and Networks</td>
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</tbody>
</table>

**Level 2 - option pool 3**
From this option pool choose a maximum of 20 credits and a minimum of 0 credits.

<table>
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<td>BMAN10011</td>
<td>Fundamentals of Management</td>
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<tr>
<td>BMAN10252</td>
<td>Fundamentals of Technological Change</td>
<td>10</td>
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<tr>
<td>BMAN10552</td>
<td>Fundamentals of Finance</td>
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<tr>
<td>BMAN10612</td>
<td>Business Economics</td>
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<tr>
<td>BMAN10621B</td>
<td>Fundamentals of Financial Reporting</td>
<td>10</td>
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<td>BMAN10632</td>
<td>Fundamentals of Accounting</td>
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<tr>
<td>BMAN20242</td>
<td>Introduction to Corporate Finance &amp; Financial Instruments</td>
<td>10</td>
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<tr>
<td>BMAN20792</td>
<td>Technology Strategy &amp; Innovation 1</td>
<td>10</td>
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<tr>
<td>BMAN20811</td>
<td>Managing Business Operations</td>
<td>10</td>
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<tr>
<td>BMAN20821</td>
<td>New Product Development and Innovation</td>
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<tr>
<td>BMAN20832</td>
<td>Marketing</td>
<td>10</td>
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<tr>
<td>BMAN21012</td>
<td>Global Contexts of Business and Management</td>
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<td>BMAN24501</td>
<td>Chinese Business</td>
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<td>BMAN24521</td>
<td>Operations &amp; Employment</td>
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<td>BMAN24571</td>
<td>Work Psychology For Career Success</td>
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<td>Science and the Modern World</td>
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<td>UCIL20002</td>
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<td>UCIL20021</td>
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<td>UCIL20092</td>
<td>The Crisis of Nature: Issues in Environmental History</td>
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<td>UCIL20112</td>
<td>Understanding Mental Health</td>
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<td>AI: Robot Overlord, Replacement or Colleague?</td>
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<td>UCIL20132</td>
<td>Trust and Security in a Digital World: From Fake News to Cyber Criminals</td>
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<td>UCIL20142</td>
<td>From Antarctica to Outer Space: Surviving and Thriving in Extremes</td>
<td>10</td>
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<tr>
<td>UCIL20211</td>
<td>Are we alone?</td>
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<td>UCIL20282</td>
<td>The Information Age</td>
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<td>UCIL20331</td>
<td>From Cholera to Aids: A Global History of Epidemics</td>
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<td>UCIL20992</td>
<td>Crisis of Nature: Issues in Environmental History</td>
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<tr>
<td>UCIL20882</td>
<td>An Introduction to Current Topics in Biology</td>
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<td>UCIL20892</td>
<td>Current Topics in Biology</td>
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<td>Leadership of Learning</td>
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<td>Bioethics: Contemporary Issues in Science and Biomedicine</td>
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<td>UCIL21301</td>
<td>Communicating with Confidence</td>
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<td>UCIL21302</td>
<td>Communicating with Confidence</td>
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<td>UCIL21331</td>
<td>Becoming an inspirational individual</td>
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<td>UCIL22001</td>
<td>Essential Enterprise</td>
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<tr>
<td>UCIL22002</td>
<td>Essential Enterprise</td>
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<td>UCIL22501</td>
<td>Global Citizenship and Sustainability</td>
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<td>UCIL23102</td>
<td>Science and Civilisation in East Asia</td>
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<td>UCIL23302</td>
<td>Science and Civilisation in East Asia</td>
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<td>UCIL24002</td>
<td>The Art of Enterprise</td>
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<td>UCIL26002</td>
<td>Digital Society - Online</td>
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<td>UCIL29002</td>
<td>Physics &amp; The Grand Challenges of Today</td>
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<td>ULAR10010</td>
<td>Beginners' Arabic</td>
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<tr>
<td>ULAR10020</td>
<td>Elementary Arabic</td>
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<tr>
<td>ULAR10031</td>
<td>Introduction to spoken Arabic</td>
<td>10</td>
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<td>ULAR10032</td>
<td>Introduction to Spoken Arabic</td>
<td>10</td>
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<td>ULAR20110</td>
<td>Intermediate Arabic</td>
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<td>ULAR20210</td>
<td>Pre-intermediate Arabic</td>
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<td>Intro to British Sign Language S1</td>
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<td>ULBS20012</td>
<td>Introduction to British Sign Language - Part 1</td>
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<td>Introduction to British Sign Language - Part 2</td>
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<td>ULCH10022</td>
<td>Introduction to Spoken Chinese</td>
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<td>ULCH10020</td>
<td>Beginners' Mandarin Chinese</td>
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<td>ULCH20020</td>
<td>Post-intermediate Mandarin Chinese</td>
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<td>Pre-intermediate Mandarin Chinese</td>
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<td>ULDU10010</td>
<td>Beginners' Dutch</td>
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<tr>
<td>ULDU20010</td>
<td>Intermediate Dutch</td>
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<td>ULFR10010</td>
<td>Beginners' French</td>
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<td>ULFR10021</td>
<td>Introductory French</td>
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<td>ULFR10022</td>
<td>Introductory French</td>
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<td>ULFR20010</td>
<td>Intermediate French</td>
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<td>Post-intermediate French</td>
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<td>Further French</td>
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<tr>
<td>ULFR20110</td>
<td>Pre-Intermediate French</td>
<td>20</td>
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</table>
Level 3 options

MANDATORY UNITS - 60 CREDITS
OPTIONAL UNITS - 60 CREDITS

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.

From the optional lists you must choose 30 credits from semester one and 30 credits from semester two.

Level 3 - compulsory units
All of the units in this pool are mandatory.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
<th>Theme</th>
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</thead>
<tbody>
<tr>
<td>COMP30040</td>
<td>3rd Year Project (Single Honours 40 Credits)</td>
<td>40</td>
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</tr>
<tr>
<td>MCCEL30031</td>
<td>Enterprise Management for Computer Scientists</td>
<td>10</td>
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<tr>
<td>MCCEL30032</td>
<td>Managing Finance in Enterprises for Computer Scientists</td>
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</table>

Level 3 - option pool 1
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>COMP32211</td>
<td>Implementing System-on-Chip Designs</td>
<td>10</td>
<td>System-on-Chip</td>
</tr>
<tr>
<td>COMP33511</td>
<td>User Experience</td>
<td>10</td>
<td>Interactive Systems Design</td>
</tr>
<tr>
<td>COMP33711</td>
<td>Agile Software Engineering</td>
<td>10</td>
<td>Agile Methods</td>
</tr>
<tr>
<td>COMP36111</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>
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<tr>
<td>COMP38211</td>
<td>Documents, Services and Data on the Web</td>
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</table>

Level 3 - option pool 2
From this option pool choose a maximum of 30 credits
and a minimum of 20 credits.

<table>
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<tr>
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<th>Title</th>
<th>Credits</th>
<th>Theme</th>
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</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>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>
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</table>

**Level 3 - option pool 3**

From this option pool choose a maximum of 20 credits and a minimum of 0 credits.

<table>
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<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
<th>Theme</th>
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<tbody>
<tr>
<td>COMP34120</td>
<td>AI and Games</td>
<td>20</td>
<td>Learning and Search in Artificial Intelligence</td>
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</table>

You should aim to do 45 or 60 credits in each 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**

**Level 4 - compulsory units**

All of the units in this pool are mandatory.

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>COMP40901</td>
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<tr>
<td>MCEL40042</td>
<td>Business Feasibility Study</td>
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**Level 4 - option pool 1**

From this option pool choose a maximum of 30 credits and a minimum of 15 credits.

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

**Level 4 - option pool 2**

From this option pool choose a maximum of 30 credits and a minimum of 15 credits.

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

**Level 4 - option pool 3**

From this option pool choose a maximum of 30 credits and a minimum of 0 credits.

<table>
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<tr>
<td>COMP60332</td>
<td>Automated Reasoning and Verification</td>
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<td>COMP60532</td>
<td>Principles of Digital Biology</td>
<td>15</td>
</tr>
<tr>
<td>COMP61232</td>
<td>Mobile and Energy Efficient Systems</td>
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<td>COMP61332</td>
<td>Text Mining</td>
<td>15</td>
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<tr>
<td>COMP62532</td>
<td>Component-based Software Development</td>
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**Level 4 - option pool 4**

From this option pool choose a maximum of 30 credits and a minimum of 0 credits.
Level 4 - option pool 5
From this option pool choose 15 credits.

<table>
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<tr>
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<tr>
<td>COMP62542</td>
<td>Introduction to Health Informatics</td>
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<td>Mobile Communications</td>
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<td>Computer Vision</td>
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<td>Data Analytics for Business Decision Making</td>
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<td>BMAN71652</td>
<td>Information and Knowledge Management</td>
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