Computer Science MEng (Hons) options 2023-2024

You will be automatically enrolled on these nine course units which total 120 credits.

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>
<td>10</td>
</tr>
</tbody>
</table>

Level 2 options
You will be automatically enrolled on four course units which total 60 credits.

For the remaining 60 credits:

You need to select a minimum of two course units totalling 20 credits or a maximum of three course units totalling 30 credits from Option Pool 1.

You need to select a minimum of two course units totalling 20 credits or a maximum of three course units totalling 30 credits from Option Pool 2.

You may choose a maximum of 10 credits of external units from External Option Pool 1 and a maximum of 10 credits of external units from External Option Pool 2.

External option units can be any Level 1 or 2 options, provided that they fit with your timetable and you meet all pre-requisites, these may be:

- Business and Management course units: https://www.ambs.ughandbook.manchester.ac.uk/non-ambs-students/
- University College course units
- Language course units: https://www.alc.manchester.ac.uk/study/university-language-centre-leap-courses/course-information/leap-courses/courses-for-all/
- HSTM20282 Information Visions https://www.manchester.ac.uk/study/undergraduate/courses/2021/00485/bsc-biology-with-science-and-society/course-details/HSTM20282#course-unit-details

Please note: to enrol on some external course units (such as Language) will require permission from the associated School/Department.

To select any external course units outside of the list given above will require permission from the 2nd Year Tutor.

If you take a 20 credit whole year course unit you are not permitted to drop this unit when course unit selection reopens at the start of semester 2.

You must ensure your credits are balanced over the academic year (60 credits in each semester).

Level 2 - 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>
</tr>
</thead>
<tbody>
<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>COMP26120</td>
<td>Algorithms and Data Structures</td>
<td>20</td>
<td>Computer Languages</td>
</tr>
<tr>
<td>COMP26202</td>
<td>Programming Languages &amp; Paradigms</td>
<td>20</td>
<td>None</td>
</tr>
</tbody>
</table>

You will be automatically enrolled on these four course units which total 60 credits.
Level 2 - 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>
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</tr>
</thead>
<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>COMP23111</td>
<td>Database Systems</td>
<td>10</td>
<td>Web and Distributed Systems</td>
</tr>
<tr>
<td>COMP24011</td>
<td>Introduction to AI</td>
<td>10</td>
<td>None</td>
</tr>
</tbody>
</table>

Level 2 - 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>COMP22712</td>
<td>Microcontrollers</td>
<td>10</td>
<td>None</td>
</tr>
<tr>
<td>COMP24112</td>
<td>Machine Learning</td>
<td>10</td>
<td>None</td>
</tr>
<tr>
<td>COMP24412</td>
<td>Knowledge-based AI</td>
<td>10</td>
<td>Natural Language, Representation and Reasoning</td>
</tr>
<tr>
<td>COMP25212</td>
<td>System Architecture</td>
<td>10</td>
<td>Computer Architecture</td>
</tr>
<tr>
<td>COMP27112</td>
<td>Introduction to Visual Computing</td>
<td>10</td>
<td>Visual Computing</td>
</tr>
<tr>
<td>COMP28112</td>
<td>Distributed Systems</td>
<td>10</td>
<td>Web and Distributed Systems</td>
</tr>
</tbody>
</table>

Level 3 options
You will be automatically enrolled on three course units, including the Third Year Project course unit, totalling 60 credits.

For the remaining 60 credits:
You need to select three courses totalling 30 credits from Option Pool 1.
You need to select three courses totalling 30 credits from Option Pool 2.
If you take a 20 credit whole year course unit you are not permitted to drop this unit when course unit selection reopens at the start of semester 2.
You must ensure your credits are balanced over the academic year (60 credits in each semester).

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>
</tr>
</thead>
<tbody>
<tr>
<td>COMP30040</td>
<td>3rd Year Project (Single Honours 40 Credits)</td>
<td>40</td>
<td>None</td>
</tr>
<tr>
<td>MCEL30031</td>
<td>Enterprise Management for Computer Scientists</td>
<td>10</td>
<td>None</td>
</tr>
<tr>
<td>MCEL30032</td>
<td>Managing Finance in Enterprises for Computer Scientists</td>
<td>10</td>
<td>None</td>
</tr>
</tbody>
</table>

You will be automatically enrolled on three course units, including the Third Year Project course unit, totalling 60 credits.

Level 3 - option pool 1
From this option pool choose 30 credits.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
<th>Theme</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMP31311</td>
<td>Giving meaning to programs</td>
<td>10</td>
<td>None</td>
</tr>
<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>COMP34111</td>
<td>AI &amp; Games</td>
<td>10</td>
<td>None</td>
</tr>
<tr>
<td>COMP34711</td>
<td>Natural Language Processing</td>
<td>10</td>
<td>None</td>
</tr>
<tr>
<td>COMP36111</td>
<td>Algorithms and Complexity</td>
<td>10</td>
<td>Programming and Algorithms</td>
</tr>
<tr>
<td>COMP37111</td>
<td>Graphics and Virtual Environments</td>
<td>10</td>
<td>Visual Computing</td>
</tr>
<tr>
<td>COMP38311</td>
<td>Advanced Distributed Systems</td>
<td>10</td>
<td>None</td>
</tr>
</tbody>
</table>

Level 3 - option pool 2
From this option pool choose 30 credits.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
<th>Theme</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMP33312</td>
<td>Agile Software Pipelines</td>
<td>10</td>
<td>None</td>
</tr>
<tr>
<td>COMP34812</td>
<td>Natural Language Understanding</td>
<td>10</td>
<td>None</td>
</tr>
<tr>
<td>COMP35112</td>
<td>Chip Multiprocessors</td>
<td>10</td>
<td>Computer Architecture</td>
</tr>
</tbody>
</table>
**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>

You will be automatically enrolled on the Summer Industrial Project and MCEL 40042: Business Feasibility Study which totals 40 credits.

**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>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>
</tr>
</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>COMP61021</td>
<td>Representation Learning</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>
</tbody>
</table>

**Level 4 - option pool 3**

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>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>COMP61332</td>
<td>Text Mining</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 15 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>COMP61342</td>
<td>Cognitive Robotics and Computer Vision</td>
<td>15</td>
</tr>
<tr>
<td>COMP63342</td>
<td>Software Security</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>BMAN60422</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>BMAN73271</td>
<td>Decision Behaviour, Analysis and Support</td>
<td>15</td>
</tr>
</tbody>
</table>