Part IIA syllabuses; links to online resources
Published on CUED undergraduate teaching (http://teaching.eng.cam.ac.uk)

Part IIA syllabuses; links to online resources

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Interactive booklists for Part IIA are available on Moodle.

Please note there are no Full Technical Reports associated with the following modules: 3B4, 3C7, all of the 3E modules, only one lab from 3F2, 3G1 and 3M1. Full details are given in the coursework section of the syllabus page.

Group A: Energy, Fluid Mechanics and Turbomachinery

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<tbody>
<tr>
<td>3A1</td>
<td>Fluid mechanics I (double module)</td>
<td>M(8), L(7)</td>
<td>Moodle</td>
<td>Dr W.R. Graham</td>
<td></td>
<td>Dr M.S. Davies Wykes Prof P.A. Davidson Prof P.G. Tucker</td>
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<tr>
<td>3A3</td>
<td>Fluid mechanics II (double module)</td>
<td>M(1), L(1)</td>
<td>Moodle</td>
<td>Dr L. Magri</td>
<td></td>
<td>Prof H Babinsky Prof R. Miller</td>
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<tr>
<td>3A5</td>
<td>Thermodynamics and power generation</td>
<td>M(7)</td>
<td>Moodle</td>
<td>Dr A.J. White</td>
<td></td>
<td>Prof R.S. Cant</td>
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<tr>
<td>3A6</td>
<td>Heat and mass transfer</td>
<td>L(3)</td>
<td>Moodle</td>
<td>Prof W.N. Dawes</td>
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<td>Dr L. Xu</td>
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Group B: Electrical Engineering

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<th>Module Title (linked to syllabus)</th>
<th>Term (set)</th>
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<tbody>
<tr>
<td>3B1</td>
<td>Radio frequency electronics</td>
<td>M(3)</td>
<td>Moodle</td>
<td>Dr P A Robertson</td>
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<td>Dr P A Robertson</td>
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<tr>
<td>3B2</td>
<td>Integrated digital electronics</td>
<td>L(3)</td>
<td>Moodle</td>
<td>Dr D Popa</td>
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<td>Dr O B Akan</td>
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<tr>
<td>3B3</td>
<td>Switch-mode electronics</td>
<td>M(2)</td>
<td>Moodle</td>
<td>Dr T Long</td>
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<td>Dr T Long</td>
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<tr>
<td>3B4</td>
<td>Electric drive systems</td>
<td>L(2)</td>
<td>Moodle</td>
<td>Dr T. Flack</td>
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<tr>
<td>3B5</td>
<td>Semiconductor engineering</td>
<td>M(8)</td>
<td>Moodle</td>
<td>Dr H Joyce</td>
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<td>Prof S.</td>
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<th>Lab Leader</th>
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<tr>
<td>3B6</td>
<td>Photonic technology</td>
<td>L(7)</td>
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<td>Moodle</td>
<td>Prof. R. Penty</td>
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**Group C: Mechanics, Materials and Design**

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<th>On-line resources</th>
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<th>Lab Leader</th>
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<tbody>
<tr>
<td>3C1</td>
<td>Materials processing and design</td>
<td>M(5)</td>
<td>Moodle</td>
<td>Dr H. Shercliff</td>
<td>Dr J. Durrell</td>
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<tr>
<td>3C5</td>
<td>Dynamics</td>
<td>M(6)</td>
<td>Moodle</td>
<td>Prof R.S. Langley</td>
<td>Dr J.P. Talbot</td>
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<tr>
<td>3C6</td>
<td>Vibration</td>
<td>L(6)</td>
<td>3C5 useful</td>
<td>Moodle</td>
<td>Dr T. Butlin</td>
<td>Dr T. Butlin</td>
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<tr>
<td>3C7</td>
<td>Mechanics of solids</td>
<td>M(4)</td>
<td>Moodle</td>
<td>Prof V. Deshpande</td>
<td>Dr C N Abadie</td>
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<tr>
<td>3C8</td>
<td>Machine design</td>
<td>M(3)</td>
<td>Moodle</td>
<td>Dr D. Cole</td>
<td>Dr D. Cole</td>
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<tr>
<td>3C9</td>
<td>Fracture mechanics of materials and structures</td>
<td>L(5)</td>
<td>3C7 assumed</td>
<td>Moodle</td>
<td>Prof. V. Deshpande</td>
<td>Dr G.J. McShane</td>
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**Group D: Civil, Structural and Environmental Engineering**

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<th>Module Code</th>
<th>Title (linked to syllabus)</th>
<th>Term (set)</th>
<th>Prerequisites Assumed</th>
<th>On-line resources</th>
<th>Leader</th>
<th>Lab Leader</th>
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<tbody>
<tr>
<td>3D1</td>
<td>Geotechnical engineering I</td>
<td>M(1)</td>
<td>Moodle</td>
<td>Dr S.K. Haigh</td>
<td>Dr S.K. Haigh</td>
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<td>3D2</td>
<td>Geotechnical engineering II</td>
<td>L(1)</td>
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<td>Prof G. Viggiani</td>
<td>Prof G. Viggiani</td>
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<td>3D3</td>
<td>Structural materials and design</td>
<td>M(2)</td>
<td>Moodle</td>
<td>Dr R. Foster</td>
<td>Dr C. Morley</td>
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<td>3D4</td>
<td>Structural analysis and stability</td>
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<td>Moodle</td>
<td>Dr F. Cirak</td>
<td>Prof A McRobie</td>
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<td>3D5</td>
<td>Water engineering</td>
<td>M(1)</td>
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<td>Dr D. Liang</td>
<td>Dr D. Liang</td>
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<td>3D7</td>
<td>Finite element methods</td>
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<td>Moodle</td>
<td>Dr F. Cirak</td>
<td>Dr F. Cirak</td>
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<tr>
<td>3D8</td>
<td>Building physics and environmental geotechnics</td>
<td>M(3)</td>
<td>Moodle</td>
<td>Prof S.P.G. Madhabhushi</td>
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**Group E: Management and Manufacturing**

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<th>Module Code</th>
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<th>Term (set)</th>
<th>Prerequisites Assumed</th>
<th>On-line resources</th>
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<tr>
<td>3E1</td>
<td>Business economics</td>
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<td>Dr F Schneider</td>
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### Group F: Information Engineering

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<th>Prerequisites Assumed</th>
<th>On-line resources</th>
<th>Leader</th>
<th>Lab Leader</th>
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<tr>
<td>3F1</td>
<td>Signals and systems</td>
<td>M(4)</td>
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<td>Moodle</td>
<td>Dr T O'Leary</td>
<td>Prof. M.C. Smith</td>
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<tr>
<td>3F2</td>
<td>Systems and control</td>
<td>L(5)</td>
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<td>Moodle</td>
<td>Dr G Vinnicombe</td>
<td>Dr G Vinnicombe</td>
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<td>3F3</td>
<td>Statistical Signal Processing</td>
<td>M(1)</td>
<td>3F1</td>
<td>Moodle</td>
<td>Dr S.S. Singh</td>
<td>Prof S. J. Godsill</td>
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<td>3F4</td>
<td>Data transmission</td>
<td>L(6)</td>
<td>3F1</td>
<td>Moodle</td>
<td>Dr R Venkataramanan</td>
<td>Dr J Sayir</td>
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<tr>
<td>3F7</td>
<td>Information Theory and Coding</td>
<td>M(5)</td>
<td>3F3</td>
<td>Moodle</td>
<td>Dr R. Venkataramanan</td>
<td>Dr J. Sayir</td>
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<td>3F8</td>
<td>Inference</td>
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<td>Moodle</td>
<td>Dr R.E. Turner</td>
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### Group G: Bioengineering

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<th>Module Code</th>
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<th>Prerequisites Assumed</th>
<th>On-line resources</th>
<th>Leader</th>
<th>Lab Leader</th>
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<tbody>
<tr>
<td>3G1</td>
<td>Introduction to molecular bioengineering</td>
<td>M(7)</td>
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<td>Moodle</td>
<td>Dr G. Micklem</td>
<td>Dr G. Micklem</td>
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<td>3G2</td>
<td>Mathematical physiology</td>
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<td>Dr A.J. Kabla</td>
<td>Dr A.J. Kabla</td>
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<td>3G3</td>
<td>Introduction to neuroscience</td>
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<td>Dr G. Hennequin</td>
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<tr>
<td>3G4</td>
<td>Medical imaging and 3D computer graphics</td>
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<td>Dr A H Gee</td>
<td>Dr G.M. Treece</td>
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<td>3G5</td>
<td>Biomaterials</td>
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<td>Dr A Markaki</td>
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### Group M: Multidisciplinary Modules
<table>
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<th>Module Code</th>
<th>Title (linked to syllabus)</th>
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<th>Leader</th>
<th>Lab Leader</th>
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<tbody>
<tr>
<td>3M1</td>
<td>Mathematical methods</td>
<td>L(10)</td>
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<td>Moodle</td>
<td>Dr L. Magri</td>
<td>Dr L. Magri</td>
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**Group S: Modules Shared with Part IIB**

Note that these modules do not have supervisions, or any IIA coursework associated with them.

4M16 is a prerequisite for further nuclear power courses in part IIB. It is recommended that those who wish to take further nuclear power courses in part IIB should take 4M16 as part of IIA.

<table>
<thead>
<tr>
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<th>Form of assessment</th>
<th>Prerequisites Assumed</th>
<th>On-line resources</th>
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<tr>
<td>4C4</td>
<td>Design methods</td>
<td>Exam</td>
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<td>Dr J.M. Cullen</td>
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<td>4M12</td>
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<td>Dr J. S. Biggins</td>
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<td>4M16</td>
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<td>Exam</td>
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<td>Moodle</td>
<td>Dr G. Parks</td>
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