

## Part IIA syllabuses; links to on-line resources

### Index

- [Group A: Energy, Fluid Mechanics and Turbomachinery](#)
- [Group B: Electrical Engineering](#)
- [Group C: Mechanics, Materials and Design](#)
- [Group D: Civil, Structural and Environmental Engineering](#)
- [Group E: Management and Manufacturing](#)
- [Group F: Information Engineering](#)
- [Group G: Bioengineering](#)
- [Group M: Multidisciplinary Modules](#)
- [Group S: Modules Shared with Part IIB](#)

[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](#)

| Module |   | Term          | Prerequisites | On-line resources      | Leader                             | Lab Leader  |
|--------|---|---------------|---------------|------------------------|------------------------------------|---|
| Code   | Title (linked to syllabus)                          | (set)         | Assumed       |                        |                                    |   |
| 3A1    | <a href="#">Fluid mechanics I (double module)</a>   | M(8),<br>L(7) |               | <a href="#">Moodle</a> | <a href="#">Dr A. Agarwal</a>      | <a href="#">Prof. G. Hunt</a><br><a href="#">Dr J Li</a>          |
| 3A3    | <a href="#">Fluid mechanics II (double module)</a>  | M(1),<br>L(1) |               | <a href="#">Moodle</a> | <a href="#">Prof. R.S. Cant</a>    | <a href="#">Prof H Babinsky</a><br><a href="#">Prof R. Miller</a> |
| 3A5    | <a href="#">Thermodynamics and power generation</a> | M(7)          |               | <a href="#">Moodle</a> | <a href="#">Prof E. Mastorakos</a> | <a href="#">Dr A.J. White</a>                                     |
| 3A6    | <a href="#">Heat and mass transfer</a>              | L(3)          |               | <a href="#">Moodle</a> | <a href="#">Prof W.N. Dawes</a>    | <a href="#">Dr A Boies</a>  |

### [Group B: Electrical Engineering](#)

| Module |  | Term  | Prerequisites | On-line resources      | Leader                           | Lab Leader                       |
|--------|--|-------|---------------|------------------------|----------------------------------|----------------------------------|
| Code   | Title (linked to syllabus)                     | (set) | Assumed       |                        |                                  |                                  |
| 3B1    | <a href="#">Radio frequency electronics</a>    | M(3)  |               | <a href="#">Moodle</a> | <a href="#">Dr P A Robertson</a> | <a href="#">Dr P A Robertson</a> |
| 3B2    | <a href="#">Integrated digital electronics</a> | L(3)  |               | <a href="#">Moodle</a> | <a href="#">Dr D Popa</a>        | <a href="#">Dr O B Akan</a>      |
| 3B3    | <a href="#">Switch-mode electronics</a>        | M(2)  |               | <a href="#">Moodle</a> | <a href="#">Dr T Long</a>        | <a href="#">Dr T Long</a>        |
| 3B4    | <a href="#">Electric drive systems</a>         | L(2)  |               | <a href="#">Moodle</a> | <a href="#">Dr T. Flack</a>      | <a href="#">Dr T Long</a>        |
| 3B5    | <a href="#">Semiconductor engineering</a>      | M(8)  |               | <a href="#">Moodle</a> | <a href="#">Dr H Joyce</a>       | <a href="#">Prof S. Hofmann</a>  |
| 3B6    | <a href="#">Photonic technology</a>            | L(7)  |               | <a href="#">Moodle</a> | <a href="#">Prof I.H. White</a>  | <a href="#">Prof. R. Penty</a>   |

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### Group C: Mechanics, Materials and Design

| Module |  | Term  | Prerequisites | On-line resources      | Leader                             | Lab Leader                      |
|--------|--|-------|---------------|------------------------|------------------------------------|---------------------------------|
| Code   | Title (linked to syllabus)                                     | (set) | Assumed       |                        |                                    |                                 |
| 3C1    | <a href="#">Materials processing and design</a>                | M(5)  |               | <a href="#">Moodle</a> | <a href="#">Dr H. Shercliff</a>    | <a href="#">Dr J. Durrell</a>   |
| 3C5    | <a href="#">Dynamics</a>                                       | M(6)  |               | <a href="#">Moodle</a> | <a href="#">Dr H E M Hunt</a>      | <a href="#">Dr H E M Hunt</a>   |
| 3C6    | <a href="#">Vibration</a>                                      | L(6)  | 3C5 useful    | <a href="#">Moodle</a> | <a href="#">Prof D. Cebon</a>      | <a href="#">Dr T. Butlin</a>    |
| 3C7    | <a href="#">Mechanics of solids</a>                            | M(4)  |               | <a href="#">Moodle</a> | <a href="#">Prof V. Deshpande</a>  | <a href="#">Dr C N Abadie</a>   |
| 3C8    | <a href="#">Machine design</a>                                 | M(3)  |               | <a href="#">Moodle</a> | <a href="#">Dr D. Cole</a>         | <a href="#">Dr D. Cole</a>      |
| 3C9    | <a href="#">Fracture mechanics of materials and structures</a> | L(5)  | 3C7 assumed   | <a href="#">Moodle</a> | <a href="#">Prof. V. Deshpande</a> | <a href="#">Dr G.J. McShane</a> |

### Group D: Civil, Structural and Environmental Engineering

| Module |  | Term  | Prerequisites | On-line resources      | Leader                                  | Lab Leader                              |
|--------|--|-------|---------------|------------------------|---|---|
| Code   | Title (linked to syllabus)                                     | (set) | Assumed       |                        |   |   |
| 3D1    | <a href="#">Geotechnical engineering I</a>                     | M(1)  |               |                        | <a href="#">Dr G. Biscontin</a>         | <a href="#">Dr G. Biscontin</a>         |
| 3D2    | <a href="#">Geotechnical engineering II</a>                    | L(1)  | 3D1           | <a href="#">Moodle</a> | <a href="#">Dr S.K. Haigh</a>           | <a href="#">Dr S.K. Haigh</a>           |
| 3D3    | <a href="#">Structural materials and design</a>                | M(2)  |               | <a href="#">Moodle</a> | <a href="#">Dr M. Overend</a>           | <a href="#">Dr C. Morley</a>            |
| 3D4    | <a href="#">Structural analysis and stability</a>              | L(2)  |               | <a href="#">Moodle</a> | <a href="#">Dr S Stanier</a>            | <a href="#">Prof A McRobie</a>          |
| 3D5    | <a href="#">Water engineering</a>                              | M(10) |               | <a href="#">Moodle</a> | <a href="#">Dr D. Liang</a>             | <a href="#">Dr D. Liang</a>             |
| 3D7    | <a href="#">Finite element methods</a>                         | L(4)  |               | <a href="#">Moodle</a> | <a href="#">Dr J Li</a>                 | <a href="#">Dr C N Abadie</a>           |
| 3D8    | <a href="#">Building physics and environmental geotechnics</a> | M(3)  |               | <a href="#">Moodle</a> | <a href="#">Prof S.P.G. Madhabhushi</a> | <a href="#">Prof S.P.G. Madhabhushi</a> |

### Group E: Management and Manufacturing

| Module |   | Term  | Prerequisites | On-line resources      | Leader                                    | Lab Leader                                |
|--------|---|-------|---------------|------------------------|---|---|
| Code   | Title (linked to syllabus)                                  | (set) | Assumed       |                        |   |   |
| 3E1    | <a href="#">Business economics</a>                          | L(8)  |               | <a href="#">Moodle</a> | <a href="#">Dr F Schneider</a>            |   |
| 3E2    | <a href="#">Marketing</a>                                   | M(9)  |               | <a href="#">Moodle</a> | <a href="#">Dr V. Mak</a>                 | <a href="#">Dr V. Mak</a>                 |
| 3E3    | <a href="#">Modelling Risk</a>                              | M(9)  |               | <a href="#">Moodle</a> | <a href="#">Dr P. Markou</a>              | <a href="#">Mr T Pape</a>                 |
| 3E6    | <a href="#">Organisational behaviour</a>                    | L(8)  |               | <a href="#">Moodle</a> | <a href="#">Dr A Richter</a>              | <a href="#">Dr A Richter</a>              |
| 3E10   | <a href="#">Operations management for engineers</a>         | L(8)  |               | <a href="#">Moodle</a> | <a href="#">Dr F Erhan-Oguz</a>           | <a href="#">Rev R McKenzie</a>            |
| 3E11   | <a href="#">Environmental sustainability &amp; business</a> | M(9)  |               | <a href="#">Moodle</a> | <a href="#">Prof J A Howard-Grenville</a> | <a href="#">Prof J A Howard-Grenville</a> |

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### [Group F: Information Engineering](#)

| Module |   | Term  | Prerequisites | On-line resources      | Leader                               | Lab Leader                              |
|--------|---|-------|---------------|------------------------|--------------------------------------|---|
| Code   | Title (linked to syllabus)                    | (set) | Assumed       |                        |                                      |   |
| 3F1    | <a href="#">Signals and systems</a>           | M(4)  |               | <a href="#">Moodle</a> | <a href="#">Dr T O'Leary</a>         | <a href="#">Prof. M.C. Smith</a>        |
| 3F2    | <a href="#">Systems and control</a>           | L(5)  |               | <a href="#">Moodle</a> | <a href="#">Dr G Vinnicombe</a>      | <a href="#">Dr G Vinnicombe</a>         |
| 3F3    | <a href="#">Statistical Signal Processing</a> | M(1)  | 3F1           | <a href="#">Moodle</a> | <a href="#">Dr S.S. Singh</a>        | <a href="#">Dr S.S. Singh</a>           |
| 3F4    | <a href="#">Data transmission</a>             | L(6)  | 3F1           | <a href="#">Moodle</a> | <a href="#">Dr R Venkataramanan</a>  | <a href="#">Dr J Sayir</a>              |
| 3F7    | <a href="#">Information Theory and Coding</a> | M(5)  |               | <a href="#">Moodle</a> | <a href="#">Dr R. Venkataramanan</a> | <a href="#">Dr J. Sayir</a>             |
| 3F8    | <a href="#">Inference</a>                     | L(4)  | 3F3           | <a href="#">Moodle</a> | <a href="#">Dr R.E. Turner</a>       | <a href="#">Dr J M Hernandez-Lobato</a> |

### [Group G: Bioengineering](#)

| Module |  | Term  | Prerequisites | On-line resources      | Leader                          | Lab Leader                      |
|--------|--|-------|---------------|------------------------|---------------------------------|---------------------------------|
| Code   | Title (linked to syllabus)                               | (set) | Assumed       |                        |                                 |                                 |
| 3G1    | <a href="#">Introduction to molecular bioengineering</a> | M(7)  |               | <a href="#">Moodle</a> | <a href="#">Dr G. Micklem</a>   | <a href="#">Dr G. Micklem</a>   |
| 3G2    | <a href="#">Mathematical physiology</a>                  | L(3)  |               | <a href="#">Moodle</a> | <a href="#">Prof M. Lengyel</a> | <a href="#">Dr A. Agarwal</a>   |
| 3G3    | <a href="#">Introduction to neuroscience</a>             | L(2)  |               | <a href="#">Moodle</a> | <a href="#">Dr G. Hennequin</a> | <a href="#">Dr G. Hennequin</a> |
| 3G4    | <a href="#">Medical imaging and 3D computer graphics</a> | L(1)  |               | <a href="#">Moodle</a> | <a href="#">Dr A H Gee</a>      | <a href="#">Dr G.M. Treece</a>  |
| 3G5    | <a href="#">Biomaterials</a>                             | M(8)  |               | <a href="#">Moodle</a> | <a href="#">Dr A Markaki</a>    | <a href="#">Dr Y.Y.S. Huang</a> |

### [Group M: Multidisciplinary Modules](#)

| Module |                                      | Term  | Prerequisites | On-line resources      | Leader                        | Lab Leader                    |
|--------|--------------------------------------|-------|---------------|------------------------|-------------------------------|-------------------------------|
| Code   | Title (linked to syllabus)           | (set) | Assumed       |                        |                               |                               |
| 3M1    | <a href="#">Mathematical methods</a> | L(10) |               | <a href="#">Moodle</a> | <a href="#">Prof G Csanyi</a> | <a href="#">Prof G Csanyi</a> |

### [Group S: Modules Shared with Part IIB](#)

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

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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.

4D16 and 4D8 are offered on alternating years.

| Module |  | Term<br>(set) | Form of<br>assessment | Prerequisites |        | On-line<br>resources   | Leader                              |
|--------|--|---------------|-----------------------|---------------|--------|------------------------|-------------------------------------|
| Code   | Title (linked to syllabus)   |               |                       | Assumed       | Useful |                        |                                     |
| 4C4    | <a href="#">Design methods</a>   | M(7)          | Exam                  |               |        |                        | <a href="#">Dr P.O. Kristensson</a> |
| 4D16   | <a href="#">Construction management (reintroduced 2018-19)</a>         | L(9)          | Exam                  |               |        | <a href="#">Moodle</a> | Dr P Heffernan                      |
| 4M12   | <a href="#">Partial differential equations and variational methods</a> | L(9)          | Exam                  |               |        | <a href="#">Moodle</a> | <a href="#">Dr J.S. Biggins</a>     |
| 4M16   | <a href="#">Nuclear power engineering</a>                              | L(9)          | Exam                  |               |        | <a href="#">Moodle</a> | <a href="#">Dr G. Parks</a>         |

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