

Lectures proposed by the Computer Science Syndicate

For particulars of the University Composition Fee and of the fees payable for attendance at separate courses of lectures see p. 2. Graduates of the University who are not reading for any University examination may attend without payment any lecture proposed by the Computer Science Syndicate.

Attention is drawn to the course for the M.Phil. in 'Computer Speech and Language Processing' given on p. 136. Attention is also drawn to the courses for the Mathematical Tripos, Part IA (Computer Science Option) given on p. 145.

COMPUTER SCIENCE TRIPOS, PART IA

Regulation 10 (d) (i) (the 50% Option)

Lectures will be delivered in the Cockcroft Lecture Theatre, unless otherwise stated

Candidates taking Part IA of the Computer Science Tripos under Regulation 10(d) (i) (the 50% Option) are also required to offer the papers set for the subject Mathematics in Part IA of the Natural Sciences Tripos¹ and the paper, and practical examination if any, set for one of the following subjects in Part IA of the Natural Sciences Tripos: Biology of Cells, Chemistry, Geology, Materials and Mineral Sciences, and Physics².

MICHAELMAS 1998

LENT 1999

EASTER 1999

<p>DR F. H. KING AND MISS C. H. NORTHEAST Registration. Th. 11 (One lecture) <i>Heycock Room</i></p> <p>PROF. I. M. LESLIE Digital Electronics. Tu. Th. S. 11 (Eleven lectures, beginning 10 Oct.) <i>Arts School, Room A</i></p> <p>DR R. C. JENNINGS Professional Practice and Ethics. Tu. Th. 11 (Eight lectures, beginning 5 Nov.) <i>Hopkinson Lecture Room</i></p> <p>MR N. BAILEY, PROF. M. V. WILKES, PROF. R. M. NEEDHAM AND PROF. A. J. R. G. MILNER Computer Perspectives. S. 11 (Four lectures, beginning 7 Nov.) <i>Hopkinson Lecture Room</i></p> <p>PROF. A. J. R. G. MILNER Introduction to Computer Science. Th. 12 (One lecture)</p> <p>DR L. C. PAULSON Foundations of Computer Science. Tu. Th. S. 12 (Fifteen lectures, beginning 10 Oct.)</p> <p>DR P. ROBINSON Discrete Mathematics. Tu. Th. S. 12 (Eight lectures, beginning 14 Nov.)</p> <p>DR F. H. KING, MISS C. H. NORTHEAST AND MR R. J. STIBBS Practical ML under Windows. Th. 2-4 or 4-6 (Two Thursday classes) <i>Hopkinson Lecture Room</i></p> <p>DR L. C. PAULSON AND DR F. H. KING Programming Practical Class. Th. 2-4 (Three fortnightly classes, beginning 22 Oct. or 29 Oct.) <i>Cockcroft Building, Floor 4</i></p> <p>DR A. C. NORMAN AND OTHERS How to Study Computer Science. Th. 5 (One lecture, 22 Oct.) <i>Arts School, Room A</i></p> <p>DR F. H. KING Tick-Four Briefing. Th. 5 (One lecture, 29 Oct.) <i>Hopkinson Lecture Room</i></p> <p>DR M. E. VAN INWEGEN Help Sessions. Th. 4 (Four classes, beginning 5 Nov.) <i>Hopkinson Lecture Room</i></p> <p>PROF. I. M. LESLIE AND DR N. A. DODGSON Hardware Briefing and Introductory Practical Class³. Th. 2-5 or F. 10-1 (One class, 22 Oct. or 23 Oct. or 29 Oct. or 30 Oct.) <i>Cockcroft Building, Floor 4</i></p> <p>PROF. I. M. LESLIE AND DR N. A. DODGSON Hardware Practical Class³. Th. 2-4 or F. 10-12 (Two fortnightly classes, beginning 5 Nov. or 6 Nov. or 12 Nov. or 13 Nov.) <i>Cockcroft Building, Floor 4</i></p>	<p>DR F. H. KING Probability. Tu. Th. S. 11 (Twelve lectures) <i>Hopkinson Lecture Room</i></p> <p>DR R. J. ANDERSON Software Engineering I. Tu. Th. S. 11 (Six lectures, beginning 11 Feb.) <i>Arts School, Room A</i></p> <p>DR L. C. PAULSON Software Engineering II. Tu. Th. S. 11 (Six lectures, beginning 25 Feb.) <i>Hopkinson Lecture Room</i></p> <p>DR P. ROBINSON The same continued. Tu. Th. S. 12 (Eight lectures)</p> <p>DR A. C. NORMAN Programming in Java. Tu. Th. S. 12 (Sixteen lectures, beginning 2 Feb.)</p> <p>DR F. H. KING Programming Practical Class. Th. 2-4 (One class, 14 Jan. or 21 Jan.) <i>Cockcroft Building, Floor 4</i></p> <p>DR F. H. KING, MISS C. H. NORTHEAST AND MR R. J. STIBBS Unix Registration. Th. or F. 2-4 (One class, 28 Jan. or 29 Jan. or 4 Feb.) <i>Hopkinson Lecture Room</i></p> <p>DR F. H. KING AND DR A. C. NORMAN Programming Practical Class. Th. 2-4 (Two fortnightly classes, beginning 11 Feb. or 18 Feb.) <i>Cockcroft Building, Floor 4</i></p> <p>PROF. I. M. LESLIE AND DR N. A. DODGSON Hardware Practical Class³. Th. 2-4 or F. 10-12 (Four fortnightly classes, beginning 14 Jan. or 15 Jan. or 21 Jan. or 22 Jan.) <i>Cockcroft Building, Floor 4</i></p>	<p>DR A. M. PITTS Regular Languages and Finite Automata. Tu. Th. S. 11 (Six lectures) <i>Hopkinson Lecture Room</i></p> <p>DR D. J. GREAVES Structured Hardware Design. Tu. Th. S. 11 (Six lectures, beginning 6 May) <i>Hopkinson Lecture Room</i></p> <p>MR S. M. HAND Operating Systems. Tu. Th. S. 12</p> <p>DR F. H. KING AND DR A. C. NORMAN Programming Practical Class. Th. 1-4 <i>Cockcroft Building, Floor 4</i></p>
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¹ The above timetable means that it is not possible to attend the Michaelmas Term Computing course which is associated with subject Mathematics in the Natural Sciences Tripos. Alternative arrangements will be explained in the first lecture on Practical ML at 2 p.m. on 8 October.

² It is particularly important for those reading Physics to register for practical classes at 11.30 a.m. on Wednesday, 7 October at the *Cavendish Laboratory*.

³ Those reading Physics normally attend the Friday morning Hardware Practical Classes. Those reading other bench subjects should attend the Thursday afternoon Hardware Practical Classes.

The above timetable also means that it is essential *not* to arrange Natural Sciences Tripos practical classes, or any other activity, on Thursday afternoons.

Computer Science Syndicate (continued)

COMPUTER SCIENCE TRIPOS, PART IA (continued)

Regulation 10 (d) (ii) (the 25% Option)

Lectures will be delivered in the Cockcroft Lecture Theatre, unless otherwise stated.

Candidates taking Part IA of the Computer Science Tripos under Regulation 10(d) (ii) (the 25% Option) are also required to offer the papers set for the subject Mathematics in Part IA of the Natural Sciences Tripos and the papers, and practical examinations if any, set for two of the following subjects in Part IA of the Natural Sciences Tripos: Biology of Cells, Biology of Organisms¹, Chemistry, Geology, Materials and Mineral Sciences, and Physics².

MICHAELMAS 1998

LENT 1999

EASTER 1999

<p>DR F. H. KING AND MISS C. H. NORTHEAST Registration¹. Th. 11 (One lecture) <i>Heycock Room</i></p> <p>PROF. A. J. R. G. MILNER Introduction to Computer Science. Th. 12 (One lecture)</p> <p>DR L. C. PAULSON Foundations of Computer Science. Tu. Th. S. 12 (Fifteen lectures, beginning 10 Oct.)</p> <p>DR P. ROBINSON Discrete Mathematics. Tu. Th. S. 12 (Eight lectures, beginning 14 Nov.)</p> <p>DR F. H. KING, MISS C. H. NORTHEAST AND MR R. J. STIBBS Practical ML under Windows. Th. 2-4 or 4-6 (Two Thursday classes) <i>Hopkinson Lecture Room</i></p> <p>DR L. C. PAULSON AND DR F. H. KING Programming Practical Class. Th. 2-4 (Three fortnightly classes, beginning 22 Oct. or 29 Oct.) <i>Cockcroft Building, Floor 4</i></p> <p>DR A. C. NORMAN AND OTHERS How to Study Computer Science. Th. 5 (One lecture, 22 Oct.) <i>Arts School, Room A</i></p> <p>DR F. H. KING Tick-Four Briefing. Th. 5 (One lecture, 29 Oct.) <i>Hopkinson Lecture Room</i></p> <p>DR M. E. VAN INWEGEN Help Sessions. Th. 4 (Four classes, beginning 5 Nov.) <i>Hopkinson Lecture Room</i></p>	<p>DR P. ROBINSON The same continued. Tu. Th. S. 12 (Eight lectures)</p> <p>DR A. C. NORMAN Programming in Java. Tu. Th. S. 12 (Sixteen lectures, beginning 2 Feb.)</p> <p>DR F. H. KING Programming Practical Class. Th. 2-4 (One class, 14 Jan. or 21 Jan.) <i>Cockcroft Building, Floor 4</i></p> <p>DR F. H. KING, MISS C. H. NORTHEAST AND MR R. J. STIBBS Unix Registration. Th. or F. 2-4 (One class, 28 Jan. or 29 Jan. or 4 Feb.) <i>Hopkinson Lecture Room</i></p> <p>DR F. H. KING AND DR A. C. NORMAN Programming Practical Class. Th. 2-4 (Two fortnightly classes, beginning 11 Feb. or 18 Feb.) <i>Cockcroft Building, Floor 4</i></p>	<p>MR S. M. HAND Operating Systems. Tu. Th. S. 12</p> <p>DR F. H. KING AND DR A. C. NORMAN Programming Practical Class. Th. 1-4 (Two fortnightly classes, beginning 22 Apr. or 29 Apr.) <i>Cockcroft Building, Floor 4</i></p>
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COMPUTER SCIENCE TRIPOS, PART IB

Lectures will be delivered in the Arts School Room A, unless otherwise stated.

<p>DR D. J. GREAVES ECAD. Tu. Th. S. 10 (Eight lectures)</p> <p>DR J. M. BACON Concurrent Systems. M. W. F. 10 (Twelve lectures) <i>Rayleigh Lecture Theatre</i></p> <p>DR S. W. MOORE Computer Design. Tu. Th. S. 10 (Sixteen lectures, beginning 27 Oct.)</p> <p>DR P. ROBINSON Further Java. M. W. F. 10 (Twelve lectures, beginning 6 Nov.) <i>Heycock Room</i></p> <p>DR A. C. NORMAN Unix Tools. M. W. F. 11 (Four lectures) <i>Heycock Room</i></p> <p>PROF. I. M. LESLIE Digital Electronics. Tu. Th. S. 11 (for those who have not previously attended this course) (Eleven lectures, beginning 10 Oct.)</p> <p>DR M. RICHARDS Data Structures and Algorithms. M. W. F. 11 (Sixteen lectures, beginning 19 Oct.) <i>Heycock Room</i></p> <p>DR M. R. O'DONOHUE Numerical Analysis I. Tu. Th. 11 (Eight lectures, beginning 5 Nov.)</p>	<p>DR M. RICHARDS Comparative Programming Languages. Tu. Th. S. 10 (Twelve lectures)</p> <p>DR A. MYCROFT Compiler Construction. M. W. F. 10 (Twenty lectures)</p> <p>PROF. I. M. LESLIE Digital Communication I. Tu. Th. S. 10 (Twelve lectures, beginning 11 Feb.)</p> <p>DR N. A. DODGSON Computer Graphics and Image Processing. M. W. F. 10 (Four lectures, beginning 3 Mar.)</p> <p>MR S. M. HAND Operating System Functions. Tu. Th. S. 11 (Eight lectures)</p> <p>DR J. K. M. MOODY Computation Theory. M. W. F. 11 (Twelve lectures)</p> <p>DR A. M. PITTS Semantics of Programming Languages. Tu. Th. S. 11 (Twelve lectures, beginning 2 Feb.) <i>Heycock Room</i></p>	<p>DR N. A. DODGSON The same continued. Tu. Th. S. 10</p> <p>DR J. K. M. MOODY Databases. M. W. F. 10</p> <p>A. N. OTHER Foundations of Functional Programming. Tu. Th. S. 11 <i>Heycock Lecture Theatre</i></p> <p>DR A. C. NORMAN Complexity Theory. M. W. F. 11</p> <p>PROF. M. J. C. GORDON Project Briefing I. W. 12 (One lecture, 19 May) <i>Rayleigh Lecture Theatre</i></p>
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¹ It is not possible for those reading Biology of Organisms to attend the Registration session or to attend the Michaelmas Term Computing course which is associated with subject Mathematics in the Natural Sciences Tripos. Alternative arrangements will be explained in the first lecture on Practical ML at 2 p.m. on 8 October.

² It is particularly important for those reading Physics to register for practical classes at 11.30 a.m. on Wednesday, 7 October at the *Cavendish Laboratory*.

The above timetable means that it is essential *not* to arrange Natural Sciences Tripos practical classes, or any other activities, on Thursday afternoons.

Computer Science Syndicate (continued)**COMPUTER SCIENCE TRIPOS, PART Ib (continued)**

MICHAELMAS 1998

LENT 1999

EASTER 1999

DR J. G. DAUGMAN
Continuous Mathematics. M. W. F. 11 (Four lectures, beginning 25 Nov.) *Heycock Room*

DR L. C. PAULSON
Logic and Proof. M. W. F. 12 (Twelve lectures) *Heycock Room*

DR R. J. ANDERSON
Group Project Briefing. Tu. Th. 12 (Two lectures, beginning 24 Nov.) *Heycock Room*

DR D. J. GREAVES AND OTHERS
ECAD and Architecture Practical Class. Tu. or Th. 2–4 (Seven classes, beginning 13 or 14 Oct.) *Cockcroft Building, Floor 4*

PROF. I. M. LESLIE AND DR N. A. DODGSON
Hardware Briefing and Introductory Practical Class (for those who have not previously attended this course). Th. 2–5 or F. 10–1 (One class, 22 Oct. or 23 Oct. or 29 Oct. or 30 Oct.) *Cockcroft Building, Floor 4*

PROF. I. M. LESLIE AND DR N. A. DODGSON
Hardware Practical Class. Th. 2–4 or F. 10–12 (Two fortnightly classes, beginning 5 Nov. or 6 Nov. or 12 Nov. or 13 Nov.) *Cockcroft Building, Floor 4*

DR W. F. CLOCKSIN
Prolog for Artificial Intelligence. M. W. F. 11 (Twelve lectures, beginning 12 Feb.)

DR R. J. ANDERSON
Introduction to Security. Tu. Th. S. 11 (Four lectures, beginning 2 Mar.)

DR R. J. ANDERSON
Group Project Inaugural Meeting. Th. 2 (One class)

PROF. I. M. LESLIE AND DR N. A. DODGSON
Hardware Practical Class (for those who have not previously attended this course). Th. 2–4 or F. 10–12 (Four fortnightly classes, beginning 14 Jan. or 15 Jan. or 21 Jan. or 22 Jan.) *Cockcroft Building, Floor 4*

DR S. W. MOORE
How (not) to give a Presentation. Tu. 2 (One lecture, 2 Feb.) *Babbage Lecture Theatre*

DR R. J. ANDERSON AND OTHERS
Group Project Syndicate Meetings. W. or Th. or F. 2 or 3 or 4 (Three fortnightly meetings of one hour, beginning 27 Jan. or 28 Jan. or 29 Jan.) *Room TP4 and Room Au310*

DR R. J. ANDERSON AND OTHERS
Group Project Presentations. W. 2–4 (One session, 10 Mar.) *Cockcroft Building, Floor 4*

COMPUTER SCIENCE TRIPOS, PART II*Lectures will be delivered in the Rayleigh Lecture Theatre, unless otherwise stated.*

PROF. M. J. C. GORDON
Project Briefing II. Th. 10 (One lecture)

DR J. G. DAUGMAN
Information Theory and Coding. M. W. F. 10 (Twelve lectures) *Heycock Room*

PROF. A. J. R. G. MILNER
Communicating Automata and Pi Calculus. Tu. Th. 11

DR P. M. SEWELL
Types. M. W. F. 11 (Eight lectures) *Babbage Lecture Theatre*

DR A. MYCROFT
Optimising Compilers. M. W. F. 11 (Fifteen lectures, beginning 28 Oct.) *Hopkinson Lecture Room*

DR N. A. DODGSON
Advanced Graphics. Tu. Th. 12 (Eight lectures) *Hopkinson Lecture Room*

DR P. ROBINSON
Introduction to VLSI. M. W. F. 12 (Twelve lectures) *Hopkinson Lecture Room*

PROF. I. M. LESLIE
Digital Communication II. M. W. F. 12 (Twelve lectures, beginning 6 Nov.)

DR W. F. CLOCKSIN
Artificial Intelligence. M. W. F. 10 (Twelve lectures) *Hopkinson Lecture Room*

PROF. M. J. C. GORDON
Specification and Verification I. M. W. F. 10 (Twelve lectures, beginning 12 Feb.) *Hopkinson Lecture Room*

DR K. I. B. SPÄRCK JONES
Information Retrieval. Tu. Th. 11 (Eight lectures)

DR R. J. ANDERSON
Security. M. W. F. 11 (Twelve lectures)

MR I. A. PRATT
Comparative Architectures. Tu. Th. 11 (Eight lectures, beginning 11 Feb.)

PROF. A. HOPPER AND OTHERS
Additional Topics. M. W. F. 11 (Twelve lectures, beginning 12 Feb.) *Hopkinson Lecture Room*

DR J. G. DAUGMAN AND DR C. M. BISHOP
Neural Computing. Tu. Th. 12 (Sixteen lectures) *Hopkinson Lecture Room*

DR E. J. BRISCOE
Natural Language Processing. M. W. 12 (Eight lectures)

DR M. R. O'DONOHUE
Numerical Analysis II. M. W. F. 12 (Twelve lectures, beginning 12 Feb.)

PROF. M. J. C. GORDON
Specification and Verification II. M. W. F. 10 *Hopkinson Lecture Room*

DR J. G. DAUGMAN
Computer Vision. Tu. Th. 11 *Arts School, Room A*

DR A. M. PITTS
Denotational Semantics. M. W. F. 11 (Eight lectures) *Hopkinson Lecture Room*

DR J. M. BACON
Distributed Systems. Tu. Th. 12

MR J. A. LANG
Business Studies. M. W. F. 12 *Hopkinson Lecture Room*

Computer Science Syndicate (continued)

COMPUTER SCIENCE TRIPOS, PART II (GENERAL) AND DIPLOMA IN COMPUTER SCIENCE

Lectures will be delivered in the Arts School Room A, unless otherwise stated.

MICHAELMAS 1998

LENT 1999

EASTER 1999

DR F. H. KING, MISS C. H. NORTHEAST AND MR R. J. STIBBS
Java and the Thor Teaching Service (**Diploma Students only**). M. Tu. W. 9.30–4 (Three classes, beginning 5 Oct.) *Hopkinson Lecture Room*

MR R. J. STIBBS
Elementary Use of the Thor Teaching Service. S. 9–11 (Three lectures) *Hopkinson Lecture Room*

PROF. M. J. C. GORDON
Project Briefing II (**Diploma Students only**). Th. 9 (One lecture, 19 Nov.) *Hopkinson Lecture Room*

PROF. A. J. R. G. MILNER
Introduction to Computer Science. Th. 10 (One lecture) *Hopkinson Lecture Room*

DR F. H. KING
Programming Foundations (**Diploma Students only**). M. Tu. W. Th. F. 10 (Eleven lectures, beginning 9 Oct.); M. W. F. 10 (Five lectures) *Hopkinson Lecture Room*

DR S. W. MOORE
Computer Design. Tu. Th. S. 10 (Sixteen lectures, beginning 27 Oct.)

DR P. ROBINSON
Further Java. M. W. F. 10 (Twelve lectures, beginning 6 Nov.) *Heycock Room*

PROF. M. J. C. GORDON
Project Briefing I (**Diploma Students only**). Th. 11 (One lecture) *Hopkinson Lecture Room*

DR A. MYCROFT
Introduction to Algorithms. M. W. F. 11 (Four lectures) *Hopkinson Lecture Room*

PROF. I. M. LESLIE
Digital Electronics. Tu. Th. S. 11 (Eleven lectures, beginning 10 Oct.)

DR M. RICHARDS
Data Structures and Algorithms. M. W. F. 11 (Sixteen lectures, beginning 19 Oct.) *Heycock Room*

DR M. R. O'DONOHUE
Numerical Analysis I. Tu. Th. 11 (Eight lectures, beginning 5 Nov.)

DR J. G. DAUGMAN
Continuous Mathematics. M. W. F. 11 (Four lectures, beginning 25 Nov.) *Heycock Room*

DR J. M. BACON
Operating System Foundations. Tu. Th. 12 *Rayleigh Lecture Theatre*

DR J. K. M. MOODY
Mathematics for Computation Theory. M. W. F. 12 (Twelve lectures, beginning 6 Nov.) *Hopkinson Lecture Room*

MR R. J. STIBBS AND OTHERS
Thor and Java Practical Class. M. 2–4 *Cockcroft Building, Floor 4*

DR A. C. NORMAN AND OTHERS
How to Study Computer Science. Th. 5 (One lecture, 22 Oct.)

DR J. K. M. MOODY
Mathematics for Computation Theory. Th. 2 (Three lectures, beginning 12 Nov.) *Arup Building, Room TP4*

DR M. RICHARDS
Comparative Programming Languages. Tu. Th. S. 10 (Twelve lectures)

DR A. MYCROFT
Compiler Construction. M. W. F. 10 (Twenty lectures)

PROF. I. M. LESLIE
Digital Communication. Tu. Th. S. 10 (Twelve lectures, beginning 11 Feb.)

DR N. A. DODGSON
Computer Graphics and Image Processing. M. W. F. 10 (Four lectures, beginning 3 Mar.)

MR S. M. HAND
Operating System Functions. Tu. Th. S. 11 (Eight lectures)

DR J. K. M. MOODY
Computation Theory. M. W. F. 11 (Twelve lectures)

DR R. J. ANDERSON
Software Engineering. Tu. Th. S. 11 (Six lectures, beginning 11 Feb.)

DR W. F. CLOCKSIN
Prolog for Artificial Intelligence. M. W. F. 11 (Twelve lectures, beginning 12 Feb.)

DR R. J. ANDERSON
Introduction to Security. Tu. Th. S. 11 (Four lectures, beginning 2 Mar.)

DR G. M. BIERMAN
Introduction to Functional Programming. Tu. Th. F. 12 (Twelve lectures) *Rayleigh Lecture Theatre*

DR E. J. BRISCOE
Natural Language Processing. M. W. 12 (Eight lectures) *Rayleigh Lecture Theatre*

DR M. R. O'DONOHUE
Numerical Analysis II. M. W. F. 12 (Twelve lectures, beginning 12 Feb.) *Rayleigh Lecture Theatre*

DR N. A. DODGSON
The same continued. Tu. Th. S. 10

DR J. K. M. MOODY
Databases. M. W. F. 10

DR J. G. DAUGMAN
Computer Vision. Tu. Th. 11

DR A. C. NORMAN
Complexity Theory. M. W. F. 11

DR J. M. BACON
Distributed Systems. Tu. Th. 12 *Rayleigh Lecture Theatre*

MR J. A. LANG
Business Studies. M. W. F. 12 *Hopkinson Lecture Room*