

## 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. 130. Attention is also drawn to the courses for the Mathematical Tripos, Part IA (Computer Science Option) given on p. 138.

### COMPUTER SCIENCE TRIPOS, PART IA

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

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

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 Tripos<sup>1</sup> 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 Physics<sup>2</sup>.

#### MICHAELMAS 1999

#### LENT 2000

#### EASTER 2000

<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 9 Oct.) <i>Arts School, Room A</i></p> <p>DR R. C. JENNINGS Professional Practice and Ethics. Tu. Th. 11 (Eight lectures, beginning 4 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 6 Nov.) <i>Hopkinson Lecture Room</i></p> <p>PROF. I. M. LESLIE 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 9 Oct.)</p> <p>DR P. ROBINSON Discrete Mathematics. Tu. Th. S. 12 (Eight lectures, beginning 13 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 21 Oct. or 28 Oct.) <i>Cockcroft Building, Floor 4</i></p> <p>DR A. C. NORMAN AND OTHERS How to Study Computer Science. Th. 5 (One lecture, 21 Oct.) <i>Arts School, Room A</i></p> <p>DR F. H. KING Tick-Four Briefing. W. 3 (One lecture, 27 Oct.) <i>Hopkinson Lecture Room</i></p> <p>DR M. E. VAN INWEGEN Help Sessions. Th. 4 (Four classes, beginning 4 Nov.) <i>Hopkinson Lecture Room</i></p> <p>DR N. A. DODGSON AND DR I. A. PRATT Hardware Briefing and Introductory Practical Class<sup>3</sup>. Th. 2-5 or F. 10-1 (One class, 21 Oct. or 22 Oct. or 28 Oct. or 29 Oct.) <i>Cockcroft Building, Floor 4</i></p> <p>DR N. A. DODGSON AND DR I. A. PRATT Hardware Practical Class<sup>3</sup>. Th. 2-4 or F. 10-12 (Two fortnightly classes, beginning 4 Nov. or 5 Nov. or 11 Nov. or 12 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 17 Feb.) <i>Arts School, Room 4</i></p> <p>DR L. C. PAULSON Software Engineering II. Tu. Th. S. 11 (Six lectures, beginning 2 Mar.) <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 8 Feb.)</p> <p>DR F. H. KING Programming Practical Class. Th. 2-4 (One class, 20 Jan. or 27 Jan.) <i>Cockcroft Building, Floor A</i></p> <p>DR F. H. KING, MISS C. H. NORTHEAST AND MR R. J. STIBBS Unix Registration. Th. or F. 1.30-4 (One class, 3 Feb. or 4 Feb. or 10 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 17 Feb. or 24 Feb.) <i>Cockcroft Building, Floor 4</i></p> <p>DR N. A. DODGSON AND DR I. A. PRATT The same continued<sup>3</sup>. Th. 2-4 or F. 10-12 (Four fortnightly classes, beginning 20 Jan. or 21 Jan. or 27 Jan. or 28 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 I. A. PRATT Structured Hardware Design. Tu. Th. S. 11 (Six lectures, beginning 11 May) <i>Hopkinson Lecture Room</i></p> <p>DR 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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<sup>1</sup> 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 under Windows at 2 p.m. on 7 October.

<sup>2</sup> It is particularly important for those reading Physics to register for practical classes at 11.30 a.m. on Wednesday, 6 October at the *Cavendish Laboratory*.

<sup>3</sup> 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 activities, on Thursday afternoons.

**Computer Science Syndicate (continued)****COMPUTER SCIENCE TRIPOS, PART IA****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 Organisms<sup>1</sup>, Chemistry, Geology, Materials and Mineral Sciences, and Physics<sup>2</sup>.

**MICHAELMAS 1999****LENT 2000****EASTER 2000**

<p>DR F. H. KING AND MISS C. H. NORTHEAST Registration<sup>1</sup>. Th. 11 (One lecture) <i>Heycock Room</i></p> <p>PROF. I. M. LESLIE 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 9 Oct.)</p> <p>DR P. ROBINSON Discrete Mathematics. Tu. Th. S. 12 (Eight lectures, beginning 13 Nov.)</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 8 Feb.)</p>	<p>DR S. M. HAND Operating Systems. Tu. Th. S. 12</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 21 Oct. or 28 Oct.) <i>Cockcroft Building, Floor 4</i></p> <p>DR A. C. NORMAN AND OTHERS How to Study Computer Science. Th. 5 (One lecture, 21 Oct.) <i>Arts School, Room A</i></p> <p>DR F. H. KING Tick-Four Briefing. W. 3 (One lecture, 27 Oct.) <i>Hopkinson Lecture Room</i></p> <p>DR M. E. VAN INWEGEN Help Sessions. Th. 4 (Four classes, beginning 4 Nov.) <i>Hopkinson Lecture Room</i></p>	<p>DR F. H. KING Programming Practical Class. Th. 2–4 (One class, 20 Jan. or 27 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. 1.30–4 (One class, 3 Feb. or 4 Feb. or 10 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 17 Feb. or 24 Feb.) <i>Cockcroft Building, Floor 4</i></p>	<p>DR F. H. KING AND DR A. C. NORMAN Programming Practical Class. Th. 1–4 (Two fortnightly classes, beginning 27 Apr. or 4 May) <i>Cockcroft Building, Floor 4</i></p>

**COMPUTER SCIENCE TRIPOS, PART IB***Lectures will be delivered in the Arts School Room A, unless otherwise stated*

<p>DR S. W. MOORE 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 26 Oct.)</p> <p>DR P. ROBINSON Further Java. M. W. F. 10 (Twelve lectures, beginning 5 Nov.) <i>Heycock Room</i></p> <p>DR I. A. PRATT Unix Tools. M. W. F. 11 (Four lectures) <i>Heycock Room</i></p> <p>PROF. I. M. LESLIE Digital Electronics (for those who have not previously attended this course). Tu. Th. S. 11 (Eleven lectures, beginning 9 Oct.)</p> <p>DR M. RICHARDS Data Structures and Algorithms. M. W. F. 11 (Sixteen lectures, beginning 18 Oct.) <i>Heycock Room</i></p> <p>DR M. R. O'DONOHUE Numerical Analysis I. Tu. Th. 11 (Eight lectures, beginning 4 Nov.)</p>	<p>DR M. RICHARDS Comparative Programming Languages. Tu. Th. S. 10 (Twelve lectures)</p> <p>DR A. C. NORMAN AND DR M. RICHARDS Compiler Construction. M. W. F. 10 (Twenty lectures)</p> <p>PROF. I. M. LESLIE Digital Communication I. Tu. Th. S. 10 (Twelve lectures, beginning 17 Feb.)</p> <p>DR N. A. DODGSON Computer Graphics and Image Processing. M. W. F. 10 (Four lectures, beginning 8 Mar.)</p> <p>DR S. M. HAND Operating System Functions. Tu. Th. 11 (Eight lectures)</p> <p>DR J. K. M. MOODY Computation Theory. M. W. F. 11 (Twelve lectures)</p> <p>DR W. F. CLOCKSIN Prolog for Artificial Intelligence. M. W. F. 11 (Twelve lectures, beginning 18 Feb.)</p> <p>DR R. J. ANDERSON Introduction to Security. Tu. Th. S. 12 (Four lectures, beginning 7 Mar.) <i>Rayleigh Lecture Theatre</i></p>	<p>DR N. A. DODGSON The same continued. Tu. Th. S. 10 <i>Heycock Room</i></p> <p>DR J. K. M. MOODY Databases. M. W. F. 10</p> <p>DR A. C. NORMAN Foundations of Functional Programming. Tu. Th. S. 11 <i>Heycock Room</i></p> <p>DR A. DAWAR Complexity Theory. M. W. F. 11</p> <p>PROF. M. J. C. GORDON Project Briefing I. W. 12 (One lecture, 24 May) <i>Rayleigh Lecture Theatre</i></p>
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<sup>1</sup> 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 under Windows at 2 p.m. on 7 October.

<sup>2</sup> It is particularly important for those reading Physics to register for practical classes at 11.30 a.m. on Wednesday, 6 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 1999

LENT 2000

EASTER 2000

DR J. G. DAUGMAN  
Continuous Mathematics. M. W. F. 11 (Four lectures, beginning 24 Nov.) *Heycock Room*

DR A. M. PITTS  
Semantics of Programming Languages. Tu. Th. 12 (Twelve lectures) *Rayleigh Lecture Theatre*

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 23 Nov.) *Heycock Room*

DR S. W. MOORE AND OTHERS  
ECAD and Architecture Practical Classes. Tu. or F. 2-4 (Seven classes, beginning 12 Oct. or 15 Oct.) *Cockcroft Building, Floor 4*

DR N. A. DODGSON AND DR I. A. PRATT  
Hardware Briefing and Introductory Practical Class (for those who have not previously attended this course). Th. 2-5 or F. 10-1 (One class, 21 Oct. or 22 Oct. or 28 Oct. or 29 Oct.) *Cockcroft Building, Floor 4*

DR N. A. DODGSON AND DR I. A. PRATT  
Hardware Practical Class (for those who have not previously attended this course). Th. 2-4 or F. 10-12 (Two fortnightly classes, beginning 4 Nov. or 5 Nov. or 11 Nov. or 12 Nov.) *Cockcroft Building, Floor 4*

DR. N. A. DODGSON AND DR I. A. PRATT  
Hardware Practical Class (for those who have not previously attended this course). Th. 2-4 or F. 10-12 (Four fortnightly classes, beginning 20 Jan. or 21 Jan. or 27 Jan. or 28 Jan.) *Cockcroft Building, Floor 4*

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

DR R. J. ANDERSON AND OTHERS  
Group Project Syndicate Meetings. W. or Th. or F. 2 or 3 or 4 or 5 (Three fortnightly meetings of one hour, beginning 2 Feb. or 3 Feb. or 4 Feb.) *Room TP4 and Room Au310*

DR S. W. MOORE  
How (not) to give a Presentation. Tu. 2 (One lecture, 8 Feb.) *Babbage Lecture Theatre*

DR R. J. ANDERSON AND OTHERS  
Group Project Demonstrations. W. 2-4 (One session, 8 Mar.) *Cockcroft Building, Floor 4*

Group Project Presentations. W. 5 (One session, 8 Mar.) *Babbage Lecture Theatre*

## 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 A. M. PITTS  
Types. M. W. F. 10 (Eight lectures) *Heycock Room*

DR N. A. DODGSON AND DR P. ROBINSON  
Advanced Graphics and HCI. Tu. Th. 10 (Twelve lectures, beginning 12 Oct.) *Heycock Room*

DR W. F. CLOCKSIN  
Artificial Intelligence. M. W. F. 10 (Four lectures, beginning 27 Oct.) *Heycock Room*; (Twelve lectures, beginning 5 Nov.) *Hopkinson Lecture Room*

DR J. G. DAUGMAN  
Information Theory and Coding. Tu. Th. 11 (Twelve lectures)

PROF. I. M. LESLIE  
Computer Systems Modelling. M. W. F. 11 (Twelve lectures)

PROF. M. J. C. GORDON  
Specification and Verification I. M. W. F. 11 (Twelve lectures, beginning 5 Nov.)

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

PROF. I. M. LESLIE AND OTHERS  
Digital Communication II. M. W. F. 12 (Twelve lectures, beginning 5 Nov.)

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

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

DR I. A. PRATT  
Comparative Architectures. Tu. Th. 11 (Eight lectures, beginning 17 Feb.)

PROF. A. HOPPER AND OTHERS  
Additional Topics. M. W. F. 11 (Twelve lectures, beginning 18 Feb.) *Hopkinson Lecture Room*

DR J. G. DAUGMAN  
Neural Computing. Tu. Th. 12 *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 18 Feb.)

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

PROF. M. J. C. GORDON  
Specification and Verification II. M. W. F. 11 *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 1999

LENT 2000

EASTER 2000

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. 9-4 (Three classes, beginning 4 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, 18 Nov.) *Hopkinson Lecture Room*

PROF. I. M. LESLIE  
Introduction to Computer Science. Th. 10 (One lecture) *Hopkinson Lecture Room*

DR F. H. KING  
Foundations of Programming (**Diploma Students only**). M. Tu. W. Th. F. 10 (Eleven lectures, beginning 8 Oct., M. W. F. 10 (Five lectures) *Hopkinson Lecture Room*

DR S. W. MOORE  
Computer Design. Tu. Th. S. 10 (Sixteen lectures, beginning 26 Oct.)

DR P. ROBINSON  
Further Java. M. W. F. 10 (Twelve lectures, beginning 5 Nov.) *Heycock Room*

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

DR M. RICHARDS  
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 9 Oct.)

DR M. RICHARDS  
Data Structures and Algorithms. M. W. F. 11 (Sixteen lectures, beginning 18 Oct.) *Heycock Room*

DR M. R. O'DONOHUE  
Numerical Analysis I. Tu. Th. 11 (Eight lectures, beginning 4 Nov.)

DR J. G. DAUGMAN  
Continuous Mathematics. M. W. F. 11 (Four lectures, beginning 24 Nov.) *Heycock Room*

DR J. M. BACON  
Operating System Foundations. Tu. Th. 12 *Hopkinson Lecture Room*

DR J. K. M. MOODY  
Mathematics for Computation Theory. M. W. F. 12 (Twelve lectures, beginning 5 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, 21 Oct.)

DR J. K. M. MOODY  
Mathematics for Computation Theory. Th. 2 (Three classes, beginning 11 Nov.) *Arup Building, Room TP4*

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

DR A. C. NORMAN AND DR M. RICHARDS  
Compiler Construction. M. W. F. 10 (Twenty lectures)

PROF. I. M. LESLIE  
Digital Communication. Tu. Th. S. 10 (Twelve lectures, beginning 17 Feb.)

DR N. A. DODGSON  
Computer Graphics and Image Processing. M. W. F. 10 (Four lectures, beginning 8 Mar.)

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

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

DR R. J. ANDERSON  
Software Engineering I. Tu. Th. S. 11 (Six lectures, beginning 17 Feb.)

DR W. F. CLOCKSIN  
Prolog for Artificial Intelligence. M. W. F. 11 (Twelve lectures, beginning 18 Feb.)

DR L. C. PAULSON  
Software Engineering II. Tu. Th. S. 11 (Six lectures, beginning 2 Mar.) *Hopkinson Lecture Room*

DR A. DAWAR  
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 18 Feb.) *Rayleigh Lecture Theatre*

DR R. J. ANDERSON  
Introduction to Security. Tu. Th. S. 12 (Four lectures, beginning 7 Mar.) *Rayleigh Lecture Theatre*

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

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

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

DR A. DAWAR  
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*