University of Leeds Classification of Books
Computer Studies

This classification scheme is based upon the 1998 ACM Computing Classification System
 For the complete ACM system, see:
http://www.acm.org/class/1998/ccs98.html

A General

History : see History of Science E-2

A-0.01	Periodicals	
A-0.02	Series	
A-0.03	Collected essays, Festschriften etc.	
A-0.04	Bibliographies	
A-0.08	Education and training	
A-0.09	Handbooks, databooks	
A-0.19	Dictionaries, encyclopaedias	
A-10	General texts	
A-99	General miscellaneous	

Computer electronics : see Electrical Engineering R

G Hardware

G-0	General	
G-1	Control structures and microprogramming	
G-2	Arithmetic and logic structures	
G-3	Memory structures	
G-4	Input/output and data communications	
G-5	Register-transfer-level implementation	
G-6	Logic design	*See also Electrical Engineering R-5*
G-7	Integrated circuits	*See also Electrical Engineering L-8*
G-8	Performance and reliability	
G-9	Miscellaneous	

H Computer Systems Organisation

H-0	General, computer architecture, systems architecture	
H-1	Processor architectures	
H-2	Computer-communication networks	
H.2.1	Network architecture and design (including wireless)	
H-2.2	Network protocols	
H-2.3	Network operations	
H-2.4	Distributed systems; Cloud computing	
H-2.5	Local area networks, Wide area networks and Internet	
H-2.6	Internetworking	
H-2.9	Miscellaneous	

H-3 Special-purpose and application-based systems
Including: smartcards, embedded, ubiquitous
H-4 Performance of systems

H-5 Computer system implementation
H-5.1 Supercomputers and mainframe computers
H-5.2 Minicomputers
H-5.3 Microcomputers
H-5.35 Portable computers (laptops, notebooks etc.)
H-5.4 VLSI (Very large scale integration) systems
H-5.5 Servers
H-5.9 Miscellaneous

H-9 Miscellaneous

J Software *Practical aspects : see V-8*

J-0 General
J-1 Programming techniques
J-1.1 Applicative (functional) programming
J-1.2 Automatic programming
J-1.3 Concurrent, distributed, parallel programming
J-1.4 Sequential programming
J-1.5 Object-oriented programming
J-1.6 Logic programming
J-1.7 Visual programming
J-1.9 Miscellaneous

J-2 Software engineering
J-2.01 Requirements/specifications, Z
J-2.02 Design tools and techniques – CASE (Computer-aided software engineering), flow charts, petri nets, structural, top-down, UML (Unified modelling language)
J-2.03 Coding tools and techniques
J-2.04 Software/program verification
J-2.05 Testing and debugging
J-2.06 Programming environments
J-2.07 Distribution, maintenance and enhancement
J-2.08 Metrics
J-2.09 Management – quality
J-2.10 Design
J-2.11 Software architectures
J-2.12 Interoperability – CORBA (Common object request broker architecture)
J-2.13 Reusable software
J-2.99 Miscellaneous

J-3 Programming languages

J-3.01 *to* J-3.26 Specific programming languages : number corresponds to first letter of language name

e.g. J-3.01 Ada (A = 1st letter of alphabet)
J-3.03 C, C++, Cobol (C = 3rd letter)
J-3.06 Fortran
J-3.08 HTML, Web authoring
J-3.10 Java, JavaScript

J-3.3 Formal definitions and theory

J-3.4 Language classifications

J-3.5 Language constructs and features

J-3.6 Processors (compilers, interpreters, etc.)

J-3.9 Miscellaneous

J-4 Operating systems

J-4.01 *to* J-4.26 Particular operating systems, as in J-3.01 to J-3.26

e.g. J-4.04 DOS
J-4.21 UNIX
J-4.22 VMS
J-4.23 Windows
J-4.24 X Window

J-4.31 Process management

J-4.33 Storage management

J-4.35 File Systems management

J-4.37 Communications management

J-4.4 Reliability

J-4.5 Security and protection; Encryption

J-4.6 Organisation and design

J-4.7 Performance

J-4.8 Systems programs and utilities

J-4.9 Miscellaneous

K Data

K-0 General

K-1 Data structures

K-2 Data storage representations

[K-3 Data encryption] *No longer used : see J-4.5*

K-4 Coding and information theory

K-5 Files

K-9 Miscellaneous

L Theory of Computation

L-0 General
L-1 Computation by abstract devices; Quantum computing
L-2 Analysis of algorithms and problem complexity
L-3 Logics and meanings of programs
L-4 Mathematical logic and formal languages
L-9 Miscellaneous

M Mathematics of Computing

M-0 General
M-1 Numerical analysis
M-1.1 Interpolation
M-1.2 Approximation
M-1.3 Numerical linear algebra
M-1.4 Quadrature and numerical differentiation
M-1.5 Roots of nonlinear equations
M-1.6 Optimization – linear programming
M-1.7 Ordinary differential equations (or DEs in general)
M-1.8 Partial differential equations, finite element methods
M-1.9 Applications – operations research, scheduling
M-2 Discrete Mathematics – combinatorics, graph theory
See also Mathematics A-4
M-3 Probability and statistics *See also Mathematics K-11*
M-4 Mathematical software
M-9 Miscellaneous

P Information Systems

P-0 General
P-1 Models and principles
P-2 Database management
P-2.1 Logical design
P-2.2 Physical design
P-2.3 Languages
P-2.4 Systems - object-oriented, distributed, relational,…
P-2.5 Heterogeneous databases
P-2.6 Database machines
P-2.7 Database administration, data warehousing
P-2.8 Database applications, data mining
P-2.9 Miscellaneous
P-3 Information storage and retrieval
Librarianship aspects : see Bibliography H-4
P-3.1 Content analysis and indexing
P-3.2 Information storage
P-3.3 Information search and retrieval
P-3.4 Systems and software

P-3.5 Online information services
P-4 Information systems applications - office automation, management information systems, decision support systems
P-5 Human-computer interaction
P-5.1 Multimedia information systems; Virtual reality
P-5.2 User interfaces, ergonomics
P-5.3 Group and organisation interfaces – CSCW (computer-supported cooperative work)
Practical applications : see V-4.3
P-5.4 Hypertext/hypermedia
[P-5.5 Sound and music computing] *No longer used : see Music A-1.6*
P-5.9 Miscellaneous
P-6 World Wide Web; Internet *Social aspects : see Communications Studies D-5.5*
P-6.2 User interfaces: browsers, etc.
P-6.4 Searching
P-6.6 Web mining
P-6.8 Applications
Communications : Email, blogs, etc.
Social networks
P-6.9 Miscellaneous
P-9 Miscellaneous

S Computing methodologies

S-0 General – philosophical foundations
S-1 Symbolic and algebraic manipulation
S-2 Artificial intelligence
S-2.01 Applications and expert systems
S-2.02 Automatic programming
S-2.03 Deduction and theorem proving
S-2.04 Knowledge representation formalisms and methods
S-2.05 Programming languages and software
S-2.06 Learning, neural networks, genetic programming
S-2.07 Natural language processing and speech processing
S-2.08 Problem solving, control methods, and search
S-2.09 Robotics *See also Electrical Engineering Z-30*
Mobile robots : see Mechanical Engineering K-13
S-2.10 Vision and scene understanding
S-2.11 Distributed artificial intelligence, intelligent agents
S-2.99 Miscellaneous
S-3 Computer graphics
S-4 Image processing and computer vision
See also Electrical Engineering N-20
S-5 Pattern recognition
S-6 Simulation and modelling
S-7 Document and text processing
S-9 Miscellaneous

[T Computer applications *No longer used*

For applications in specific subject areas, see the relevant subject schedule, e.g.

Civil Engineering A-3.3, Engineering B-3, Food A-1.7, General Literature A-0.06; Linguistics M-1; Music A-1.6, etc.

T-0 General

T-1 Administrative data processing

T-2 Applications in science

T-3 Applications in healthcare]

V Practical computing

The computer industry : *see Economics J-81.3*

History of computing : see History of Science

Computers and education : *see Education*

Computer and information science education : *see A-0.08*

V-0 General

V-4 Computers and society

V-4.1 Computer ethics

V-4.3 Organizational impacts, CSCW *General works : see P-5.3*

V-4.4 Electronic commerce *See also Management E-1.5*

[V-5 Legal aspects of computing *use Law*]

V-6 Management of computing and information systems [*see also Management]*

V-6.1 Project and people management, systems analysis and design

V-6.2 Installation management, implementation

V-6.3 Software management

V-6.4 System management, quality assurance

V-6.5 Security and protection; Viruses, malware

V-6.9 Miscellaneous

V-8 Personal computing

V-8.1 Applications packages

V-8.11 Word processors

V-8.12 Spreadsheets

V-8.13 Databases

V-8.14 Graphics

V-8.15 Data communications

V-8.16 Project management

V-8.17 Games, game design *Social aspects : see Sociology H-7.5*

V-8.2 Hardware

V-8.3 Management/maintenance

V-8.9 Miscellaneous

V-9 Miscellaneous

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