UNIVERSITY OF LONDON

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BSc and CertHE in **Computing and Related Subjects**

Introductory booklist

2019–20

Publications Office
University of London
32 Russell Square
London
WC1B 5DN
United Kingdom

london.ac.uk

Published by: University of London

Introduction

We have produced the following booklist to help prepare you for your studies on the Computing and Information Systems (CIS) or Creative Computing (CC) programmes. It is available on the Computing VLE homepage:

https://computing.elearning.london.ac.uk

The home page can be accessed via the University of London International Programmes Student Portal (http://my.londoninternational.ac.uk).

The books listed provide an introduction to the subjects you are likely to be studying in your first year. They will also be referred to as you progress through those subjects. We advise you, therefore, to buy or borrow these texts if you want to make an early start to your studies.

Remember – this is just the starting point. We will expect you to read widely in order to benefit fully from your studies. You will also find an *Extended booklist* on the VLE. The subject guides we send you when you register will give details of other books and journals you will need to consult. Please remember to check the VLE regularly for updates.

The Introductory booklist includes some general background reading, a list of useful publications, and some Level 4 books that constitute Essential reading for the following five full courses:

CO1102	Mathematics for computing	(CIS and CC)
CO1108	Information systems: foundations of e-business	(CIS)
CO1109	Introduction to Java and object-oriented programming	(CIS and CC)
CO1110	Introduction to computing and the internet	(CIS and CC)
CO1112	Creative computing I: Image, sound and motion	(CC)

Note: Unless otherwise stated, all websites were accessed on 31 May 2019.

General books

The following is a list of general books that are not related directly to any particular course.

Avison, D. and G. Fitzgerald *Information systems development: methodologies, techniques and tools*. (McGraw-Hill, 2006) 4th edition [ISBN 9780077114176 (pbk)]. This book provides an introduction to the CIS programme.

Boden, M.A. *The creative mind: myths and mechanisms*. (Routledge, 2003) 2nd edition [ISBN 9780415314534 (pbk)]. This book provides an introduction to the CC programme.

Dewdney, A.K. *The new Turing omnibus: 66 excursions in computer science*. (Palgrave Macmillan, 2003) [ISBN 9780805071665 (pbk)].

Harel, D. and Yishai A. Feldman *Algorithmics: the spirit of computing*. (Addison Wesley, 2004; Springer, 2012) 3rd edition [ISBN 9780321117847 (pbk: Addison Wesley); 9783642272653 (hbk; Springer)].

Other useful publications

The following journals are a good introduction to computing and cover developments in the field. Students will find it useful, therefore, to refer to these journals, or others like them, wherever possible.

- Communications of the ACM
- ACM computing surveys
- SIGCSE bulletin (for staff at institutions; not for students)

All of the above can be obtained from:

Association for Computing Machinery

Email: acmhelp@acm.org
www.acm.org
http://drdobbs.com

Any easily available general interest weekly or monthly computing magazines would also be useful. Examples of the type of magazine (these are not the only suitable ones) are:

Computer Weekly
www.computerweekly.com
Wired
wired.co.uk
Publisher: Condé Nast

Level 4 books for CIS and CC

CO1102: Mathematics for computing

The subject guide for this course gives a complete account of the course, in two volumes, but you may want to supplement this by reading an alternative account of some topics, and by working through additional examples and exercises. References are given in the subject guide to the following two books, which are particularly suitable as regards coverage, level and clarity of presentation.

Epp, S.S. *Discrete mathematics with applications*. (Cengage Learning, 2019) 5th edition [ISBN 9781337694193 (hbk)].

As the material in the 5th edition has been reorganised, the subject guide's references to the above book have been mapped to the 5th edition and details are available on the Computing VLE.

Molluzzo, J.C. and F.A. Buckley *A first course in discrete mathematics*. (Long Grove, IL: Waveland, 1997) reprinted 2004 [ISBN 9780881339406 (hbk): out of print].

CO1108: Information systems: foundations of e-business

Laudon, J.P. and K.C. Laudon *Management information systems: managing the digital firm*. Global edition. (Pearson, 2019) 16th edition [ISBN 9780135191798 (pbk)].

The above book is Essential reading for the course.

Alter, S. *Information systems: foundation of e-business*. (Upper Saddle River, NJ: Prentice Hall, 2001) 4th edition [ISBN 9780130617736 (hbk): out of print] or (Upper Saddle River, NJ: Prentice Hall, 2001) 4th edition [ISBN 9780130432421 (pbk): out of print].

CO1109: Introduction to Java and object-oriented programming

Web address for installing Java: www.oracle.com/technetwork/java/index.html

Please install at least Java 8. Later versions are also fine.

The subject guide gives a complete account of the course. The tutor does not recommend a particular textbook but suggests that students wishing to buy a book do so after learning a little Java so that they can choose, from the many books available, one that particularly suits them.

Some possible book choices are listed below.

Bloch, J. *Effective Java*. (Addison-Wesley Professional, 2017) 3rd edition [ISBN 9780134685991 (pbk)]. This authoritative book, written by one of the architects of the Java language, enumerates the best practices of professional programmers. The third edition has been updated to take account of additions to the Java language in Java 7, 8 and 9. Written in an accessible and engaging style, it is useful for professional programmers, and for those just starting. Chapters stand on their own, such that the book can be used as a problem solving guide as and when needed, for example Chapter 10 should be consulted when writing classes with exception handling. Referring to this book when writing code will help you to get into good habits early.

Deitel, H. and P. Deitel *Java How to Program, Early Objects, Global Edition*. (Pearson, 2017) 11th edition [ISBN 9781292223858 (pbk)]. Includes Java 8 and 9.

Downey, A.B. and C. Mayfield *Think Java: How to think like a computer scientist*. (O'Reilly, 2016) [ISBN 9781491929568 (pbk)]; new 2020 edition (O'Reilly) [ISBN 9781492072508].

Flanagan, D. and B. Evans *Java in a nutshell.* (O'Reilly, 2018) 7th revised edition [ISBN 9781492037255 (pbk)].

Niemeyer, P. and D. Leuck *Learning Java: A Bestselling Hands-On Java Tutorial*. (O'Reilly, 2016) 5th edition [ISBN 9781491942185 (pbk)].

Martin, R.C. *Clean Code: A Handbook of Agile Software Craftsmanship*. (Prentice Hall, 2008) [ISBN 9780132350884 (pbk)]. Clean code is simple, readable and easy for others to update. Clean coders pay attention to detail, and choose names for methods and variables that make the purpose of the case obvious, and comments unnecessary. This is an excellent book, aimed at professional developers but accessible to those with less experience and a way to get into good habits right from the start. Chapter 17 has a useful summary of the advice given to help you write clean code that is future proofed – namely, easy to maintain and straightforward to update.

Essential web page

The following Sun Microsystems, Inc. website may be useful as you will be able to look up information about Java classes and methods:

www.oracle.com/technetwork/java/javase/documentation/index.html

CO1110: Introduction to computing and the internet

CO1110 Part A

Stallings, W. *Computer organization and architecture: designing for performance*. (Pearson Education, 2015) 10th global edition [ISBN 9781292096858 (pbk)].

Stallings' web page for the 10th edition

http://williamstallings.com/ComputerOrganization/styled-6/ – Stallings' web page for the 10th edition of his book. Includes a link to the most up-to-date errata file, and some links for extra reading for each chapter of his book.

Recommended reading

Stokes, J. *Inside the Machine: An Illustrated Introduction to Microprocessors and Computer Architecture*. (San Francisco: No Starch Press, 2015) [ISBN 9781593276683 (pbk)].

Website

http://archive.arstechnica.com/paedia/c/cpu/part-1/cpu1-2.html – some very useful discussions by Jon Stokes on CPU basics, including pipelining.

CO1110 Part B

Essential reading

Comer, D.E. *Internetworking with TCP/IP Volume One*. (Pearson Education, 2014) Pearson new international edition [ISBN 9781292040813].

Useful web addresses

Specialist magazines such as *net* have regular tutorial features on all aspects of web design and authoring (www.creativebloq.com/net- magazine).

For information about the General Data Protection Regulation (GDPR) and Data Protection Act 2018 you should refer to documents available at the website of the UK Information Commissioner: The Information Commissioner is the authority charged with upholding the public's right to data privacy as set out in applicable legislation.

https://ico.org.uk/for-organisations/guide-to-data-protection/

There is also a guide to data protection in the EU, available from:

https://ec.europa.eu/info/law/law-topic/data-protection/data-protection-eu_en

https://blog.avast.com/ – a useful source of information on current and emerging computer security issues.

https://www.sophos.com/threat-center/threat-analyses/hoaxes.aspx – a good place to look for up-to-date information about virus hoaxes.

https://www.snopes.com/ – the internet's number one site for debunking online misinformation.

https://www.hoax-slayer.net/ – another good hoax site, which also contains details of circulating emails and rumours that might seem false, but are actually true.

Recommended reading

Casad, J. *Sams Teach Yourself TCP/IP in 24 Hours*. (Pearson Education, 2017) 6th edition [ISBN 9780672337895].

Castro, E. and B. Hyslop *HTML and CSS: Visual Quickstart Guide*. (Peachpit Press, 2013) 8th edition [ISBN 9780321928832].

Gillespie, A.A. *Cybercrime: Key Issues and Debates*. (Routledge, 2016) [ISBN 9780415712217 (hbk); 9780415712200 (pbk); 9781315884201 (ebk)].

Schneier, B. *Click Here to Kill Everybody: Security and Survival in a Hyper-connected World*. (W.W. Norton & Company, 2018) [ISBN 9780393608885 (hbk)] [ASIN: B07BLMQKZK (ebk)].

CO1112: Creative computing I: Image, sound and motion

Reas, C. and B. Fry *Processing: a programming handbook for visual designers and artists*. (MIT Press, 2007) [ISBN 9780262182621 (hbk)]. There is a 2nd edition available: (MIT Press, 2015) [ISBN 9780262028288 (hbk)]. However, note that the subject guide makes reference to the 1st edition of this book and that chapter references in the new edition may be different.

The above book is Essential reading for the course.

Other texts

Glassner, A. *Processing for visual artists: how to create expressive images and interactive art*. (Natick, MA: A.K. Peters, 2010) [ISBN 9781568817163 (pbk)].

Maeda, J. *Creative code: aesthetics + computation*. (Thames & Hudson, 2004) [ISBN 9780500285176 (pbk): out of print].

Reas, C. and B. Fry *Getting started with processing*. (Maker Media, 2015) 2nd edition [ISBN 9781457187087 (pbk)].

Shiffman, D. *Learning processing: a beginner's guide to programming images, animation, and interaction*. (Morgan Kaufmann/Elsevier 2015) 2nd edition [ISBN 9780123944436 (pbk)].

Note that the website listed as Essential reading on p.vii of the *Creative Computing 1: image, sound, motion Volume* 1 subject guide can now be found at the following address:

http://turnbull.mcs.st-and.ac.uk/~history/