Systems and Principles Unit Syllabus

Level 3 Software testing

7540-043
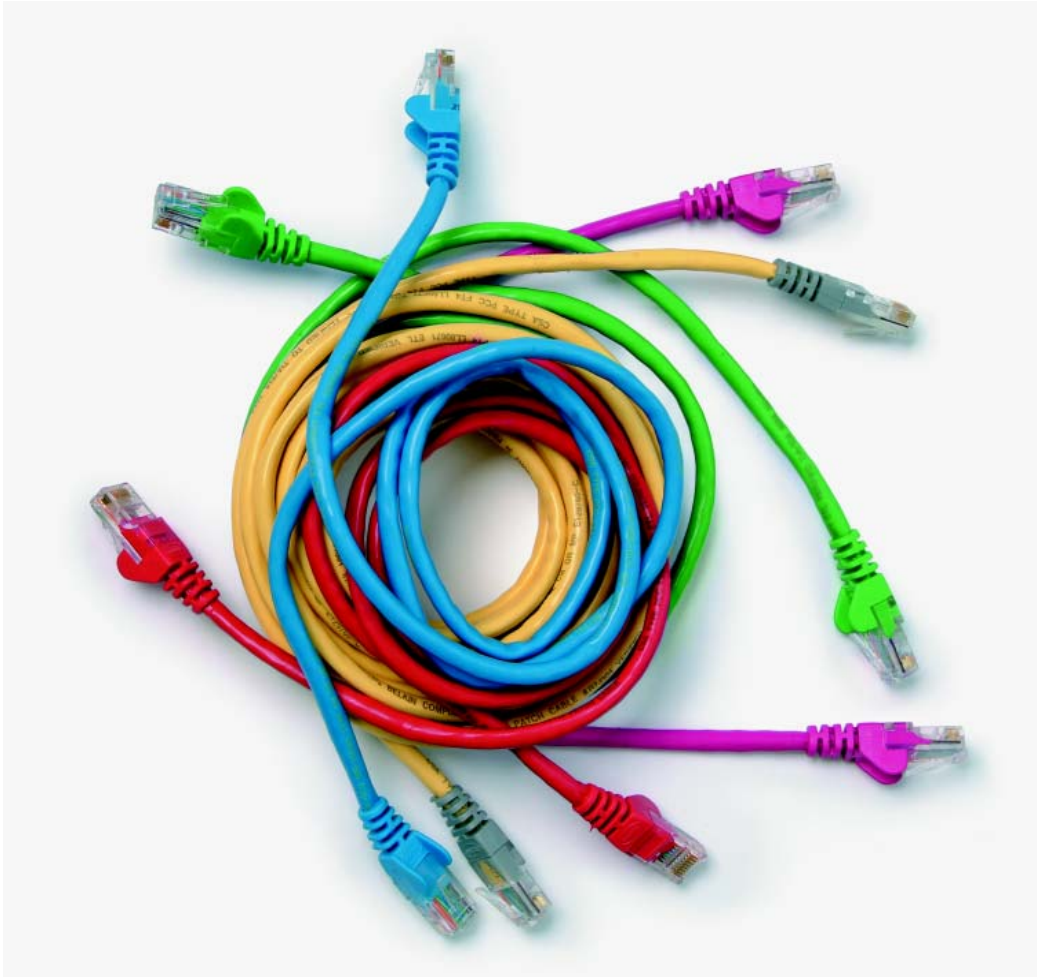
About City & Guilds

City & Guilds is the UK's leading provider of vocational qualifications, offering over 500 awards across a wide range of industries, and progressing from entry level to the highest levels of professional achievement. With over 8500 centres in 100 countries, City & Guilds is recognised by employers worldwide for providing qualifications that offer proof of the skills they need to get the job done.

City & Guilds Group

The City & Guilds Group includes City & Guilds, City & Guilds Institute, ILM (the Institute of Leadership & Management) which provides management qualifications, learning materials and membership services, NPTC which offers land-based qualifications and membership services, and HAB (the Hospitality Awarding Body). City & Guilds also manages the Engineering Council Examinations on behalf of the Engineering Council.

Equal opportunities

City & Guilds fully supports the principle of equal opportunities and we are committed to satisfying this principle in all our activities and published material. A copy of our equal opportunities policy statement is available on the City & Guilds website.

Copyright

The content of this document is, unless otherwise indicated, © The City and Guilds of London Institute 2010 and may not be copied, reproduced or distributed without prior written consent.

However, approved City & Guilds centres and candidates studying for City & Guilds qualifications may photocopy this document free of charge and/or include a locked PDF version of it on centre intranets on the following conditions:

- centre staff may copy the material only for the purpose of teaching candidates working towards a City & Guilds qualification, or for internal administration purposes
- candidates may copy the material only for their own use when working towards a City & Guilds qualification

The *Standard Copying Conditions* on the City & Guilds website also apply.

Please note: National Occupational Standards are not © The City and Guilds of London Institute. Please check the conditions upon which they may be copied with the relevant Sector Skills Council.

Publications

City & Guilds publications are available on the City & Guilds website or from our Publications Sales department at the address below or by telephoning +44 (0)20 7294 2850 or faxing +44 (0)20 7294 3387.

Every effort has been made to ensure that the information contained in this publication is true and correct at the time of going to press. However, City & Guilds' products and services are subject to continuous development and improvement and the right is reserved to change products and services from time to time. City & Guilds cannot accept liability for loss or damage arising from the use of information in this publication.

City & Guilds
1 Giltspur Street
London EC1A 9DD
T +44 (0)844 543 0000 (Centres)
T +44 (0)844 543 0033 (Learners)   **www.cityandguilds.com**
F +44 (0)20 7294 2413   **learnersupport@cityandguilds.com**

Contents

Unit 043 Software testing

Unit 043 Software testing
Syllabus Overview

Unit accreditation number   L/601/3511

Credit value   9

Rationale
This unit introduces the basics of testing strategies and techniques and their application.

Learning outcomes
There are **two** outcomes to this unit. The candidate will:
- Understand testing strategies and techniques
- Manage a test process for a software solution

Guided learning hours
It is recommended that **50** guided learning hours should be allocated for this unit. This may be on a full time or part time basis.

Connections with other qualifications
This unit contributes towards the learning outcomes and assessment criteria required for the level 3 Diploma in ICT Professional Competence.

Assessment and grading
Assessment will be by means of **a set assignment** covering practical activities and underpinning knowledge.

Unit 043   Software testing
Outcome 1   Understand testing strategies and techniques

Underpinning knowledge
The learner will be able to

1   explain the purpose and scope of
     a   unit (smallest component eg module, function) testing of software
     b   integration (several linked components some of which may be stubs) testing of software
     c   system testing (finished system) of software
2   describe the stages of system testing including alpha, beta, and acceptance testing
3   describe how automation can be applied to software testing
4   describe and differentiate functional (black box) and structural (white box) testing.

Unit 043 Software testing
Outcome 2 Manage a test process for a software solution

Practical activities
The learner will be able to

1   develop a test plan including:
    a   test specification (including functional and structural techniques)
    b   test cases
    c   test data and expected results
    d   resources and scheduling
    e   recording and checking of results (test log)
    f   evaluation
2   implement a test plan
3   produce a test report that
    a   specifies the presence or absence of errors
    b   make proposals for rectifying errors found
    c   reports on the success of the test against the original specification.

Underpinning knowledge
The learner will be able to

- list the essential features of a test plan
    a   test number
    b   date
    c   purpose/type of test (test case)
    d   test data and expected results
    e   resources and scheduling
- list the essential features of a test log
    a   test number
    b   date
    c   actual results
    d   record of discrepancies between actual results and expected results
- describe the importance of designing test data to confirm a program works correctly under normal and exceptional circumstances
    a   valid
    b   invalid
    c   boundary
- state that the test number must provide a cross reference between a test plan its corresponding test log and test output (printed, screen print or input/output file)

Unit record sheet

Use this form to track your progress through this unit.

Tick the boxes when you have covered each outcome. When they are all ticked, you are ready to be assessed.

Outcome	✔	Date
1 Understand testing strategies and techniques	☐	
2 Manage a test process for a software solution	☐	

Candidate Signature .... **Date** ....

City & Guilds Registration Number ....

Quality nominee (if sampled) .... **Date** ....

Assessor Signature .... **Date** ....

External Verifier Signature (if sampled) .... **Date** ....

Centre Name .... **Centre Number** ....