

Level 2/3 Certificate in Electronic Security and Emergency Systems (1853)



1852-101

2330-201

2330-202

Exemption guidance

www.cityandguilds.com
November 2011
Version 0.7

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, ILM (the Institute of Leadership & Management, which provides management qualifications, learning materials and membership services), City & Guilds NPTC (which offers land-based qualifications and membership services), City & Guilds HAB (the Hospitality Awarding Body), and City & Guilds Centre for Skills Development. 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 our website.

Copyright

The content of this document is, unless otherwise indicated, © The City and Guilds of London Institute 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 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* (which can be found on our 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 from our website or from our Publications Sales department, using the contact details shown below.

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

F +44 (0)20 7294 2413

www.cityandguilds.com

centresupport@cityandguilds.com

Level 2/3 Certificate in Electronic Security and Emergency Systems (1853)

1852-101

2330-201

2330-202

Exemption guidance

City & Guilds
Skills for a brighter future



www.cityandguilds.com

Contents

1	Introduction for Assessors	4
2	1853-001 mapped to 2330-202	5
3	1853-002 mapped to 2330-201	8
4	1853-009/1853-001 mapped to 1852-101	11
5	1853-010/1853-002 mapped to 1852-101	16

1 Introduction for Assessors

About this document

This document is designed to support assessors in providing evidence of previous learning for candidates taking 1853 Level 2/3 Certificate in Electronic Security and Emergency Systems who have already achieved the following units:

1852-101 Electrical Principles

2330-201 Working Effectively and Safely in the Electrotechnical Environment

2330-202 Level 2 Principles of Electro-Technology

The above units do not cover some of the assessment criteria included in 1853, therefore centres will need to provide the relevant additional evidence in the form of professional discussion as listed in section 2, 3, 4 and 5 of this document. Centres should use the pro formas provided in those same sections to record this evidence.

Please note: professional discussion may include confirmation of knowledge evidence from:

- other certification
- work products or training courses
- witness testimony
- case studies, projects, assignments
- candidate reflective accounts eg. from work experience.

Centres **must** have evidence for achievement of the relevant units in 1852 or 2330 (in the form of copies of certificates), **as well as** completed pro forma professional discussion forms, as contained in this document, before they can claim the relevant proxy units in the 1853 qualification to show achievement of:

1853-001 Level 2 Electrical and Electronic Principles in Electrotechnical Environments

1853-002 Level 2 Working Effectively and Safely in Electrotechnical Environments

1853-009 Level 3 Electrical and Electronic Principles of Electro-Technology

1853-010 Level 3 Working Effectively and Safely in Electrotechnical Environments

Centres should be aware that this evidence will be sampled by External Verifiers to ensure it is valid and sufficient and that all requirements have been met.

Professional discussion evidence record

2 1853-001 mapped to 2330-202

Candidate name: _____ Date: _____

Assessor name: _____

The candidate has achieved unit 2330-202. In addition, the following assessment criteria have been met.

Level 2 1853			
Unit	Learning outcome(s)	Assessment criteria	
Unit 001 Electrical and electronic Principles in Electrotechnical Environments	2. Know basic electrical principles, use formulae, make calculations and understand the use of measuring equipment in electrical and electronic circuitry	The candidate has 2.32 described the nature of sound waves 2.33 described the principle of sound measurement 2.34 described the use of decibel sound meters	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	3. Understand basic electrical applications, principles of fault protection, principles of system installation, maintenance and fault identification	3.2 described the operation of Power supplies: full wave and rectification and smoothing circuits 3.3 described the function of switched mode power supply and constant current regulators 3.4 described the operation of voltage regulators 3.19 stated the requirements and suitable methods of restoring building fabric on completion of installation 3.20 stated the benefits and limitations of thermal joining and bonding with adhesives compared with mechanical fastenings and terminations 3.24 stated the range and application of materials for plant, equipment and components that would be met or used within maintenance programmes 3.26 stated the importance of minimising downtime/shut down/meantime between failures	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

Assessment decision and feedback to candidate

The above is an accurate record of the discussion.

Candidate signature: _____ Date: _____

The above is an accurate record of the discussion, and I am satisfied that the candidate has successfully demonstrated achievement of the assessment criteria listed.

Assessor signature: _____ Date: _____

Internal Verifier signature (if sampled): _____ Date: _____

Professional discussion evidence record



3 1853-002 mapped to 2330-201

Candidate name: _____ Date: _____

Assessor name: _____

The candidate has achieved unit 2330-201. In addition, the following assessment criteria have been met.

Level 2 1853			
Unit	Learning outcome(s)	Assessment criteria	
Unit 002 Working Effectively and Safely in Electrotechnical Environments	1. Know safe systems of working	The candidate has	
		1.4 stated the reasons for the safe handling and storage of tools, equipment and electrically operated tools	<input type="checkbox"/>
		1.6 identified safe methods for fitting and fixing activities	<input type="checkbox"/>
		1.11 stated the importance of developing positive personal attitudes to safety in order to adopt safe systems of working	<input type="checkbox"/>
		1.15 stated the importance of securing tools and equipment and	<input type="checkbox"/>
		1.16 stated procedures for safe storage of tools and equipment	<input type="checkbox"/>
	2. Know statutory regulations, codes of practice and memorandum of guidance relevant to maintaining a safe working environment	1.22 stated the purpose and methods of using measuring and marking out equipment	<input type="checkbox"/>
		2.8 stated the difference between statutory and non-statutory requirements	<input type="checkbox"/>
	3. Understand technical information and data supplied for working effectively and safely	2.13 stated the requirements for a 'permit to work' in hazardous areas	<input type="checkbox"/>
		3.1 calculated dimensions and measurements from scaled drawings and diagrams	<input type="checkbox"/>
3.2 identified electro technical symbols from working drawings and specifications		<input type="checkbox"/>	
	3.3 stated the functions of the following in	<input type="checkbox"/>	

Candidate signature: _____ Date: _____

The above is an accurate record of the discussion, and I am satisfied that the candidate has successfully demonstrated achievement of the assessment criteria listed.

Assessor signature: _____ Date: _____

Internal Verifier signature (if sampled): _____ Date: _____

Professional discussion evidence record

4 1853-009/1853-001 mapped to 1852-101

Candidate name: _____ Date: _____

Assessor name: _____

The candidate has achieved unit 1852-101. In addition, the following assessment criteria have been met.

Level 3 1853			
Unit	Learning outcome(s)	Assessment criteria	
Unit 009 Electrical and Electronic Principles of Electro- Technology	5. Understand Internet Protocol (IP) and its application to the security and emergency systems industry	The candidate has	
		5.3 used schematic diagrams to explain each of the following processes: a. Electronic Mail (E mail) b. Simple Mail Transfer Protocol (SMTP) c. Transmission Control Protocol (TCP) d. User Data Protocol (UDP)	<input type="checkbox"/>
		5.4 explained how the Open Systems Interconnection model created by ISO defines Internet Protocol	<input type="checkbox"/>
		5.5 explained the purpose and importance of a. IP Addresses b. Internet Service Providers (ISPs) c. domain names	<input type="checkbox"/>
		5.6 explained how a client server network operates	<input type="checkbox"/>
		5.7 explained the difference between Internet & Intranet	<input type="checkbox"/>
		5.8 explained how an electronic security and / or an emergency system can utilise a customer's existing IT network	<input type="checkbox"/>
	6. Understand Communication methods and Signal Transmission systems in the security and emergency systems industry	6.1 explained the difference between Analogue and Digital signal transmission	<input type="checkbox"/>
		6.2 explained diagrammatically how 'Pulse Code Modulation' (PCM) and Pulse Amplitude Modulation (PAM) make analogue to digital conversions and vice versa	<input type="checkbox"/>
		6.3 explained how signals travel in a. wire cables b. co axial cables c. optical fibres	<input type="checkbox"/>

		<p>d. free space</p> <p>6.4 explained the purpose of 'multiplexing' in signal transmission technology <input type="checkbox"/></p> <p>6.5 used diagrams to explain the difference between 'frequency division multiplexing' and 'time based multiplexing' <input type="checkbox"/></p> <p>6.6 explained how the Public Switched Telephone Network (PSTN) and broadband services can be utilised to communicate from a system to a remote Alarm Receiving Centre' (ARC) <input type="checkbox"/></p> <p>6.7 described the principles of operation of a modem <input type="checkbox"/></p> <p>6.8 explained the operation of a digital communicator <input type="checkbox"/></p> <p>6.9 explained the difference between a digital communicator and a direct line connection <input type="checkbox"/></p> <p>6.10 explained how commercial 'over telephone line connections' operate <input type="checkbox"/></p> <p>6.11 compared the benefits and disadvantages of each of the following types of transmission: a. Wi-Fi b. hard wired <input type="checkbox"/></p> <p>6.12 explained what is meant by dual path signalling <input type="checkbox"/></p> <p>6.13 explained the difference between analogue and addressable systems</p>	
	<p>7. Understand Electro/Electronic Measurement and Test procedures used in the security and emergency systems industry</p>	<p>7.4 explained why all test equipment must be calibrated at pre-determined periods <input type="checkbox"/></p> <p>7.5 explained the process of calibration <input type="checkbox"/></p>	

	<p>8. Understand how standards and regulations influence and control electro/electronic applications in the security and emergency systems industry</p>	<p>8.4 explained the impact of each of the following on the design and operation of electronic security and emergency systems:</p> <ul style="list-style-type: none"> a. Disability discrimination Act b. Data protection Act c. ISO 9000 Quality Systems d. Noise pollutions e. Consumer Protection f. Trading Standards g. Health & Safety at Work h. Construction Design Management <p>8.5 explained the cost and design implications of complying with British Standards, Regulations and Codes of Practice</p> <p>8.6 explained the role of</p> <ul style="list-style-type: none"> a. BSIA b. BSI c. ECA d. Inspectorate bodies <p>8.7 explained the relevance of the EMI Directive</p>	<p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>
Level 2 1853			
<p>Unit 001 Electrical and electronic Principles in Electrotechnical Environments</p>	<p>2. Know basic electrical principles, use formulae, make calculations and understand the use of measuring equipment in electrical and electronic circuitry</p>	<p>2.13 applied calculations involving force, mass, energy, power and efficiency</p> <p>2.16 stated the purpose of the following equipment for measuring and marking out</p> <ul style="list-style-type: none"> a rules, tapes b gauges c levels, plumbs d squares e scribes f electronic devices 	<p><input type="checkbox"/></p> <p><input type="checkbox"/></p>
	<p>3. Understand basic electrical applications, principles of fault protection, principles of system installation, maintenance and fault identification</p>	<p>3.19 stated the requirements and suitable methods of restoring building fabric on completion of installation</p> <p>3.20 stated the benefits and limitations of thermal joining and bonding with adhesives compared with mechanical fastenings and terminations</p> <p>3.24 stated the range and application of materials for plant, equipment and components that would be met or used within maintenance programmes</p> <p>3.26 stated the importance of minimising downtime/shut down/meantime between failures</p>	<p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>

Assessment decision and feedback to candidate

The above is an accurate record of the discussion.

Candidate signature: _____ Date: _____

The above is an accurate record of the discussion, and I am satisfied that the candidate has successfully demonstrated achievement of the assessment criteria listed.

Assessor signature: _____ Date: _____

Internal Verifier signature (if sampled): _____ Date: _____

Professional discussion evidence record



5 1853-010/1853-002 mapped to 1852-101

Candidate name: _____ Date: _____

Assessor name: _____

The candidate has achieved unit 1852-101. In addition, the following assessment criteria have been met.

Level 3 1853			
Unit	Learning outcome(s)	Assessment criteria	
Unit 010 Working Effectively and Safely in Electrotechnical Environments	1. Understand the background to health & safety legislation and the principles thereof	The candidate has 1.11 explained the importance of RIDDOR (Reporting of Injuries, Diseases, Dangerous Occurrences Regulations) and Incident Contact Centres (ICC)	<input type="checkbox"/>
	3. Understand the requirements for health & safety in a company vehicle	3.1 explained the HSE requirements for company vehicles and their drivers	<input type="checkbox"/>
		3.2 conducted a risk assessment of a vehicle	<input type="checkbox"/>
		3.3 described the training a company car user should undergo	<input type="checkbox"/>
4. Understand the requirements for health & safety on site		4.2 explained the circumstances where a harness should be used	<input type="checkbox"/>
		4.9 explained the purpose of a method statement	<input type="checkbox"/>

Assessment decision and feedback to candidate

The above is an accurate record of the discussion.

Candidate signature: _____ Date: _____

The above is an accurate record of the discussion, and I am satisfied that the candidate has successfully demonstrated achievement of the assessment criteria listed.

Assessor signature: _____ Date: _____

Internal Verifier signature (if sampled): _____ Date: _____

City & Guilds
Skills for a brighter future



www.cityandguilds.com

City & Guilds
Skills for a brighter future



www.cityandguilds.com

Useful contacts

UK learners

General qualification information

T: +44 (0)844 543 0033

E: learnersupport@cityandguilds.com

International learners

General qualification information

T: +44 (0)844 543 0033

F: +44 (0)20 7294 2413

E: intcg@cityandguilds.com

Centres

Exam entries, Registrations/enrolment, Certificates, Invoices, Missing or late exam materials, Nominal roll reports, Results

T: +44 (0)844 543 0000

F: +44 (0)20 7294 2413

E: centresupport@cityandguilds.com

Single subject qualifications

Exam entries, Results, Certification, Missing or late exam materials, Incorrect exam papers, Forms request (BB, results entry), Exam date and time change

T: +44 (0)844 543 0000

F: +44 (0)20 7294 2413

F: +44 (0)20 7294 2404 (BB forms)

E: singlesubjects@cityandguilds.com

International awards

Results, Entries, Enrolments, Invoices, Missing or late exam materials, Nominal roll reports

T: +44 (0)844 543 0000

F: +44 (0)20 7294 2413

E: intops@cityandguilds.com

Walled Garden

Re-issue of password or username, Technical problems, Entries, Results, GOLLA, Navigation, User/menu option, Problems

T: +44 (0)844 543 0000

F: +44 (0)20 7294 2413

E: walledgarden@cityandguilds.com

Employer

Employer solutions, Mapping, Accreditation, Development Skills, Consultancy

T: +44 (0)121 503 8993

E: business_unit@cityandguilds.com

Publications

Logbooks, Centre documents, Forms, Free literature

T: +44 (0)844 543 0000

F: +44 (0)20 7294 2413

If you have a complaint, or any suggestions for improvement about any of the services that City & Guilds provides, email: feedbackandcomplaints@cityandguilds.com

Published by City & Guilds
1 Giltspur Street
London
EC1A 9DD
T +44 (0)844 543 0000
F +44 (0)20 7294 2413
www.cityandguilds.com

City & Guilds is a registered charity
established to promote education
and training