



WHY CHOOSE CITY & GUILDS

FOR ENGINEERING?

Our courses focus on the practical skills needed for a range of different careers in the engineering sector, and can be used as part of the contribution towards professional registration.

That's because our vocational courses are created in collaboration with industry leaders and employers, which means you can feel assured that we'll help provide your learners with the right skills to succeed.





WHY CHOOSE CITY & GUILDS

FOR ENGINEERING?

As one of the leading vocational skills providers, our courses set the benchmark for vocational learning and workplace skills – our engineering courses are no different.

WORLD RENOWNED COURSES

We have over 130 years of experience in designing qualifications and providing learners with real-life, practical skills needed to succeed in the modern workplace. Those with a City & Guilds engineering qualification are highly valued by employers around the world as the benchmark for excellence.

DEVELOPED WITH THE INDUSTRY

Because our portfolio of courses has been developed under the guidance of industry professionals, we can assure you of its continual development and relevance.

By working with industry professionals, our courses focus on the knowledge and practical skills required for employment and a career in the engineering industry.

FOR THE INDUSTRY

The City & Guilds brand is recognised by employers all around the world, so you can be sure that your learners will be successful wherever they go.

Our international engineering courses are all supported by a Europass Certificate Supplement, helping to ensure that the skills our graduates gain are well understood by employers and other learning providers.

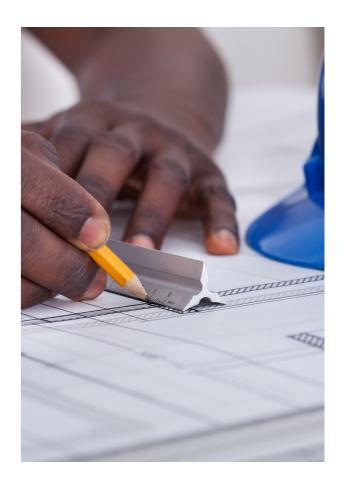
Our Level 3 courses are endorsed by the Welding Institute and approved by the Institution of Mechanical Engineers (IMechE) as contributing towards professional registration as an Engineering Technician (EngTech).

ACCREDITED WITH THE SEAL OF APPROVAL

Our 2730 and 2850 engineering suite of courses are accredited on the Qualification and Credit Framework (QCF).

WHAT COURSES DO WE OFFER?

We offer a broad range of courses across the entire engineering industry, from entry-level skills awards to post graduate courses. They include mechanical, electrical, electronic, civil and telecommunications. As such, you're able to offer learners the right course for their needs, ensuring they'll have everything they require to succeed in their job.



ABOUT OUR ASSESSMENTS

We work with employers, tutors and learners to make sure the assessment criteria for our courses meets everyone's needs. We do this by ensuring that each assessment is relevant, engaging, coherent and fair.

RELEVANT

By consulting industry professionals, we build our assessments to ensure they test the critical skills and knowledge that today's employers are seeking.

ENGAGING

We aim to capture the attention of learners from start to finish. With interesting course material we can motivate them to succeed.

COHERENT

We do everything we can to ensure learners fully understand our assessments. By using straightforward language we can remove ambiguity to deliver the clearest possible instructions.

FAIR

We avoid unfair discrimination by focussing solely on the relevant skills and knowledge needed to pass a particular course, considering only the necessary assessment criteria for that qualification.



ABOUT OUR ASSESSMENTS

METHODS OF ASSESSMENT

Not all courses are the same and not all learners are the same. That's why we use different types of assessment to suit different needs; giving you and your learners the best chance of success.

There are four main types of assessment used to test the hands-on skills that learners need in the workplace, as well as the theory needed to apply these skills in practice.

CITY & GUILDS SET QUESTION PAPERS

City & Guilds' question papers are set twice a year at fixed times. These multiple choice and short answer papers provide the rigour and externality required for assessing the course theory.

PRACTICAL ASSIGNMENTS

These City & Guilds set assignments provide structure and flexibility to practical assessment and can be co-ordinated around the learner's readiness and availability. Learners' work can also be sampled by City & Guilds to help you to deliver the assessments at the required standard.

CENTRE-SET ASSIGNMENTS

These tests are coordinated and assessed entirely by the centre. They offer a great deal of flexibility for customers and can be adapted to fit local needs, infrastructure and learners' readiness to be tested. Centre-set assignments can also be sampled by City & Guilds to help you devise the right assessments and deliver to the required standard.

E-VOLVE ONLINE TESTS

These are highly accessible multiple choice online exams that are perfect for assessing a learner's knowledge anywhere, anytime, and for reducing the amount of administration required. They offer instant feedback, immediate results and are externally marked.

E-volve tests can be taken on-demand for even greater flexibility for you and your learners. Put simply, you can set exams whenever it is most convenient for you.



Visit our website for:

e-volve familiarisation material

HOW DO WE SUPPORT

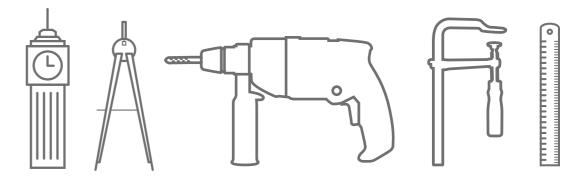
TEACHING AND LEARNING?

We'll give you everything you need to deliver our courses and it's all covered in the price so there are no nasty hidden charges.

If you would like a bit more help in boosting your success rates, we have some great online resources to choose from. These will help you save time and money, as well as assist in the delivery of learning materials — so learners have the best possible experience.

Below is a list of the types of resources that you'll receive free of charge with our courses:

- Qualification handbooks
- Assessment packs
- Exemplar assignments
- Recognitions lists
- Sample schemes of work
- Sample session plans
- Individual learning plans
- Handouts
- Worksheets
- Activities
- Assessment support
- Further reading/links
- Glossary
- Equipment lists
- Career sheets
- PowerPoint presentations
- Practice question papers



HOW DO WE SUPPORT

TEACHING AND LEARNING?

We'll give you everything you need to deliver our courses and it's all covered in the price so there are no nasty hidden charges.

If you would like a bit more help in boosting your success rates, we have some great online resources to choose from. These will help you save time and money, as well as assist in the delivery of learning materials — so learners have the best possible experience.

Below is a list of the types of resources that you'll receive free of charge with our courses:

- Qualification handbooks
- Assessment packs
- Exemplar assignments
- Recognitions lists
- Sample schemes of work
- Sample session plans
- Individual learning plans
- Handouts
- Worksheets
- Activities
- Assessment support
- Further reading/links
- Glossary
- Equipment lists
- Career sheets
- PowerPoint presentations
- Practice question papers

SMARTSCREEN

Your online teaching and learning resource portal

SmartScreen is a one-stoponline-shop with unlimited access to everything you and your learners need for a positive learning experience.

It ensures that our courses are even easier for you to deliver, saving you time on planning teaching activities, and supporting learner understanding. It contains all the necessary teaching and learning support material, which includes tutor forums, lesson plans, presentations, handouts, worksheets, and equipment lists.

Practice question papers are also available through SmartScreen to help learners prepare for assessment.

Login details are available on request via Walled Garden.

City Smart Screen

HOW DO WE SUPPORT

TEACHING AND LEARNING?

We'll give you everything you need to deliver our courses and it's all covered in the price so there are no nasty hidden charges.

If you would like a bit more help in boosting your success rates, we have some great online resources to choose from. These will help you save time and money, as well as assist in the delivery of learning materials — so learners have the best possible experience.

Below is a list of the types of resources that you'll receive free of charge with our courses:

- Qualification handbooks
- Assessment packs
- Exemplar assignments
- Recognitions lists
- Sample schemes of work
- Sample session plans
- Individual learning plans
- Handouts
- Worksheets
- Activities
- Assessment support
- Further reading/links
- Glossary
- Equipment lists
- Career sheets
- PowerPoint presentations
- Practice question papers

EVENTS

WHERE LIKE-MINDED PEOPLE MEET

We host a variety of events to help support you and your teams, from networking with other providers, to product knowledge training and consultation with our Quality Assurance experts. Simply contact your local office for event information in your area.

OUR QUALITY ASSURANCE

QUALITY ASSURANCE YOU CAN TRUST

Our approach to quality assurance is designed to support your centre in upholding our rigorous quality standards by assigning a subject matter expert called an 'External Verifier' or 'EV'.

Our EVs are trained to offer advice and guidance around the delivery of courses. As well as being our guardian for quality, EVs also act as mentors and provide recommendations on how your centre can continue to meet our quality requirements. With a City & Guilds EV you should feel like you have a trusted expert consultant that you can rely on.

YOUR GUIDE TO DELIVERING OUR COURSES

When becoming an approved City & Guilds centre, you'll receive your International Centre Guide. It's included in the approval fee and is your step-by-step guide to ensuring that you're delivering our courses to the City & Guilds standard. There are four key areas that it covers:

- Management and administrative systems
- Physical and staff resources
- Assessment
- Quality assurance

GETTING APPROVED

We set our standards high and that's why our brand and our qualified learners are renowned the world over. It's also why any centre wishing to offer City & Guilds courses must be officially approved by us. Our local customer service team and expert consultants are there to help you get up and running as quickly as possible.

WHAT SHOULD YOU DO NEXT?

| If you want to gain approval to start running City & Guilds courses, simply follow the link below: |
|---|
| For anything else, just contact your local office and they'll be happy to help. Find your local office: |
| |
| |
| |
| |

WHAT SHOULD YOU DO NEXT?

It's quick and easy to gain approval, just follow these steps:

STEP 1 LEARNER NUMBERS

There is a minimum number of learners per course, per year that we can accept, so please check the number of learners you expect to enrol and get in touch with your local office. They will be happy to discuss your delivery plans and might even be able to assist with your marketing efforts.

STEP 2 APPROVAL PREPARATION

To make sure you're ready, use the information in the Qualification Handbook and International Centre Guide to check you have the following:

- Fully qualified training and assessment staff
- Appropriate facilities and equipment for teaching, learning and assessment
- Robust management and quality assurance systems

STEP 3 APPROVAL APPLICATION

Complete the Centre Approval form, send it to your local office and we'll help you get up and running as quickly as possible.

Those that want to add new courses to their existing City & Guilds portfolio only need to apply for that qualification. In some cases, where customers already offer similar courses, we may be able to fast-track their approval application.

If you have anything else you wish to ask us about your centre's eligibility, we're here to help. Just contact your local office.

APPENDIX

CITY & GUILDS COURSES

| | MECHANICAL ENGINEERING | ELECTRICAL AND ELECTRONIC ENGINEERING | CIVIL ENGINEERING | TELECOMMUNICATION ENGINEERING |
|----------------|---------------------------|---------------------------------------|----------------------|----------------------------------|
| | | | | |
| LEVEL 2 | | | | |
| | | | | |
| LEVEL 1 | | | | |
| | | | | |
| | | | | |
| ENTRY LEVEL | | | | |
| | | | | |
| | | | | |

CITY & GUILDS COURSES

| | MECHANICAL ENGINEERING | ELECTRICAL AND ELECTRONIC ENGINEERING | CIVIL ENGINEERING | TELECOMMUNICATION ENGINEERING |
|---------|---------------------------|---------------------------------------|----------------------|----------------------------------|
| LEVEL 7 | | | | |
| LEVEL 6 | | | | |
| LEVEL 5 | | | | |
| LEVEL 4 | | | | |
| | | | | |
| | | | | |
| LEVEL 3 | | | | |
| | | | | |
| | | | | |

ENTRY LEVEL: SKILLS FOUNDATION CERTIFICATE

(BASIC ENGINEERING 3528-08 AND 3528-12)

UNITS

- Basic engineering skills
- Basic electronic engineering

ASSESSMENTS

Learners are required to successfully complete practical assignments and oral questions.

PROGRESS IN LEARNING

On completion of these courses learners may progress into employment or the following City & Guilds Level 1 qualification. If the centre feels the learner is ready, they may even be able to progress straight to Level 2:

- Level 1 Certificate in Engineering (2850-80)
- Level 2 Certificate/Diploma in Engineering - Manufacturing Technology (2850-81/51)
- Level 2 Certificate/Diploma in Engineering - Maintenance Technology (2850-82/52)
- Level 2 Certificate/Diploma in Engineering - Fabrication and Welding Technology (2850-83/53)
- Level 2 Certificate/Diploma in Engineering - Electrical and Electronics Technology (2850-84/54)

PROGRESS TO A JOB

Entry level jobs

ENTRY LEVEL: SKILLS FOUNDATION CERTIFICATE

(BASIC ENGINEERING 3528-08 AND 3528-12)

WHO IS THIS COURSE FOR?

The Skills Foundation Awards are perfect for learners interested in engineering and looking for courses that focus on basic engineering practical skills.

For those with existing experience of basic engineering skills, these awards will provide formal recognition of practical skills gained in the workplace.

| QUICK | INKS | |
|-------|------|--|

ENTRY LEVEL: SKILLS PROFICIENCY CERTIFICATE

(BASIC ENGINEERING 3529-08 TO 3529-12)

UNITS

- Basic electrical engineering
- Basic metal machining
- Basic plant maintenance
- Basic fabrication, welding and pipework
- Electronic engineering

ASSESSMENTS

Learners are required to successfully complete practical assignments and oral questions.

PROGRESS IN LEARNING

On completion of these courses learners may progress into employment or the following City & Guilds Level 1 qualification. If the centre feels the learner is ready, they may even be able to progress straight to Level 2:

- Level 1 Certificate in Engineering (2850-80)
- Level 2 Certificate/Diploma in Engineering - Manufacturing Technology (2850-81/51)
- Level 2 Certificate/Diploma in Engineering - Maintenance Technology (2850-82/52)
- Level 2 Certificate/Diploma in Engineering - Fabrication and Welding Technology (2850-83/53)
- Level 2 Certificate/Diploma in Engineering - Electrical and Electronics Technology (2850-84/54)

PROGRESS TO A JOB

Entry level jobs

ENTRY LEVEL: SKILLS PROFICIENCY CERTIFICATE

(BASIC ENGINEERING 3529-08 TO 3529-12)

WHO IS THIS COURSE FOR?

The Skills Proficiency Awards build upon the Foundation Awards, for learners interested in engineering and looking for courses that focus on basic engineering practical skills.

For those with existing experience of basic engineering skills, these awards will provide formal recognition of practical skills gained in the workplace.

| QUICK LINKS | |
|--------------------|--|

LEVEL 1: CERTIFICATE IN

ENGINEERING (2850-80)

UNITS

Learners must take two optional units.

Mandatory Units

101 Working in engineering

Optional Units

- 102 Carrying out basic fitting techniques
- 103 Carrying out basic milling techniques
- 104 Carrying out basic turning techniques
- **105** Carrying out mechanical assembly
- 106 Carrying out electronics assembly
- **107** Carrying out electrical assembly
- **108** Working with sheet metals
- 109 Carrying out manual arc welding techniques
- 110 Carrying out MIG welding processes
- 111 Carrying out TIG welding processes

UNITS (CONT'D)

- 112 Carrying out OXY-Acetylene welding processes
- 113 Carrying out surface finishing techniques
- 114 Carrying out mechanical maintenance
- 115 Communicating using Computer Aided Design (CAD) systems
- **116** Producing engineering drawings

ASSESSMENTS

Learners are required to successfully complete the following:

- One online multiple-choice assessment for the mandatory unit
- One assignment for each chosen optional unit which contains practical and knowledge tasks

PROGRESS IN LEARNING

On completion of these courses learners may progress into employment or to the following City & Guilds courses:

- Level 2 Certificate/Diploma in Engineering - Manufacturing Technology (2850-81/51)
- Level 2 Certificate/Diploma in Engineering - Maintenance Technology (2850-82/52)
- Level 2 Certificate/Diploma in Engineering - Fabrication and Welding Technology (2850-83/53)
- Level 2 Certificate/Diploma in Engineering - Electrical and Electronics Technology (2850-84/54)

PROGRESS TO A JOB

These courses can help learners to progress in a wide range of roles including:

- Entry Level
- Trainee Technician

UNIT ROUTES 2850-93

Learners are able to claim unit certification should they wish to take units as individual courses.

LEVEL 1: CERTIFICATE IN

ENGINEERING (2850-80)

WHO IS THIS COURSE FOR?

This level is ideal for those looking for a basic understanding of the skills and engineering principles needed to enter the engineering sector or school leavers considering a career in engineering.

This course will introduce learners to safe working practices and the basic materials, hand tools, and machinery that engineers use in their everyday work. Learners are also able to choose units from different engineering areas to suit different career paths.

LEVEL 1: CERTIFICATE IN

ENGINEERING (2850-80)

SUPPORT MATERIALS

In addition to all our standard support, the following units are supported by SmartScreen:

| Unit 101 | Working in engineering |
|----------|--|
| Unit 102 | Carrying out basic fitting techniques |
| Unit 103 | Carrying out basic milling techniques |
| Unit 104 | Carrying out basic turning techniques |
| Unit 105 | Carrying out mechanical assembly |
| Unit 106 | Carrying out electronics assembly |
| Unit 107 | Carrying out electrical assembly |
| Unit 108 | Working with sheet metals |
| Unit 109 | Carrying out manual arc welding techniques |
| Unit 110 | Carrying out MIG welding processes |
| Unit 112 | Carrying out OXY-Acetylene welding processes |
| | |



MANUFACTURING TECHNOLOGY (2850-51/81)

UNITS

Learners must take two (for the Certificate) or three (for the Diploma) optional units.

Mandatory Units

201 Working in engineering

202 Principles of engineering technology

253 Principles of manufacturing technology

Optional Units

204 Machine components using milling techniques

205 Machine components using turning techniques

206 Using bench fitting techniques

207 Using computer aided manufacturing processes

ASSESSMENTS

Learners are required to successfully complete the following:

- One online multiple-choice assessment for each mandatory unit
- One short-answer question paper for each 'Principles of' mandatory unit
- One assignment for each chosen optional unit

PROGRESS IN LEARNING

On completion of these courses learners may progress into employment or to the following City & Guilds and ILM courses:

- Level 3 Diploma in Engineering -Welding (2850-85)
- Level 3 Diploma in Engineering Fabrication (2850-86)
- Level 3 Diploma in Engineering Fabrication and Welding (2850-87)

PROGRESS IN LEARNING (CONT'D)

- Level 3 Diploma in Engineering -Maintenance, Installation and Commissioning (2850-88)
- Level 3 Diploma in Engineering -Mechanical Manufacturing Engineering (2850-89)
- Level 3 Diploma in Engineering -Electrical and Electronic Engineering (2850-90)
- ILM, the Institute of Leadership and Management

UNIT ROUTES 2850-94

Learners are able to claim unit certification should they wish to take units as individual courses.

PROGRESS TO A JOB

These courses can help learners to progress in a wide range of roles including:

- Electrician
- Welder / Fabricator
- Machine Operative
- Maintenance Technician

MANUFACTURING TECHNOLOGY (2850-51/81)

WHO IS THIS COURSE FOR?

This level is ideal for anyone looking to begin their career in engineering, to develop their understanding of engineering skills and principles, or for school leavers with some knowledge or experience in engineering.

This course focuses on the practical skills and underpinning knowledge required to work in manufacturing technology, and introduces learners to the basic principles of mathematics, science and technologies that underpin engineering.

| QUICK LINKS | |
|--------------------|--|

MANUFACTURING TECHNOLOGY (2850-51/81)

SUPPORT MATERIALS

In addition to all our standard support, the following units are supported by SmartScreen:

Unit 201 Working in engineering

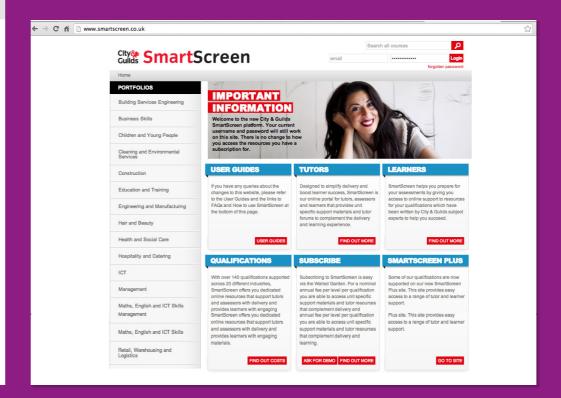
Unit 202 Principles of engineering technology

Unit 204 Machine components using milling techniques

Unit 205 Machine components using turning techniques

Unit 206 Using bench fitting techniques

Unit 253 Principles of manufacturing technology



MAINTENANCE TECHNOLOGY (2850-52/82)

UNITS

Learners must take two (for the Certificate) or three (for the Diploma) optional units.

Mandatory Units

- **201** Working in engineering
- **202** Principles of engineering technology
- **254** Principles of maintenance technology

Optional Units

- 209 Assembling and maintaining fluid power systems
- 210 Maintenance of mechanical devices and equipment
- 211 Maintaining electrical wiring support systems
- Maintaining electrical equipment and systems

ASSESSMENTS

Learners are required to successfully complete the following:

- One online multiple-choice assessment for each mandatory unit
- One short-answer question paper for each 'Principles of' specialist unit
- One assignment for each chosen optional unit

PROGRESS IN LEARNING

On completion of these courses learners may progress into employment or to the following City & Guilds and ILM courses:

- Level 3 Diploma in Engineering -Welding (2850-85)
- Level 3 Diploma in Engineering Fabrication (2850-86)
- Level 3 Diploma in Engineering Fabrication and Welding (2850-87)

PROGRESS IN LEARNING (CONT'D)

- Level 3 Diploma in Engineering -Maintenance, Installation and Commissioning (2850-88)
- Level 3 Diploma in Engineering -Mechanical Manufacturing Engineering (2850-89)
- Level 3 Diploma in Engineering -Electrical and Electronic Engineering (2850-90)
- ILM, the Institute of Leadership and Management

PROGRESS TO A JOB

These courses can help learners to progress in a wide range of roles including:

- Electrician
- Welder / Fabricator
- Machine Operative
- Maintenance Technician

UNIT ROUTES 2850-94

Learners are able to claim unit certification should they wish to take units as individual courses.

MAINTENANCE TECHNOLOGY (2850-52/82)

WHO IS THIS COURSE FOR?

This level is ideal for anyone looking to begin their career in engineering, to develop their understanding of engineering skills and principles, or for school leavers with some knowledge or experience in engineering.

This course focuses on the practical skills and underpinning knowledge required to work in maintenance technology, and introduces learners to the basic principles of mathematics, science and technologies that underpin engineering.

MAINTENANCE TECHNOLOGY (2850-52/82)

SUPPORT MATERIALS

In addition to all our standard support, the following units are supported by SmartScreen:

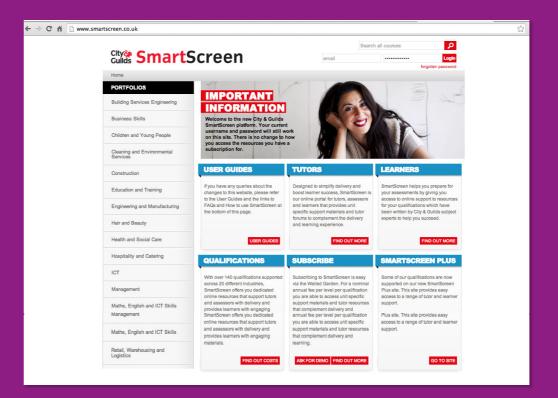
Unit 201 Working in engineering

Unit 202 Principles of engineering technology

Unit 211 Maintaining electrical wiring support systems

Unit 222 Maintaining electrical equipment and systems

Unit 254 Principles of maintenance technology



FABRICATION AND WELDING TECHNOLOGY (2850-53/83)

UNITS

Learners must take two (for the Certificate) or three (for the Diploma) optional units.

Mandatory Units

201 Working in engineering

202 Principles of engineering technology

255 Principles of fabrication and welding technology

Optional Units

213 Welding by manual metal arc process

214 Welding by MIG process

215 Welding by TIG process

216 Welding by oxy-acetylene process

217 Fabricating sheet metalwork

UNITS (CONT'D)

218 Fabricating thick plate, bar and sections

219 Fabricating pipework assemblies

220 Fabricating steelwork assemblies

ASSESSMENTS

Learners are required to successfully complete the following:

 One online multiple-choice assessment for each mandatory unit

 One short-answer question paper for each 'Principles of' specialist unit

One assignment for each chosen optional unit

PROGRESS IN LEARNING

On completion of these courses learners may progress into employment or to the following City & Guilds and ILM courses:

- Level 3 Diploma in Engineering -Welding (2850-85)
- Level 3 Diploma in Engineering Fabrication (2850-86)
- Level 3 Diploma in Engineering -Fabrication and Welding (2850-87)
- Level 3 Diploma in Engineering -Maintenance, Installation and Commissioning (2850-88)
- Level 3 Diploma in Engineering -Mechanical Manufacturing Engineering (2850-89)
- Level 3 Diploma in Engineering -Electrical and Electronic Engineering (2850-90)
- ILM, the Institute of Leadership and Management

PROGRESS TO A JOB

These courses can help learners to progress in a wide range of roles including:

- Electrician
- Welder / Fabricator
- Machine Operative
- Maintenance Technician

UNIT ROUTES 2850-94

Learners are able to claim unit certification should they wish to take units as individual courses.

FABRICATION AND WELDING TECHNOLOGY (2850-53/83)

WHO IS THIS COURSE FOR?

This level is ideal for anyone looking to begin their career in engineering, to develop their understanding of engineering skills and principles, or for school leavers with some knowledge or experience in engineering.

This course focuses on the practical skills and underpinning knowledge required to work in fabrication and welding technology, and introduces learners to the basic principles of mathematics, science and technologies that underpin engineering.

FABRICATION AND WELDING TECHNOLOGY (2850-53/83)

SUPPORT MATERIALS

In addition to all our standard support, the following units are supported by SmartScreen:

Unit 201 Working in engineering

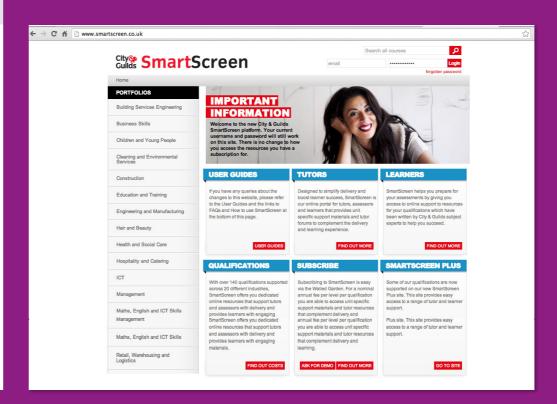
Unit 202 Principles of engineering technology

Unit 213 Welding by Manual Metal Arc process

Unit 214 Welding by MIG process

Unit 215 Welding by TIG process

Unit 255 Principles of fabrication and welding technology



ELECTRICAL AND ELECTRONICS TECHNOLOGY (2850-54/84)

UNITS

Learners must take two (for the Certificate) or three (for the Diploma) optional units.

Mandatory Units

- **201** Working in engineering
- **202** Principles of engineering technology
- 256 Principles of electrical and electronics technology

Optional Units

- 211 Maintaining electrical wiring support systems
- 222 Maintaining electrical equipment and systems
- **223** Wiring and testing electrical circuits
- **224** Constructing, testing and fault finding electronic circuits

ASSESSMENTS

Learners are required to successfully complete the following:

- One online multiple-choice assessment for each mandatory unit
- One short-answer question paper for each 'Principles of' specialist unit
- One assignment for each chosen optional unit

PROGRESS IN LEARNING

On completion of these courses learners may progress into employment or to the following City & Guilds and ILM courses:

- Level 3 Diploma in Engineering -Welding (2850-85)
- Level 3 Diploma in Engineering -Fabrication (2850-86)
- Level 3 Diploma in Engineering -Fabrication and Welding (2850-87)

PROGRESS IN LEARNING (CONT'D)

- Level 3 Diploma in Engineering -Maintenance, Installation and Commissioning (2850-88)
- Level 3 Diploma in Engineering -Mechanical Manufacturing Engineering (2850-89)
- Level 3 Diploma in Engineering -Electrical and Electronic Engineering (2850-90)
- ILM, the Institute of Leadership and Management

PROGRESS TO A JOB (CONT'D)

- Machine Operative
- Maintenance Technician

UNIT ROUTES 2850-94

Learners are able to claim unit certification should they wish to take units as individual courses.

PROGRESS TO A JOB

These courses can help learners to progress in a wide range of roles including:

- Electrician
- Welder / Fabricator

ELECTRICAL AND ELECTRONICS TECHNOLOGY (2850-54/84)

WHO IS THIS COURSE FOR?

This level is ideal for anyone looking to begin their career in engineering, to develop their understanding of engineering skills and principles, or for school leavers with some knowledge or experience in engineering.

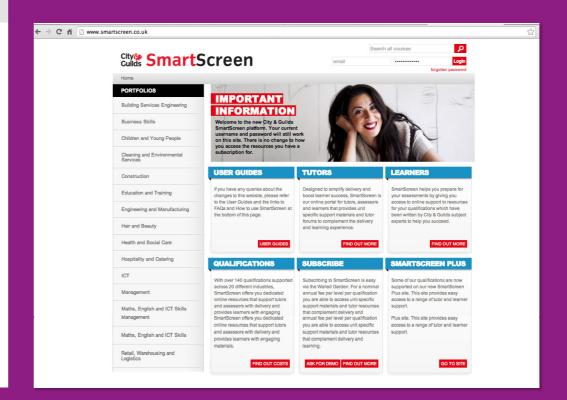
This course focuses on the practical skills and underpinning knowledge required to work in electrical and electronics technology, and introduces learners to the basic principles of mathematics, science and technologies that underpin engineering.

ELECTRICAL AND ELECTRONICS TECHNOLOGY (2850-54/84)

SUPPORT MATERIALS

In addition to all our standard support, the following units are supported by SmartScreen:

| Unit 201 | Working in engineering |
|----------|---|
| Unit 202 | Principles of engineering technology |
| Unit 211 | Maintaining electrical wiring support systems |
| Unit 222 | Maintaining electrical equipment and systems |
| Unit 223 | Wiring and testing electrical circuits |
| Unit 224 | Constructing, testing and fault finding electronic circuits |
| Unit 256 | Principles of electrical and electronics technology |



LEVEL 2: DIPLOMA IN TELECOMMUNICATION

SYSTEMS (2730-12)

UNITS

Mandatory Units

205 Mathematics

206 Fundamentals of electronic communication 1 (practical)

207 Communication systems and digital networks 1 (practical)

208 Constructing, testing and fault finding electronic circuits

Optional Units

203 Fundamentals of electronic communication 1 (paper-based exam)

204 Communication systems and digital networks 1 (paper-based exam)

253 Fundamentals of electronic communication 1 (online exam)

254 Communication systems and digital networks 1 (online exam)

UNITS (CONT'D)

Additional Optional Unit

Constructing, testing and fault finding electronic circuits

ASSESSMENTS

Learners are required to successfully complete the following:

 Two multiple-choice assessments (choice of online or paper-based)

One short-answer question paper

■ Two practical assignments

 One additional practical assignment if choosing additional optional unit

PROGRESS IN LEARNING

On completion of these courses learners may progress into employment or to the following City & Guilds and ILM courses:

- Level 3 Diploma in Telecommunication Systems (2730-13)
- ILM, the Institute of Leadership and Management

UNIT ROUTES 2730-92

Learners are able to claim unit certification should they wish to take units as individual courses.

PROGRESS TO A JOB

These courses can help learners to progress in a wide range of roles including:

- Electrician
- Maintenance Technician
- Technician

LEVEL 2: DIPLOMA IN TELECOMMUNICATION

SYSTEMS (2730-12)

WHO IS THIS COURSE FOR?

This level is ideal for anyone looking to begin their career in telecommunications, to develop their understanding of the skills and principles required for telecommunication engineering, or for school leavers with some existing knowledge or experience.

This course focuses on electronic communication, communication systems and digital networks, introducing learners to the basic principles of mathematics, science and technologies that underpin telecommunication engineering.

| QUICK LINKS | |
|--------------------|--|

LEVEL 2: DIPLOMA IN TELECOMMUNICATION

SYSTEMS (2730-12)

SUPPORT MATERIALS

In addition to all our standard support, the following units are supported by SmartScreen:

Unit 203 / 206 / 253 Fundamentals of electronic communication 1

Unit 204 / 207 / 254 Communication systems and digital networks 1

Unit 205 Mathematics



WELDING (2850-85)

UNITS

Learners must take three optional units.

Mandatory Units

301 Engineering health and safety

302 Engineering principles

353 Principles of welding

Optional Units

- Manual metal arc welding of materials
- **311** MIG welding of materials
- **312** TIG welding of materials
- **330** Organising and managing engineering operations
- **336** MIG welding of aluminium
- **337** TIG welding of aluminium
- **338** Flux-cored arc welding materials
- **351** Advanced mathematics and science

ASSESSMENTS

Learners are required to successfully complete the following:

- One online multiple-choice assessment for each mandatory unit
- One short-answer question paper for each 'Principles of' specialist unit
- One assignment for each chosen optional unit
- One short-answer question paper if choosing the 'Advanced mathematics and science' unit

PROGRESS IN LEARNING

On completion of these courses learners may progress into employment or to the following City & Guilds and ILM courses:

 Level 4 Diploma in Mechanical Engineering

PROGRESS IN LEARNING (CONT'D)

- Level 4 Diploma in Electrical and Electronic Engineering
- Level 4 Diploma in Civil Engineering
- ILM, the Institute of Leadership and Management

UNIT ROUTES 2850-95

Learners are able to claim unit certification should they wish to take units as individual courses.

PROGRESS TO A JOB

These courses can help learners to progress in a wide range of roles including:

- Senior Technician
- Foreman
- Engineer Technician
- Operational Executive

WELDING (2850-85)

WHO IS THIS COURSE FOR?

This level is ideal for learners with a firm understanding and practical experience of engineering technologies and principles, who require formal recognition of their existing abilities or who wish to specialise within a specific engineering sector.

This course focuses on the practical skills and underpinning knowledge required to work in welding at an advanced level, including specific welding procedures and the use of basic calculations and engineering science.

City & Guilds is working with the UK's leading professional institutions to ensure that these courses are aligned with the requirements for Engineer Technician registration.

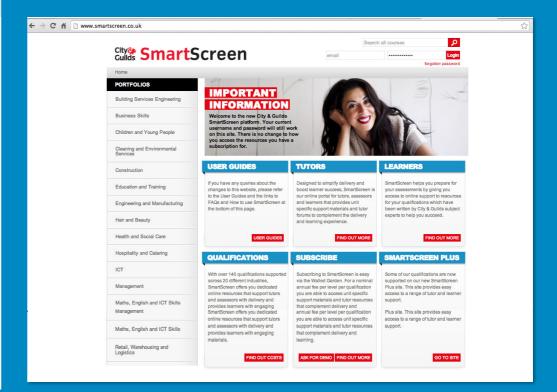
| QUICK | INKS | |
|-------|------|--|

WELDING (2850-85)

SUPPORT MATERIALS

In addition to all our standard support, the following units are supported by SmartScreen:

| Unit 301 | Engineering health and safety |
|----------|--|
| Unit 302 | Engineering principles |
| Unit 311 | MIG welding of materials |
| Unit 312 | TIG welding of materials |
| Unit 324 | Machining materials by milling |
| Unit 330 | Organising and managing engineering operations |
| Unit 351 | Advanced mathematics and science |
| Unit 353 | Principles of welding |



FABRICATION (2850-86)

UNITS

Learners must take three optional units.

Mandatory Units

301 Engineering health and safety

302 Engineering principles

354 Principles of fabrication

Optional Units

- **313** Platework fabrication of materials
- **314** Sheet metalwork fabrication of materials
- **315** Fabrication and erection of structural steelwork
- **316** Pattern development for fabrication
- **330** Organising and managing engineering operations
- **351** Advanced mathematics and science

ASSESSMENTS

Learners are required to successfully complete the following:

- One online multiple-choice assessment for each mandatory unit
- One short-answer question paper for each 'Principles of' specialist unit
- One assignment for each chosen optional unit
- One short-answer question paper if choosing the 'Advanced mathematics and science' unit

PROGRESS IN LEARNING

On completion of these courses learners may progress into employment or to the following City & Guilds and ILM courses:

Level 4 Diploma in Mechanical Engineering

PROGRESS IN LEARNING (CONT'D)

- Level 4 Diploma in Electrical and Electronic Engineering
- Level 4 Diploma in Civil Engineering
- ILM, the Institute of Leadership and Management

UNIT ROUTES 2850-95

Learners are able to claim unit certification should they wish to take units as individual courses.

PROGRESS TO A JOB

These courses can help learners to progress in a wide range of roles including:

- Senior Technician
- Foreman
- Engineer Technician
- Operational Executive

FABRICATION (2850-86)

WHO IS THIS COURSE FOR?

This level is ideal for learners with a firm understanding and practical experience of engineering technologies and principles, who require formal recognition of their existing abilities or who wish to specialise within a specific engineering sector.

This course focuses on the practical skills and underpinning knowledge required to work in fabrication at an advanced level, including specific fabrication procedures and the use of basic calculations and engineering science.

City & Guilds is working with the UK's leading professional institutions to ensure that these courses are aligned with the requirements for Engineer Technician registration.

| OHICKI | INIVC | |
|--------|-------|--|

FABRICATION (2850-86)

SUPPORT MATERIALS

In addition to all our standard support, the following units are supported by SmartScreen:

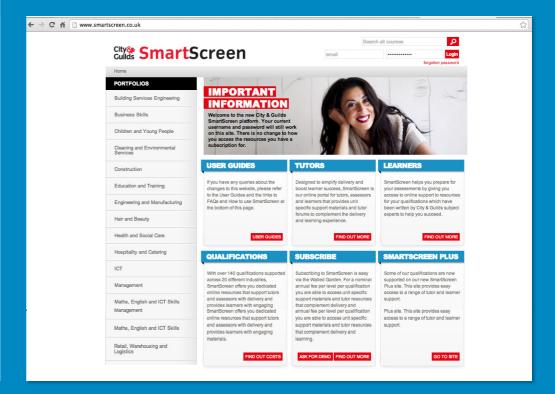
Unit 301 Engineering health and safety

Unit 302 Engineering principles

Unit 330 Organising and managing engineering operations

Unit 351 Advanced mathematics and science

Unit 354 Principles of fabrication



LEVEL 3: DIPLOMA IN FABRICATION

AND WELDING (2850-87)

UNITS

Learners must take three optional units.

Mandatory Units

301 Engineering health and safety

302 Engineering principles

355 Principles of fabrication and welding

Optional Units

- 310 Manual metal arc welding of materials
- **311** MIG welding of materials
- **312** TIG welding of materials
- **313** Platework fabrication of materials
- **314** Sheet metalwork fabrication of materials
- **315** Fabrication and erection of structural steelwork
- **316** Pattern development for fabrication
- Organising and managing engineering operations

UNITS (CONT'D)

336 MIG welding of aluminium

337 TIG welding of aluminium

338 Flux-cored arc welding materials

351 Advanced mathematics and science

ASSESSMENTS

Learners are required to successfully complete the following:

- One online multiple-choice assessment for each mandatory unit
- One short-answer question paper for each 'Principles of' specialist unit
- One assignment for each chosen optional unit
- One short-answer question paper if choosing the 'Advanced mathematics and science' unit

PROGRESS IN LEARNING

On completion of these courses learners may progress into employment or to the following City & Guilds and ILM courses:

- Level 4 Diploma in Mechanical Engineering
- Level 4 Diploma in Electrical and Electronic Engineering
- Level 4 Diploma in Civil Engineering
- ILM, the Institute of Leadership and Management

PROGRESS TO A JOB (CONT'D)

- Foreman
- Engineer Technician
- Operational Executive

UNIT ROUTES 2850-95

Learners are able to claim unit certification should they wish to take units as individual courses.

PROGRESS TO A JOB

These courses can help learners to progress in a wide range of roles including:

Senior Technician

LEVEL 3: DIPLOMA IN FABRICATION

AND WELDING (2850-87)

WHO IS THIS COURSE FOR?

This level is ideal for learners with a firm understanding and practical experience of engineering technologies and principles, who require formal recognition of their existing abilities or who wish to specialise within a specific engineering sector.

This course focuses on the practical skills and underpinning knowledge required to work in fabrication and welding at an advanced level, including specific fabrication and welding procedures and the use of basic calculations and engineering science.

City & Guilds is working with the UK's leading professional institutions to ensure that these courses are aligned with the requirements for Engineer Technician registration.

| OHICK | LINKS | |
|-------|-------|--|

LEVEL 3: DIPLOMA IN FABRICATION

AND WELDING (2850-87)

SUPPORT MATERIALS

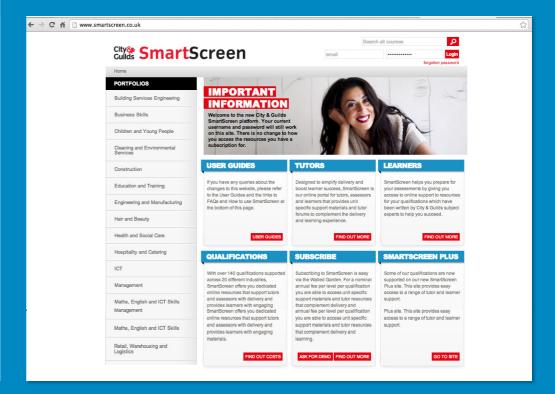
Unit 351

Unit 355

In addition to all our standard support, the following units are supported by SmartScreen:

| Unit 301 | Engineering health and safety |
|----------|--|
| Unit 302 | Engineering principles |
| Unit 311 | MIG welding of materials |
| Unit 312 | TIG welding of materials |
| Unit 330 | Organising and managing engineering operations |
| | |

Advanced mathematics and science Principles of fabrication and welding



LEVEL 3: DIPLOMA IN MAINTENANCE,

INSTALLATION AND COMMISSIONING (2850-88)

UNITS

Learners must take three optional units.

Mandatory Units

| 301 | Engineer | ring health | and safety |
|-----|----------|-------------|------------|
|-----|----------|-------------|------------|

302 Engineering principles

356 Principles of engineering maintenance, installation and commissioning

Optional Units

- 317 Maintenance of machine systems
- 318 Maintenance of utility systems
- **319** Maintenance of plant services
- **320** Maintenance of hydraulic systems
- **321** Maintenance of pneumatic systems
- **322** Power generation systems and ancillary equipment

UNITS (CONT'D)

- Organising and managing engineering operations
- 332 Mechatronics systems principles and fault finding
- **351** Advanced mathematics and science

ASSESSMENTS

Learners are required to successfully complete the following:

- One online multiple-choice assessment for each mandatory unit
- One short-answer question paper for each 'Principles of' specialist unit
- One assignment for each chosen optional unit
- One short-answer question paper if choosing the 'Advanced mathematics and science' unit

PROGRESS IN LEARNING

On completion of these courses learners may progress into employment or to the following City & Guilds and ILM courses:

- Level 4 Diploma in Mechanical Engineering
- Level 4 Diploma in Electrical and Electronic Engineering
- Level 4 Diploma in Civil Engineering
- ILM, the Institute of Leadership and Management

PROGRESS TO A JOB (CONT'D)

- Foreman
- Engineer Technician
- Operational Executive

UNIT ROUTES 2850-95

Learners are able to claim unit certification should they wish to take units as individual courses.

QUICK LINKS

PROGRESS TO A JOB

These courses can help learners to progress in a wide range of roles including:

■ Senior Technician

LEVEL 3: DIPLOMA IN MAINTENANCE,

INSTALLATION AND COMMISSIONING (2850-88)

WHO IS THIS COURSE FOR?

This level is ideal for learners with a firm understanding and practical experience of engineering technologies and principles, who require formal recognition of their existing abilities or who wish to specialise within a specific engineering sector.

This course focuses on the practical skills and underpinning knowledge required to work in maintenance, installation and commissioning at an advanced level, including specific maintenance procedures and the use of basic calculations and engineering science.

City & Guilds is working with the UK's leading professional institutions to ensure that these courses are aligned with the requirements for Engineer Technician registration.

| QUICK LINKS | |
|--------------------|--|

LEVEL 3: DIPLOMA IN MAINTENANCE,

INSTALLATION AND COMMISSIONING (2850-88)

SUPPORT MATERIALS

In addition to all our standard support, the following units are supported by SmartScreen:

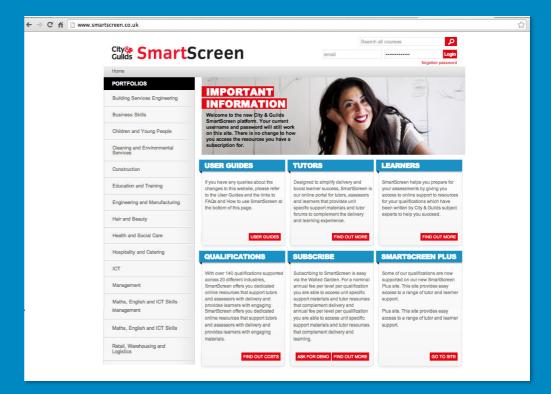
Unit 301 Engineering health and safety

Unit 302 Engineering principles

Unit 330 Organising and managing engineering operations

Unit 351 Advanced mathematics and science

Unit 356 Principles of engineering maintenance, installation and commissioning



LEVEL 3: DIPLOMA IN MECHANICAL MANUFACTURING

AND ENGINEERING (2850-89)

UNITS

Learners must take three optional units.

Mandatory Units

301 Engineering health and safety

302 Engineering principles

357 Principles of mechanical manufacturing engineering

Optional Units

- **323** Machining materials by turning
- **324** Machining materials by milling
- **325** Machining materials by grinding
- **326** CNC machining of materials
- **327** Detailed fitting of materials
- 328 Maintenance of electrical equipment and systems
- **329** Produce drawings using CAD
- Organising and managing engineering operations
- **351** Advanced mathematics and science

ASSESSMENTS

Learners are required to successfully complete the following:

- One online multiple-choice assessment for each mandatory unit
- One short-answer question paper each 'Principles of' specialist unit
- One assignment for each chosen optional unit
- One short-answer question paper if choosing the 'Advanced mathematics and science' unit

PROGRESS IN LEARNING

On completion of these courses learners may progress into employment or to the following City & Guilds and ILM courses:

Level 4 Diploma in Mechanical Engineering

PROGRESS IN LEARNING (CONT'D)

- Level 4 Diploma in Electrical and Electronic Engineering
- Level 4 Diploma in Civil Engineering
- ILM, the Institute of Leadership and Management

UNIT ROUTES 2850-95

Learners are able to claim unit certification should they wish to take units as individual courses.

PROGRESS TO A JOB

These courses can help learners to progress in a wide range of roles including:

- Senior Technician
- Foreman
- Engineer Technician
- Operational Executive

LEVEL 3: DIPLOMA IN MECHANICAL MANUFACTURING

AND ENGINEERING (2850-89)

WHO IS THIS COURSE FOR?

This level is ideal for learners with a firm understanding and practical experience of engineering technologies and principles, who require formal recognition of their existing abilities or who wish to specialise within a specific engineering sector.

This course focuses on the practical skills and underpinning knowledge required to work in mechanical manufacturing and engineering at an advanced level, including specific manufacturing procedures and the use of basic calculations and engineering science.

City & Guilds is working with the UK's leading professional institutions to ensure that these courses are aligned with the requirements for Engineer Technician registration.

| QUICK | LINKS | |
|-------|-------|--|

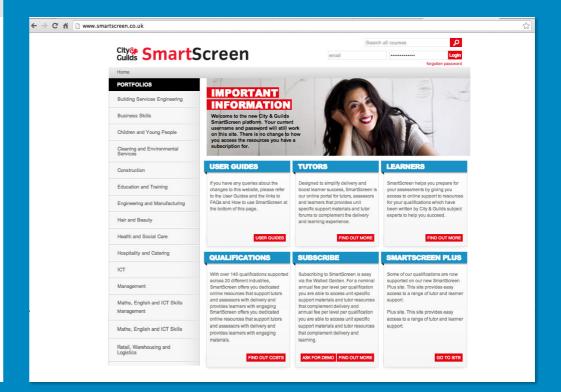
LEVEL 3: DIPLOMA IN MECHANICAL MANUFACTURING

AND ENGINEERING (2850-89)

SUPPORT MATERIALS

In addition to all our standard support, the following units are supported by SmartScreen:

| supported by | Siliartscreen. |
|-----------------|--|
| Unit 301 | Engineering health and safety |
| Unit 302 | Engineering principles |
| Unit 324 | Machining materials by milling |
| Unit 325 | Machining materials by grinding |
| Unit 326 | CNC machining of materials |
| Unit 327 | Detailed fitting of materials |
| Unit 330 | Organising and managing engineering operations |
| Unit 351 | Advanced mathematics and science |
| Unit 357 | Principles of mechanical manufacturing engineering |



LEVEL 3: DIPLOMA IN ELECTRICAL AND ELECTRONICS

TECHNOLOGY (2850-90)

UNITS

Learners must take three optional units.

Mandatory Units

- **301** Engineering health and safety
- **302** Engineering principles
- **358** Principles of electrical and electronic engineering

Optional Units

- 328 Maintenance of electrical equipment and systems
- 330 Organising and managing engineering operations
- 332 Mechatronics systems principles and fault finding
- 333 Computer automated and robotic systems principles and control
- Power supply, and analogue and digital circuit principles and fault
- **335** Electronic power control principles and practice
- **351** Advanced mathematics and science

ASSESSMENTS

Learners are required to successfully complete the following:

- One online multiple-choice assessment for each mandatory unit
- One short-answer question paper each 'Principles of' specialist unit
- One assignment for each chosen optional unit
- One short-answer question paper if choosing the 'Advanced mathematics and science' unit

PROGRESS IN LEARNING

On completion of these courses learners may progress into employment or to the following City & Guilds and ILM courses:

Level 4 Diploma in Mechanical Engineering

PROGRESS IN LEARNING (CONT'D)

- Level 4 Diploma in Electrical and Electronic Engineering
- Level 4 Diploma in Civil Engineering
- ILM, the Institute of Leadership and Management

PROGRESS TO A JOB

These courses can help learners to progress in a wide range of roles including:

- Senior Technician
- Foreman
- Engineer Technician
- Operational Executive

UNIT ROUTES 2850-95

Learners are able to claim unit certification should they wish to take units as individual courses.

LEVEL 3: DIPLOMA IN ELECTRICAL AND ELECTRONICS

TECHNOLOGY (2850-90)

WHO IS THIS COURSE FOR?

This level is ideal for learners with a firm understanding and practical experience of engineering technologies and principles, who require formal recognition of their existing abilities or who wish to specialise within a specific engineering sector.

This course focuses on the practical skills and underpinning knowledge required to work in electrical and electronic engineering at an advanced level, including electrical and electronic procedures and the use of basic calculations and engineering science.

City & Guilds is working with the UK's leading professional institutions to ensure that these courses are aligned with the requirements for Engineer Technician registration.

| QUICK I | INKS | |
|----------------|------|--|

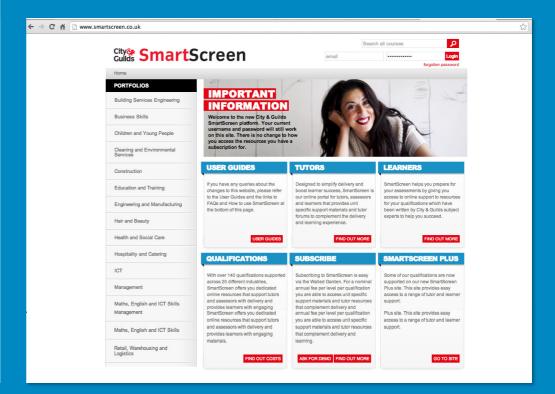
LEVEL 3: DIPLOMA IN ELECTRICAL AND ELECTRONICS

TECHNOLOGY (2850-90)

SUPPORT MATERIALS

In addition to all our standard support, the following units are supported by SmartScreen:

| 00.10100.000.007 | |
|------------------|---|
| Unit 301 | Engineering health and safety |
| Unit 302 | Engineering principles |
| Unit 330 | Organising and managing engineering operations |
| Unit 334 | Power supply, and analogue and digital circuit principles and fault finding |
| Unit 335 | Electronic power control principles and practice |
| Unit 351 | Advanced mathematics and science |
| Unit 358 | Principles of electrical and electronic engineering |



LEVEL 3: DIPLOMA IN TELECOMMUNICATION

SYSTEMS (2730-13)

UNITS

Learners must either choose radio systems or both programming principles units.

Mandatory Units

- **301** Fundamentals of electronic communication 2
- 302 Communication systems and digital networks 2
- **303** Fundamentals of electronic communication 3
- 304 Communication systems and digital networks 3
- **307** Advanced mathematics
- **352** Communication systems and digital networks 2 practical
- **354** Communication systems and digital networks 3 practical

Optional Units

- **305** Radio systems
- **306** Programming principles

UNITS (CONT'D)

356 Programming principles (practical)

Additional Optional Unit

308 Maintenance of electrical equipment and systems

ASSESSMENTS

Learners are required to successfully complete the following:

- Six short-answer question papers.
- Two or three practical assignments
- One additional practical assignment if choosing additional optional unit

PROGRESS IN LEARNING

On completion of these courses learners may progress into employment or to the following City & Guilds and ILM courses:

- Level 4 Diploma in Mechanical Engineering
- Level 4 Diploma in Electrical and Electronic Engineering
- Level 4 Diploma in Civil Engineering
- ILM, the Institute of Leadership and Management

PROGRESS TO A JOB

- Electrician
- Maintenance Technician
- Technician
- Systems Executive

UNIT ROUTES 2730-93

Learners are able to claim unit certification should they wish to take units as individual courses.

PROGRESS TO A JOB

These courses can help learners to progress in a wide range of roles including:

LEVEL 3: DIPLOMA IN TELECOMMUNICATION

SYSTEMS (2730-13)

WHO IS THIS COURSE FOR?

This level is ideal for learners with a firm understanding and practical experience of telecommunication systems and principles, who require formal recognition of their existing abilities or who wish to advance their skills and knowledge in telecommunication engineering.

This course focuses on the practical skills and underpinning knowledge required to work in telecommunications at an advanced level, including communication systems and digital networks, radio systems and programming, and the use of basic calculations and telecommunication science.

| QUICK I | INKS | |
|---------|------|--|

LEVEL 3: DIPLOMA IN TELECOMMUNICATION

SYSTEMS (2730-13)

SUPPORT MATERIALS

In addition to all our standard support, the following units are supported by SmartScreen:

Unit 301 Fundamentals of Electronic Communication 2

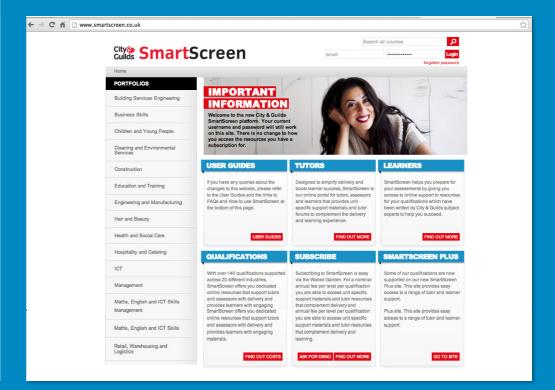
Unit 302/352 Communication Systems and Digital Networks 2

Unit 303 Fundamentals of Electronic Communication 3

Unit 304/354 Communication Systems and Digital Networks 3

Unit 305 Radio Systems

Unit 306/356 Programming principles



LEVEL 4: DIPLOMAS IN MECHANICAL, ELECTRICAL AND

ELECTRONIC AND CIVIL ENGINEERING

COMING SOON

City & Guilds will be launching Level 4 courses in Mechanical, Electrical and Electronic and Civil Engineering in 2014.

These courses will provide learners with the knowledge and high level technical skills required to advance their career in the Engineering industry, and will come with online teaching and learning materials, as well as guidance for delivering the qualification assessments.

We are currently developing these courses in consultation with a number of international centres, as well as UK universities, to ensure that the courses meet both employer and academic requirements. Further information about these courses will be available soon.

LEVEL 5: DIPLOMAS IN MECHANICAL, ELECTRICAL AND

ELECTRONIC AND CIVIL ENGINEERING

COMING SOON

City & Guilds will be launching Level 5 courses in Mechanical, Electrical and Electronic and Civil Engineering in 2014.

These courses will provide learners with the knowledge and high level technical skills required to advance their career in the Engineering industry, and will come with online teaching and learning materials, as well as guidance for delivering the qualification assessments.

We are currently developing these courses in consultation with a number of international centres, as well as UK universities, to ensure that the courses meet both employer and academic requirements. Further information about these courses will be available soon.

LEVEL 5: DIPLOMA IN TELECOMMUNICATION

SYSTEMS (2730-03)

UNITS

Learners must either choose both radio systems units or both software engineering units.

Mandatory Units

Telecommunications project 021 Advanced telecommunication 022 systems

Optional Units

023

Advanced radio systems Advanced radio systems 024 (practical) Software engineering 025 Software engineering 026 (practical)

Additional Optional Unit

Advanced mathematics 2

ASSESSMENTS

Learners are required to successfully complete the following:

- Two short answer question papers
- One additional short answer question paper if choosing additional optional unit

PROGRESS IN LEARNING

On completion of these courses learners may progress into employment or to the following City & Guilds and ILM courses:

- Level 6 Graduate Diploma in Electronic and Telecommunication Engineering
- Relevant higher level courses
- ILM, the Institute of Leadership and Management

PROGRESS TO A JOB

These courses can help learners to progress in a wide range of roles including:

- Senior Electrician
- Senior Systems Executive
- Telecommunications Network Manager
- Network Planner
- Radio Systems Design Engineer
- Satellite Communications Engineer

LEVEL 5: DIPLOMA IN TELECOMMUNICATION

SYSTEMS (2730-03)

WHO IS THIS COURSE FOR?

This level is ideal for learners preparing for, or working in, first-level management, with a sound knowledge of technical principles in one or more specialised branches of telecommunications. It is also appropriate for someone who wishes to receive specialised training at a high level.

This course focuses on advanced telecommunication systems, specialising in either advanced radio systems or software engineering. Learners will have the potential to fulfil the role of senior technician with a high level of responsibility requiring the use of personal initiative and critical judgement.

| QUICK LINKS | |
|--------------------|--|

LEVEL 6: GRADUATE DIPLOMA IN CIVIL

ENGINEERING (9210-01)

UNITS

Learners must take four optional units.

Mandatory Units

100 Engineering mathematics

101 Management for engineers

139 Project 1

Pathway Mandatory Units

102 Mechanics of solids and basic structural analysis

103 Hydraulics and hydrology

104 Engineering surveying

105 Soil mechanics and engineering geology

Optional Units

106 Building engineering

107 Quantity surveying

108 Highway engineering

109 Irrigation engineering

UNITS (CONT'D)

110 Water and waste engineering

111 Structural analysis

ASSESSMENTS

Learners are required to successfully complete the following:

One short-answer question paper for each unit

 A practical assessment for required units (for more information please refer to the handbook)

PROGRESS IN LEARNING

On completion of these courses learners may progress into employment or to the following City & Guilds and ILM courses:

- Level 7 Post Graduate Diploma in Engineering
- Relevant higher level courses
- ILM, the Institute of Leadership and Management

PROGRESS TO A JOB

These courses can help learners to progress towards:

■ Becoming an incorporated engineer

LEVEL 6: GRADUATE DIPLOMA IN CIVIL

ENGINEERING (9210-01)

WHO IS THIS COURSE FOR?

This level is ideal for learners preparing for, or working in, management, with a sound knowledge of technical principles in one or more specialised branches of engineering. The Level 6 Graduate Diplomas in Engineering are set at, and an alternative to, the standard of the final (third) year of a British BEng (Honours) degree course.

The City & Guilds Graduate Diplomas in Engineering have been developed to provide a flexible route to career success as a professional engineer. City & Guilds is working with the UK's leading professional institutions to ensure that these courses are aligned with the requirements for Incorporated Engineer registration.

LEVEL 6: GRADUATE DIPLOMA IN MECHANICAL

ENGINEERING (9210-01)

UNITS

Learners must take four optional units.

MandatOry Units

100 Engineering mathematics

101 Management for engineers

139 Project 1

Pathway Mandatory Units

128 Applied thermodynamics

129 Fluid mechanics

130 Mechanics of machines and strength of materials

131 Materials

Optional Units

132 Manufacturing technology

133 Analysis and design of manufacturing technology

134 Hydraulics and hydraulic machines

UNITS (CONT'D)

135 Mechanics of solids

136 Control systems

137 Electro techniques

138 Quality and reliability engineering

ASSESSMENTS

Learners are required to successfully complete the following:

One short-answer question paper for each unit

 A practical assessment for required units (for more information please refer to the handbook)

PROGRESS IN LEARNING

On completion of these courses learners may progress into employment or to the following City & Guilds and ILM courses:

- Level 7 Post Graduate Diploma in Engineering
- Relevant higher level courses
- ILM, the Institute of Leadership and Management

PROGRESS TO A JOB

These courses can help learners to progress towards:

■ Becoming an incorporated engineer

LEVEL 6: GRADUATE DIPLOMA IN MECHANICAL

ENGINEERING (9210-01)

WHO IS THIS COURSE FOR?

This level is ideal for learners preparing for, or working in, management, with a sound knowledge of technical principles in one or more specialised branches of engineering. The Level 6 Graduate Diplomas in Engineering are set at, and an alternative to, the standard of the final (third) year of a British BEng (Honours) degree course.

The City & Guilds Graduate Diplomas in Engineering have been developed to provide a flexible route to career success as a professional engineer. City & Guilds is working with the UK's leading professional institutions to ensure that these courses are aligned with the requirements for Incorporated Engineer registration.

LEVEL 6: GRADUATE DIPLOMA IN ELECTRICAL

ENGINEERING (9210-01)

UNITS

Learners must take four optional units.

Mandatory Units

100 Engineering mathematics

101 Management for engineers

139 Project 1

Pathway Mandatory Units

112 Circuits and waves

114 Electrical energy system

115 Electrical machines and drives

116 Electronics and telecommunications

Optional Units

118 Communication systems

121 Computer networks

123 Computer architecture and operating systems

UNITS (CONT'D)

124 Database management

127 Software engineering

136 Control systems

ASSESSMENTS

Learners are required to successfully complete the following:

One short-answer question paper for each unit

 A practical assessment for required units (for more information please refer to the handbook)

PROGRESS IN LEARNING

On completion of these courses learners may progress into employment or to the following City & Guilds and ILM courses:

- Level 7 Post Graduate Diploma in Engineering
- Relevant higher level courses
- ILM, the Institute of Leadership and Management

PROGRESS TO A JOB

These courses can help learners to progress towards:

■ Becoming an incorporated engineer

LEVEL 6: GRADUATE DIPLOMA IN ELECTRICAL

ENGINEERING (9210-01)

WHO IS THIS COURSE FOR?

This level is ideal for learners preparing for, or working in, management, with a sound knowledge of technical principles in one or more specialised branches of engineering. The Level 6 Graduate Diplomas in Engineering are set at, and an alternative to, the standard of the final (third) year of a British BEng (Honours) degree course.

The City & Guilds Graduate Diplomas in Engineering have been developed to provide a flexible route to career success as a professional engineer. City & Guilds is working with the UK's leading professional institutions to ensure that these courses are aligned with the requirements for Incorporated Engineer registration.

LEVEL 6: GRADUATE DIPLOMA IN ELECTRONIC AND

TELECOMMUNICATION ENGINEERING (9210-01)

UNITS

Learners must take four optional units.

Mandatory Units

100 Engineering mathematics

101 Management for engineers

139 Project 1

Pathway Mandatory Units

112 Circuits and waves

113 Electrical machines and electrical energy system fundamentals

117 Electronic systems

118 Communication systems

Optional Units

119 Wireless and mobile communication

121 Computer networks

123 Computer architecture and operating systems

UNITS (CONT'D)

125 Signals and systems

127 Software engineering

136 Control systems

ASSESSMENTS

Learners are required to successfully complete the following:

 One short-answer question paper for each unit

 A practical assessment for required units (for more information please refer to the handbook)

PROGRESS IN LEARNING

On completion of these courses learners may progress into employment or to the following City & Guilds and ILM courses:

- Level 7 Post Graduate Diploma in Engineering
- Relevant higher level courses
- ILM, the Institute of Leadership and Management

PROGRESS TO A JOB

These courses can help learners to progress towards:

■ Becoming an incorporated engineer

LEVEL 6: GRADUATE DIPLOMA IN ELECTRONIC AND

TELECOMMUNICATION ENGINEERING (9210-01)

WHO IS THIS COURSE FOR?

This level is ideal for learners preparing for, or working in, management, with a sound knowledge of technical principles in one or more specialised branches of engineering. The Level 6 Graduate Diplomas in Engineering are set at, and an alternative to, the standard of the final (third) year of a British BEng (Honours) degree course.

The City & Guilds Graduate Diplomas in Engineering have been developed to provide a flexible route to career success as a professional engineer. City & Guilds is working with the UK's leading professional institutions to ensure that these courses are aligned with the requirements for Incorporated Engineer registration.

LEVEL 7: POST GRADUATE DIPLOMA IN CIVIL

ENGINEERING (9210-02)

UNITS

Learners must take three optional units.

Mandatory Units

200 Engineering analysis

229 Project 2

Pathway Mandatory Units

201 Construction engineering and management

202 Environmental engineering

203 Computational mechanics using finite element method

Optional Units

204 Geotechnical engineering

205 Built environment 1

206 Structural design

207 Fluid mechanics and coastal engineering

UNITS (CONT'D)

208 Built environment 2

111 Structural analysis

138 Quality and reliability engineering

PROGRESS IN LEARNING

On completion of these courses learners may progress into employment or to the following City & Guilds courses:

■ Relevant higher level courses

PROGRESS TO A JOB

These courses can help learners to progress towards:

■ Becoming a chartered engineer

ASSESSMENTS

Learners are required to successfully complete the following:

- One short-answer question paper for each unit
- A practical assessment for required units (for more information please refer to the handbook)

LEVEL 7: POST GRADUATE DIPLOMA IN CIVIL

ENGINEERING (9210-02)

WHO IS THIS COURSE FOR?

This level is ideal for learners preparing for, or working in, management, with a sound knowledge of technical principles in one or more specialised branches of engineering. The Level 7 Post Graduate Diplomas in Engineering are set at, and an alternative to, the standard of the final (fourth) year of a British BEng degree course.

The City & Guilds Post Graduate Diplomas in Engineering have been developed to provide a flexible route to career success as a professional engineer. City & Guilds is working with the UK's leading professional institutions to ensure that these courses are aligned with the requirements for Chartered Engineer registration.

| CHICK I | INKC | |
|----------------|------|--|

LEVEL 7: POST GRADUATE DIPLOMA IN

ELECTRICAL ENGINEERING (9210-02)

UNITS

Learners must take three optional units.

Mandatory Units

200 Engineering analysis

229 Project 2

Pathway Mandatory Units

209 Power system economics and planning

210 High voltage engineering

211 Fields and network theory

Optional Units

213 Digital system design

215 Modern control systems

217 Power electronics

218 Internet technologies

219 Computer system engineering

ASSESSMENTS

Learners are required to successfully complete the following:

- One short-answer question paper for each unit
- A practical assessment for required units (for more information please refer to the handbook)

PROGRESS IN LEARNING

On completion of these courses learners may progress into employment or to the following City & Guilds courses:

■ Relevant higher level courses

PROGRESS TO A JOB

These courses can help learners to progress towards:

■ Becoming a chartered engineer

QUICK LINKS

LEVEL 7: POST GRADUATE DIPLOMA IN

ELECTRICAL ENGINEERING (9210-02)

WHO IS THIS COURSE FOR?

This level is ideal for learners preparing for, or working in, management, with a sound knowledge of technical principles in one or more specialised branches of engineering. The Level 7 Post Graduate Diplomas in Engineering are set at, and an alternative to, the standard of the final (fourth) year of a British BEng degree course.

The City & Guilds Post Graduate Diplomas in Engineering have been developed to provide a flexible route to career success as a professional engineer. City & Guilds is working with the UK's leading professional institutions to ensure that these courses are aligned with the requirements for Chartered Engineer registration.

| MICK LINK | | |
|-----------|--|--|

LEVEL 7: POST GRADUATE DIPLOMA IN ELECTRONIC

AND TELECOMMUNICATION ENGINEERING (9210-02)

UNITS

Learners must take three optional units.

Mandatory Units

200 Engineering analysis

229 Project 2

Pathway Mandatory Units

212 Data communication

213 Digital system design

214 Telecommunication systems engineering

Optional Units

215 Modern control systems

216 RF and microwave engineering

217 Power electronics

218 Internet technologies

219 Computer system engineering

ASSESSMENTS

Learners are required to successfully complete the following:

- One short-answer question paper for each unit
- A practical assessment for required units (for more information please refer to the handbook)

PROGRESS IN LEARNING

On completion of these courses learners may progress into employment or to the following City & Guilds courses:

■ Relevant higher level courses

PROGRESS TO A JOB

These courses can help learners to progress towards:

■ Becoming a chartered engineer

QUICK LINKS

LEVEL 7: POST GRADUATE DIPLOMA IN ELECTRONIC

AND TELECOMMUNICATION ENGINEERING (9210-02)

WHO IS THIS COURSE FOR?

This level is ideal for learners preparing for, or working in, management, with a sound knowledge of technical principles in one or more specialised branches of engineering. The Level 7 Post Graduate Diplomas in Engineering are set at, and an alternative to, the standard of the final (fourth) year of a British BEng degree course.

The City & Guilds Post Graduate Diplomas in Engineering have been developed to provide a flexible route to career success as a professional engineer. City & Guilds is working with the UK's leading professional institutions to ensure that these courses are aligned with the requirements for Chartered Engineer registration.

| OHICK I | INKC | |
|---------|------|--|

LEVEL 7: POST GRADUATE DIPLOMA IN MECHANICAL

ENGINEERING (9210-02)

UNITS

Learners must take three optional units.

Mandatory Units

200 Engineering analysis

229 Project 2

Pathway Mandatory Units

220 Computational mechanics using FEM

221 Heat and mass transfer

Mechanical engineering design

Optional Units

223 Mechatronics

224 Dynamics of mechanical systems

225 Advanced manufacturing technology

226 Design and operation of marine vehicles

UNITS (CONT'D)

227 Automobile engineering

228 Aerospace engineering

PROGRESS IN LEARNING

On completion of these courses learners may progress into employment or to the following City & Guilds courses:

■ Relevant higher level courses

PROGRESS TO A JOB

These courses can help learners to progress towards:

■ Becoming a chartered engineer

ASSESSMENTS

Learners are required to successfully complete the following:

- One short-answer question paper for each unit
- A practical assessment for required units (for more information please refer to the handbook)

QUICK LINKS

LEVEL 7: POST GRADUATE DIPLOMA IN MECHANICAL

ENGINEERING (9210-02)

WHO IS THIS COURSE FOR?

This level is ideal for learners preparing for, or working in, management, with a sound knowledge of technical principles in one or more specialised branches of engineering. The Level 7 Post Graduate Diplomas in Engineering are set at, and an alternative to, the standard of the final (fourth) year of a British BEng degree course.

The City & Guilds Post Graduate Diplomas in Engineering have been developed to provide a flexible route to career success as a professional engineer. City & Guilds is working with the UK's leading professional institutions to ensure that these courses are aligned with the requirements for Chartered Engineer registration.



CUSTOMER SERVICE

At City & Guilds, we take care to ensure that all enquiries and complaints are handled promptly and courteously. Our Customer Relations team is on hand from Monday to Friday between 8am and 6pm GMT, and they'll always seek to resolve any issue immediately.

If that isn't possible, you'll be given a Service Request ID and can expect a resolution within five working days.

We'll always respond to emails, letters and faxes within three working days of receipt, unless you have a complaint, in which case we'll contact you within two working days.

What's more, if we're unable to resolve your complaint within eight days, you'll be given an action plan to monitor progress and keep you informed.

We'll also ask for feedback on how your complaint was handled – just to make sure you're completely satisfied.



CONTACT LIST



EUROPE

London – Head Office

1 Giltspur Street London, EC1A 9DD

T: +44 (0)84 4543 0000

F: +44(0)20 7294 2413

Scotland

4th Floor

144 West George Street

Glasgow, G2 2HG

T: +44 (0) 14 1341 5700

F: +44 (0) 14 1341 5725

E: scotland@cityandguilds.com

Ireland

Beaux Lane House Mercer Street Lower Dublin 2, Ireland

T: +353 (0)1 405 2020

F: +353 (0)1 405 2021

E: ireland@cityandguilds.com

Europe

E: europe@cityandguilds.com

AFRICA

Botswana

Kgale Terrace, Plot 135, Unit 10
Gaborone International Finance Park
(Next to Game City Mall)
Gaborone, Botswana
T: +267-71320644

E: cassiusmmopelwa@ymail.com

East Africa

4th Floor IPS Building Kimathi Street Nairobi, Kenya

T: +254 20 223 992

T: +254 20 317 012

E: sales@city-and-guilds-intl.org

Malawi and Zambia

Andrew Chimpololo P. O. Box 1822 Blantyre

T: +265 1 664 312

M: +265 999 921 567

E: andrew.chimpololo@cityandguilds.com

Southern Africa

City & Guilds Regional Office Isle of Houghton, 1 Harrow Court Cnr Boundary & Carse O'Gowrie Drive Parktown, 2192, South Africa

T: +27 11 544 4660

F: +27 11 484 5469

E: info@cityandguilds.co.za

Ghana and The Gambia

Akus House, 2nd Floor, No. 4 Mensah Sarbah Road Kokomlemle, Accra, Ghana **T**: +233 (0) 302 255 472

M: +233 (0) 577 651 100

E: info.west-africa@cityandguilds.com

Nigeria

God's Legacy Plaza, Block D, Plot 345 Odusanmi Street, Off Wepmco Road, Ogba, Lagos, Nigeria

T: +234 (0)1-2957357

T: +234 (0)8178652777

E: adesola.eghagha@cityandguilds.com

E: temitope.adesoro@cityandguilds.com

EAST ASIA AND PACIFIC

Hong Kong

City & Guilds Hong Kong Office, Unit 2005C & 2006A, 20/F Exchange Tower, 33 Wang Chiu Road Kowloon Bay, Kowloon, Hong Kong

T: +852 28325833 **F:** +852 28329961

E: info@cityandguilds.com.hk

W: www.cityandguilds.com.hk

China

City & Guilds, Unit 1206 Harbour Ring Plaza 18 Xizang Road (M) Shanghai 200001

E: info@city-and-guilds.com.cn W: www.city-and-guilds.com.cn

Malaysia

City & Guilds (Malaysia) Sdn Bhd Lot 3.03 Level 3 Bangunan TH Uptown 3 No. 3 Jalan SS21/39 Damansara Utama 47400 Petaling Jaya Selangor Darul Ehsan, Malaysia

T: +60 37665 8305

F: +60 37665 8306

E: enquiry@cityandguilds.com.my

New Zealand

Suite 109, Level One, 21 Browning Street Napier 4110, New Zealand **T:** +64 (0)6 280 5291

E: pacific@cityandguilds.com

MIDDLE EAST

Middle East

Dubai Knowledge Village
Office F5, Block 12
Dubai , United Arab Emirates
The Dubai office is open
Sunday-Thursday

T: +971 (0) 4 437 7580

F: +971 (0) 4 437 7579

E: gulf@cityandguilds.com

SOUTH ASIA

South Asia

City & Guilds Level 6, Access Tower 278 Union Place Colombo-02 Sri Lanka

T: +94 11 5361 427/8

F: +94 11 2314 941

E: info@cityandguilds.lk

INDIA

Bangalore

Manipal City & Guilds Pvt Ltd Kirusha Building, #117, 27th Main, 2nd Sector, HSR Layout, next to NIFT Bangalore - 560034

T: +91-80-22582683 - 89 Ext-132

F: +91-80-22582692

E: enquiry@manipalcityandguilds.com

W: www.manipalcityandguilds.com

JAMAICA, TRINIDAD AND TOBAGO

We have two City & Guilds representatives for the Caribbean based in Trinidad and Jamaica.

Trinidad and Tobago

Sue Carlton

E: Sue.Carlton@cityandguilds.com

Jamaica

Marva Duncanson
City & Guilds Representative Office
6 Hope Road (entrance on
Suthermere Road, Half-Way-Tree)
Kingston 10, Jamaica

T: +1 876 906 7630

F: +1 876 754 7873

E: jamaica@cityandguilds.com

EUROPE

London – Head Office

1 Giltspur Street London, EC1A 9DD

T: +44 (0)84 4543 0000

F: +44(0)20 7294 2413

Scotland

4th Floor

144 West George Street

Glasgow, G2 2HG

T: +44 (0) 14 1341 5700

F: +44 (0) 14 1341 5725

E: scotland@cityandguilds.com

Ireland

Beaux Lane House Mercer Street Lower Dublin 2, Ireland

T: +353 (0)1 405 2020

F: +353 (0)1 405 2021

E: ireland@cityandguilds.com

Europe

E: europe@cityandguilds.com

AFRICA

Botswana

Kgale Terrace, Plot 135, Unit 10
Gaborone International Finance Park
(Next to Game City Mall)
Gaborone, Botswana
T: +267-71320644

E: cassiusmmopelwa@ymail.com

East Africa

4th Floor IPS Building Kimathi Street Nairobi, Kenya

T: +254 20 223 992

T: +254 20 317 012

E: sales@city-and-guilds-intl.org

Malawi and Zambia

Andrew Chimpololo P. O. Box 1822 Blantyre

T: +265 1 664 312

M: +265 999 921 567

E: andrew.chimpololo@cityandguilds.com

Southern Africa

City & Guilds Regional Office Isle of Houghton, 1 Harrow Court Cnr Boundary & Carse O'Gowrie Drive Parktown, 2192, South Africa

T: +27 11 544 4660

F: +27 11 484 5469

E: info@cityandguilds.co.za

Ghana and The Gambia

Akus House, 2nd Floor, No. 4 Mensah Sarbah Road Kokomlemle, Accra, Ghana **T**: +233 (0) 302 255 472

M: +233 (0) 577 651 100

E: info.west-africa@cityandguilds.com

Nigeria

God's Legacy Plaza, Block D, Plot 345 Odusanmi Street, Off Wepmco Road, Ogba, Lagos, Nigeria

T: +234 (0)1-2957357

T: +234 (0)8178652777

E: adesola.eghagha@cityandguilds.com

E: temitope.adesoro@cityandguilds.com

EAST ASIA AND PACIFIC

Hong Kong

City & Guilds Hong Kong Office, Unit 2005C & 2006A, 20/F Exchange Tower, 33 Wang Chiu Road Kowloon Bay, Kowloon, Hong Kong

T: +852 28325833 **F:** +852 28329961

E: info@cityandguilds.com.hk

W: www.cityandguilds.com.hk

China

City & Guilds, Unit 1206
Harbour Ring Plaza
18 Xizang Road (M)
Shanghai 200001

E: info@city-and-guilds.com.cn **W:** www.city-and-guilds.com.cn

Malaysia

City & Guilds (Malaysia) Sdn Bhd Lot 3.03 Level 3 Bangunan TH Uptown 3 No. 3 Jalan SS21/39 Damansara Utama 47400 Petaling Jaya Selangor Darul Ehsan, Malaysia

T: +60 37665 8305

F: +60 37665 8306

E: enquiry@cityandguilds.com.my

New Zealand

Suite 109, Level One, 21 Browning Street Napier 4110, New Zealand

T: +64 (0)6 280 5291

E: pacific@cityandguilds.com

MIDDLE EAST

Middle East

Dubai Knowledge Village
Office F5, Block 12
Dubai , United Arab Emirates
The Dubai office is open
Sunday-Thursday

T: +971 (0) 4 437 7580

F: +971 (0) 4 437 7579

E: gulf@cityandguilds.com

SOUTH ASIA

South Asia

City & Guilds Level 6, Access Tower 278 Union Place Colombo-02 Sri Lanka

T: +94 11 5361 427/8

F: +94 11 2314 941

E: info@cityandguilds.lk

INDIA

Bangalore

Manipal City & Guilds Pvt Ltd Kirusha Building, #117, 27th Main, 2nd Sector, HSR Layout, next to NIFT Bangalore - 560034

T: +91-80-22582683 - 89 Ext-132

F: +91-80-22582692

E: enquiry@manipalcityandguilds.com

W: www.manipalcityandguilds.com

JAMAICA, TRINIDAD AND TOBAGO

We have two City & Guilds representatives for the Caribbean based in Trinidad and Jamaica.

Trinidad and Tobago

Sue Carlton

E: Sue.Carlton@cityandguilds.com

Jamaica

Marva Duncanson
City & Guilds Representative Office
6 Hope Road (entrance on
Suthermere Road, Half-Way-Tree)
Kingston 10, Jamaica

T: +1 876 906 7630

F: +1 876 754 7873

E: jamaica@cityandguilds.com