



**NEW**

**TECHNICAL QUALIFICATIONS**

**IN BSE**

**NOVEMBER 2016**

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# CHALLENGES AND OPPORTUNITIES

## IN CONSTRUCTION

Planned Government investment of **£379 - £466 billion** by **2030** through the National Infrastructure Plan 2013.

Employment expected to grow over next 5 yrs from **2.48 to 2.75 million**

Annual increase in construction output of **2.9%** and employment growth **1.4% (224,000+)** over the next **5 yrs.**

Apprenticeship numbers have dropped from 20,000 to 13,000

**EMPLOYMENT  
TO GROW TO  
2.75 MILLION  
IN NEXT 5  
YEARS**

# MEETING THE CHALLENGE WITH THE CITY & GUILDS TECHBAC

TechBac is a unique combination of:

## TECHNICAL SKILLS



## WORKPLACE SKILLS

New employer recognised City & Guilds Technical Qualifications;

- Designed to meet the latest education reforms
- Relevant to industry needs
- Rigorous, high quality practical learning with outcomes in mind
- Supporting progress to Further Education, University or employment

City & Guilds Workplace Skills is a blended approach to developing transferable and social skills;

- Develop, accredit and showcase workplace skills, to enrich learners' CVs
- Help learners to feel confident and ready for work
- Track learner engagement and progress to optimise performance
- Aligned to changes in policy and digital delivery
- Support to embed in delivery

To create, recognise and award these attributes and behaviours, we have developed the **Skills Zone**, our gateway to Workplace Skills.

**ROUNDED INDIVIDUAL WHO IS:**

**CONFIDENT, TALENTED, MOTIVATED AND READY TO WORK**

# THE TECHBAC EXPERIENCE

## A HOLISTIC PROGRAMME DESIGNED FOR SUCCESS

### KNOWLEDGE & UNDERSTANDING



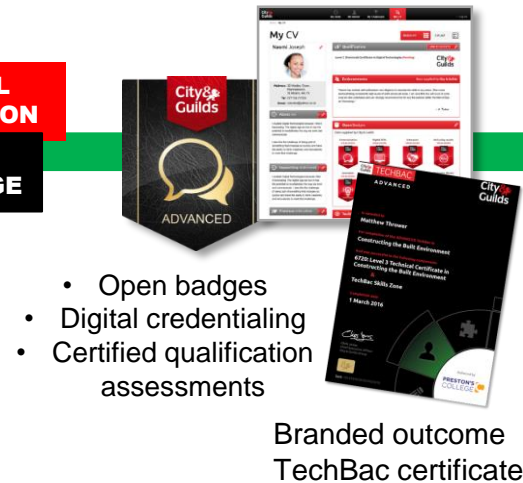
**Technical Skills**  
Practical learning  
(Technical Qualifications)

### HANDS-ON EXPERIENCES



**Professional Skills**  
Blended social learning  
(Workplace Skills)

### ASSESSMENT & CREDENTIALING



**Online CV**  
Share and showcase

### OUTCOME



**Targeted skills**  
Opening doors to university, apprenticeships or into a job

**Work ready**  
With the skills employers need

**A holistic and experiential approach making young people more employable.**

**TECHNICAL**  
**QUALIFICATIONS**  
**IN BSE**

**Built to meet industry needs.**

# EMPLOYER SUPPORT

## DESIGNED WITH LEADING EMPLOYERS

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The following employers have provided letters of support for our new technical qualifications in BSE:



## KS5 WHAT'S AVAILABLE AND WHEN?

### KEY STAGE 5, LEVEL 2 - AVAILABLE FOR SEPT 2016 DELIVERY

QAN	TITLE	GLHs
600/5498/0	City & Guilds Level 2 Diploma in Electrical Installations (Buildings and Structures) (QCF)	454
600/0989/5	City & Guilds Level 2 Diploma in Access to Building Services Engineering (QCF)	399
600/5500/5	City & Guilds Level 2 Diploma in Plumbing Studies (QCF)	453

**Now approved to appear on 2018 DfE Performance Tables.**



EFFECTIVE FROM SEPTEMBER 2017

## KEY STAGE 5 (16 - 18) (L2) TECHNICAL CERTIFICATES

360 GLH, 450 GLH  
Made up of 30, 60 GLH units

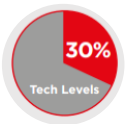
**Progression:** Enable entry to an apprenticeship, employment or progression to a Level 3 Technical Level Qualification.

**GRADING: P/M/D/D\***

**UCAS points:** n/a

**Mandatory content** and the contribution to overall grade must make up **at least 40%** of the qualification. Where qualifications have one or more pathway, the mandatory content (%) should apply equally to these.

**Assessment:** A proportion of the qualification content will be assessed externally (**minimum 25% for TCs and 30% Tech Level**). Must also include synoptic assessment.



**Employer involvement:** in design, recognition, delivery and or assessment, which raises the credibility of the qualification in the eyes of employers, parents and learners

## **KS5 WHAT'S AVAILABLE AND WHEN?**

### **KEY STAGE 5, LEVEL 3 AVAILABLE FOR SEPT 2016 DELIVERY**

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#### **Key Stage 5 - Level 3**

[Level 3 Advanced Technical Diploma in Electrical Installation 8202-30](#)

Accreditation No: [601/7307/5](#)

450GLH

[Level 3 Advanced Technical Diploma in Plumbing 8202-35](#)

Accreditation No: [601/7201/0](#)

450GLH

**Now approved to appear on 2018 DfE Performance Tables.**

# KS5 LEVEL 3 DESIGN PRINCIPLES

IN LINE WITH DFE QUALIFICATION CHANGES IN ENGLAND

## KEY STAGE 5 (16 - 18) (L3) TECH LEVELS

360 GLH, 450 GLH, 540 GLH, 720 GLH, 1080 GLH  
Made up of 30, 60, 90 GLH units

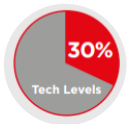
**Progression:** Enable entry to an apprenticeship or other employment, or progression to a related higher education course.

**GRADING: P/M/D/D\***

**UCAS points:** 16 min – 168 max

**Mandatory content** and the contribution to overall grade must make up **at least 40%** of the qualification. Where qualifications have one or more pathway, the mandatory content (%) should apply equally to these.

**Assessment:** A proportion of the qualification content will be assessed externally (**minimum 25% for TCs and 30% Tech Level**). Must also include synoptic assessment.



**Employer involvement:** in design, recognition, delivery and or assessment, which raises the credibility of the qualification in the eyes of employers, parents and learners

# UCAS POINTS

## ENABLING PROGRESSION TO UNIVERSITY

Grade	Level 3 Advanced Technical Certificate (360)	Level 3 Advanced Technical Diploma (540)	Level 3 Advanced Extended Technical Diploma (720)
Distinction*	56	56	112
Distinction	48	48	96
Merit	32	32	64
Pass	16	16	32

### OTHER QUALIFICATIONS

Grade	Level 3 Advanced Extended Project Qualifications	Using And Applying Mathematics (Core Maths)
A*	28	
A	24	20
B	20	16
C	16	12
D	12	10
E	8	6

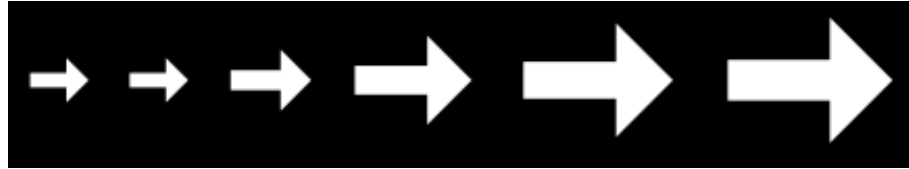
### A Level equivalent points

UCAS points	A Level
56	A*
48	A
40	B
32	C
24	D
16	E

- ✓ Adding Core Maths at Level 3 makes TechBac compliant with the Government's new technical baccalaureate measure.
- ✓ Funding uplift may apply

# UPCOMING TECHNICAL DEVELOPMENTS

COMING SOON



## Key Stage 5 - Level 2

- Technical Certificate in Electrotechnical
- Technical Certificate in Plumbing

# **NEW TECHNICAL QUALIFICATIONS ASSESSMENT**

**Timeframes, support and examples.**

# CURRENT TIMELINE AND ASSESSMENT DATES

## LEVEL 3 TECHNICAL LEVEL QUALIFICATIONS

DATE	END EXTERNAL EXAM	SYNOPTIC ASSIGNMENT
<b>FEBRUARY:</b> <b>WK OF: 1<sup>st</sup> FEB</b>		SYNOPTIC ASSIGNMENTS RELEASED TO CENTRES
<b>APRIL</b> <b>L3-18<sup>th</sup></b>	EXTERNAL END EXAM	
<b>MAY:</b> <b>EXAM-WK OF:</b> <b>L3-23<sup>th</sup></b> <b>SYN- WK of:</b> <b>23 MAY</b>	RESULTS OF 1 <sup>st</sup> EXTERNAL EXAM	SUBMISSIONS OF MARKS FOR SYNOPTIC ASSIGNMENT & OPTIONAL UNIT EVIDENCE
<b>JUNE</b> <b>L3 20<sup>th</sup></b>	2 <sup>ND</sup> EXTERNAL END EXAM WINDOW	
<b>JULY</b> <b>L3 – 4<sup>th</sup></b>		SYNOPTIC ASSIGNMENT MARKS CONFIRMED AND GRADES AWARDED
<b>JULY/AUG</b> <b>L3 – 25<sup>th</sup> JULY</b>	RESULTS OF 2 <sup>ND</sup> EXTERNAL EXAM	

# SUPPORT RESOURCES

## WHAT'S AVAILABLE AND WHERE?

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### DOCUMENTATION AVAILABLE NOW

- Qualification Handbooks
- Sample synoptic assessments
- Sample external end tests

All available on qualification pages at [cityandguilds.com](http://cityandguilds.com)

### CURRENT QUALIFICATION SUPPORT RESOURCES

- SmartScreen
- Scheme of work
- Textbooks
- Digital Learning
- E-books



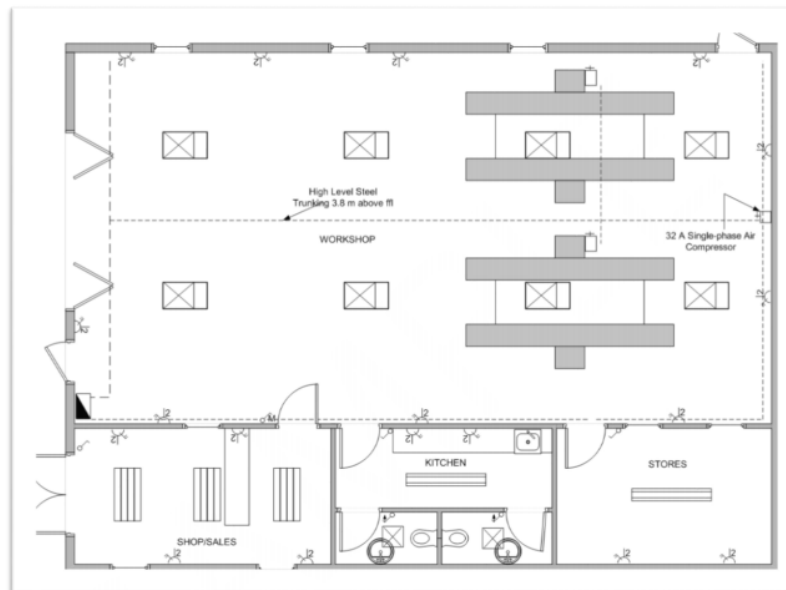
# ASSESSMENT EXAMPLE - SYNOPTIC

## LEVEL 3 ADVANCED TECHNICAL DIPLOMA IN ELECTRICAL INSTALLATION (450)

### Assignment

#### Task 1 – Designing an electrical system

This task is intended to assess your understanding of the design principles that affect planning electrical installations. You have been asked to design sections of the electrical installation for the building outlined in the drawing. Your tutor will provide this to you in a larger format.



You are required to carry out the following:

1. Determine and complete the design criteria for the design grid.
2. Determine for circuit 1:
  - a) the total earth fault loop impedance
  - b) the suitability of the cpc for thermal constraints using the adiabatic equation as Regulation 543.1.3 of BS 7671.
3. Show on the drawing the positions of self-contained standalone emergency luminaires indicating, where applicable, if they are:
  - a) maintained
  - b) non-maintained.

# ASSESSMENT EXAMPLE - EXTERNAL TEST

## LEVEL 3 ADVANCED TECHNICAL DIPLOMA IN ELECTRICAL INSTALLATION (450)

1. Construct a simple phasor diagram showing the relationship between voltage and current for **each** of the following components;
  - a) Resistor. (1 mark)
  - b) Inductor. (1 mark)
  - c) Capacitor. (1 mark)(Total marks 3)
2. Construct a simple power triangle showing the relationship between kVA, kVAR, kW and power factor. (4 marks)  
(Total marks 4)

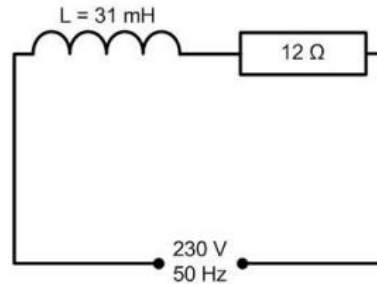


Figure 1

3. Determine, for the circuit shown in Figure 1, the
  - a) inductive reactance (2 marks)
  - b) impedance ( $Z$ ) (3 marks)
  - c) power factor. (2 marks)Show all calculations in your answers.  
(Total marks 7)
4.
  - a) Explain what is meant by power factor ( $\cos \theta$ ) (3 marks)
  - b) Describe how the power factor of a fluorescent luminaire may be corrected. (2 marks)(Total marks 5)

## STAY IN TOUCH

### TALK TO US

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**1 TALK TO YOUR BUSINESS MANAGER**

**2 JOIN THE LINKEDIN COMMUNITY: TECHBAC DEVELOPMENT & DISCUSSION**

**3 REGISTER FOR AN EVENT (WE RUN SECTOR EVENTS, ADVANCE EVENTS AND CONSULTATIONS)**

REGISTER FOR UPDATES AT

**[CITYANDGUILDS.COM/TECHBAC](https://www.cityandguilds.com/techbac)**