



London Chamber of Commerce & Industry Member of the IAB Group

# **Qualification Specification**

# LCCI Level 2 Certificate in Business Statistics



#### **LCCI** qualifications

LCCI qualifications are awarded by the IAB, the UK's largest awarding body offering academic and vocational qualifications that are globally recognised and benchmarked. For further information, please visit our qualifications website at <a href="https://www.iab.org.uk/iab-qualifications/">https://www.iab.org.uk/iab-qualifications/</a>

## About IAB

LCCI <u>qualifications</u> have been offered internationally for over 120 years and were started by the London Chamber of Commerce and Industry to meet the need for reliable, high-quality standards across international workforces.

As the way we do business evolves and becomes more fluid on a global scale the demand for internationally recognised standards has never been greater and is a sentiment that is echoed by the <u>IAB</u> who have been supporting financial professionals globally for 50 years.

Based on these shared values from September 2023, the IAB and LCCI will join to continue to offer and develop high-quality, professional qualifications for the finance sector and a range of other professions.

## Acknowledgements

This specification has been produced based on consultation with teachers, examiners, consultants and other interested parties. IAB would like to thank all those who contributed their time and expertise to the specification's development.

References to third party material made in this specification are made in good faith. IAB does not endorse, approve or accept responsibility for the content of materials, which may be subject to change, or any opinions expressed therein. (Material may include textbooks, journals, magazines and other publications and websites.)

All information in this specification is correct at the time of publication.

## Introduction LCCI qualifications

LCCI

LCCI qualifications are widely regarded by employers as preparing students for key functions of modern international business. Employers, universities and professional bodies such as the Association of Chartered Certified Accountants (ACCA), the Chartered Institute of Management Accountants (CIMA) and the Institute of Chartered Accountants of England and Wales (ICAEW) recognise them across the world.

This new and engaging range of qualifications has been developed in collaboration with professional bodies, employers and customers. To ensure that the qualifications develop the breadth and depth of knowledge, skills and understanding that students need to be effective employees and that they support progression pathways, we have carried out in-depth, independent consultation.

IAB LCCI offers a wide range of qualifications; they are available at Levels 1 to 4 across the following subject areas:

- Business
- Financial and Payroll

#### Purpose of the specification

This specification sets out:

- the objectives of the qualification
- any other qualification(s) that a student must have completed before taking the qualification
- any prior knowledge and skills that the student is required to have before taking the qualification
- any other requirements that a student must have satisfy before they will be assessed or before the qualification will be awarded
- the knowledge, understanding and skills that will be assessed as part of the qualification
- the method of assessment and any associated requirements relating to it
- the criteria against which a student's level of attainment will be measured (such as assessment criteria).

#### Rationale

The IAB LCCI Level 2 Certificate in Business Statistics meets the following purpose:

This qualification is for students who work in or want to work in business and research environments.

A review of the qualification requirements at this level identified the main content areas. This qualification therefore includes content on basic statistical techniques and the ability to apply this knowledge and understanding in solving business problems, interpreting data graphically and diagrammatically, basic statistical methodology, the suitability of statistical methods and models and applying statistical method to real world and commercial situations.

#### **Qualification aim**

The IAB LCCI Level 2 Certificate in Business Statistics qualification is for students who work in, or want to work in, business and research environments. Students should have a level of English sufficient to evaluate and explain the appropriateness of methods and outcomes.

This qualification will allow students to apply statistical techniques to business data to assist in analysing the business environment and to support the planning and decision-making process. Therefore, it is likely that students will study for this qualification as part of a programme of study in business, finance and accounting.

Students will have the opportunity to develop knowledge, understanding and skills of some basic statistical techniques and to apply this knowledge and understanding in solving business problems. Students will be able to present, understand and interpret business data graphically and diagrammatically, understand basic statistical methodology, assess the suitability of statistical methods and models and apply statistical method to real world and commercial situations.

The IAB LCCI Level 2 Certificate in Business Statistics qualification is established and valued by employers worldwide and recognised by professional bodies. This qualification will enhance the numeracy skills and knowledge of students, a requirement of employers, allowing them to handle, understand and interpret business data.

It will allow progression into the job market in areas such as forecasting, data collection and analysis, finance and accountancy. It will enable students to appreciate and understand data analysis in a business and finance environment.



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## Specification at a glance

The IAB LCCI Level 2 Certificate in Business Statistics consists of one online examination.

Titl	Title: IAB LCCI Level 2 Certificate in Business Statistics	
•	Externally assessed	100% of the total qualification
Ov	erview of content	
1	Management Information: The External and Internal Business Environment	
	1.1 Data collection	
	1.2 Data presentation	
	1.3 Descriptive statistics	
2	Forecasting for Business Decisions	
	2.1 Correlation and regression	
	2.2 Time-based data	
3	Risk Management and Business Decision Making	
	3.1 Probability	
Ov	verview of assessment	
• of	One online, externally set and marked examination, contributing to 100% of t the qualification.	he overall grade
<ul> <li>Assessment construction – examination consisting of five or six questions. The questions comprise short open response, calculations, chart/diagram construction/drawing and chart/diagram interpretation questions</li> </ul>		
•	The examination will be 2 hours and 30 minutes	



## Knowledge, skills and understanding

#### Content

To prepare students for the final assessment of this qualification, the following content must be covered.

Subject content	What students need to learn
	Students will need to apply their knowledge and understanding of the following content in a business context.
1.1 Data collection	a) Planning for data collection
	b) The difference between primary and secondary sources of business data
	c) The difference between a census and a survey and their relative advantages and disadvantages
	d) The need for a pilot survey before conducting a large scale survey
	e) The sample frame and the sampling fraction
	f) The different methods of sampling:
	• random
	• systematic
	• quota
	<ul> <li>g) Advantages and disadvantages of the different sampling methods</li> </ul>
	h) The role of stratification in sample design
	i) Advantages and disadvantages of the various methods of data collection:
	• interview
	postal questionnaire
	email survey
	j) Principles of questionnaire design

#### 1. Managing Information: The External and Internal Business Environment



Subject content	What students need to learn
1.2 Data Presentation	a) Alternative forms of data including categorical, discrete and continuous
	<ul> <li>b) The circumstances in which the various graphs/diagrams/charts should be used</li> </ul>
	c) Types of bar chart, pie chart and the Lorenz curve
	d) Interpretation of graphs/diagrams/charts/calculation
1.3 Descriptive statistics	a) Calculations:
	<ul> <li>the mean, median, mode and quartiles for ungrouped data</li> </ul>
	<ul> <li>the range, quartile deviation, mean deviation and standard deviation for ungrouped data</li> </ul>
	<ul> <li>obtain the median and quartiles from the cumulative frequency curve or by calculation</li> </ul>
	• the mean and standard deviation for grouped data
	a coefficient of variation
	b) Diagrams, charts and graphs:
	• a histogram, dealing with unequal class intervals
	a cumulative frequency curve
	<ul> <li>a box plot using the median and quartiles</li> </ul>
	<ul> <li>c) Interpretation of the measures of location and dispersion including the coefficient of variation</li> </ul>

#### **2.** Forecasting for Business Decisions

Subject content	What students need to learn
	Students will need to apply their knowledge and understanding of the following content in a business context.
2.1 Correlation and regression	a) Response and explanatory variables
	<ul> <li>b) Scatter diagram, interpreting the relationship shown including the possible presence of outliers</li> </ul>

	<ul> <li>C) Calculations:</li> <li>the product moment correlation coefficient</li> <li>Spearman's rank correlation coefficient</li> <li>a regression equation</li> </ul>
Subject content 2.2 Time-based data	What students need to learn         a) Components of a time series
	<ul> <li>b) Calculations:</li> <li>a suitable moving average to identify the trend</li> <li>the seasonal factors using the additive model</li> <li>a weighted index number for price, quantity and cost</li> <li>Laspeyres and Paasche index numbers including their advantages and disadvantages</li> </ul>
	<ul> <li>C) Diagrams, charts and graphs: <ul> <li>a time series graph</li> <li>the trend on the time series graph</li> </ul> </li> <li>d) Seasonally adjusted values and their uses</li> <li>e) Forecasting future values and their accuracy</li> <li>f) A national index of retail prices</li> <li>g) Change of base year and its effects</li> </ul>

#### 3. Risk Management and Business Decision Making

Subject content	What students need to learn
	Students will need to apply their knowledge and understanding of the following content in a business context.
3.1 Probability	a) Uses of probability and its application within a business environment
	<ul> <li>b) Probability concepts including mutually exclusive and independent events</li> </ul>
	c) The addition and multiplication rules of probability
	d) Presentation of business outcomes including the use of tabulation and Venn and tree diagrams



The following skills should be developed throughout the course of study.

Skills	Students should:
	<ul> <li>a) Use statistical techniques in a range of business contexts, including market research, financial data, staffing records and economic information</li> </ul>
	<ul> <li>b) Collect, present, analyse and interpret results of diagrams, charts and graphs and information in the context of practical business situations</li> </ul>
	c) Perform statistical calculations as an aid in solving business problems and making business decisions



## **Delivery guidance**

In delivering this qualification, teachers are encouraged to use a variety of examples and scenarios drawn from the business environment.

Business scenarios and short case studies can be useful when used in small-group work as they give students the opportunity to work with their peers to identify key issues and how they can be addressed. This is particularly useful in developing the skills required when analysing different approaches to specific business contexts. Examinations for this qualification will use the dollar (\$) as standard currency.

#### Assessment

#### Assessment summary

IAB LCC	IAB LCCI Level 2 Certificate in Business Statistics	
First te	First teaching: September 2019 First	
assess	ment: June 2020	
Numb	er of series: 2	
Overv	iew of content	
1 Management Information: The External and Internal Business Environment		
1.1 Data collection		
1.	1.2 Data presentation	
1.	3 Descriptive statistics	
2 Fo	precasting for Business Decisions	
2.	1 Correlation and regression	
2.	2 Time-based data	
3 Ri:	3 Risk Management and Business Decision Making	
3.	3 Probability	



Overview of assessment

• One online, externally set and marked examination, contributing to 100% of the overall grade of the qualification.

- The examination will be 2 hours and 30 minutes
- The examination will consist of 100 marks
- Candidates will be graded Pass/Merit/Distinction. A result of Fail will be recorded where candidates do not achieve the required marks for a Pass
- The examination contains five or six questions
- Candidates answer all questions
- The questions comprise short open response, calculations, chart/diagram construction/drawing and chart/diagram interpretation questions

IAB LCCI Level 2 Certificate in Business Statistics

• Candidates are expected to have available a calculator with at least the following keys: +, -, ×,  $\div$ ,  $\square$ ,  $x^2$ ,  $\square x$ ,  $\frac{1}{x}$ ,  $x^{y}$ ,  $\ln x$ ,  $e^x$ , x!, sine, cosine and tangent and their

inverses in degrees and decimals of a degree, and in radians; memory. Calculators with a facility for symbolic algebra, differentiation and/or integration are not permitted

- A formulae sheet will be provided
- Bilingual dictionaries are permitted for use in the exam



## Assessment Objectives

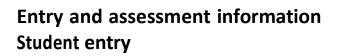
Students must:		% of qualification
A01	Memorise	7
	Recall statistical procedures used in a business context Recall statistical	
	terms and definitions	
	Recall statistical processes and formulae	
AO2	Perform procedures	63
	Carry out calculations using descriptive statistics	
	Carry out statistical calculations involving correlation, regression and time-based data	
	Carry out calculations involving probability	
	Present/display data in tables or charts	
AO3	Communicate understanding	25
	Demonstrate understanding of statistical concepts within a business context, understanding statistical techniques	
	Demonstrate understanding of the use of appropriate scales, axes and labels on graphs and charts	
	Demonstrate understanding of data collection techniques	
AO4	Analyse	5
	Interpret, compare and analyse data and information	
	Recognise patterns, correlations and make predictions Apply concepts	
	to a given business scenario.	
	Total	100



## Performance descriptors

Grade	Descriptor
Pass	Candidates can recall statistical procedures, terms, definitions, processes and formulae in a business context, showing an understanding of statistical concepts.
	Candidates can collect and manipulate raw data with occasional errors, using appropriate statistical calculations which have been set in a business context.
	Candidates can carry out simple computations accurately. They carry out more complex computations with some errors. They can present solutions and data using tables, graphs, charts and diagrams with occasional errors.
	Candidates can analyse data and information, recognise patterns and make basic connections to predict consequences.
Distinction	Candidates can recall and communicate thorough understanding of statistical procedures, terms, definitions, processes and formulae in a business context, and explain statistical concepts.
	Candidates can consistently collect and manipulate raw data, using appropriate statistical calculations to interpret outcomes accurately, sometimes applying these in a business context.
	Candidates can carry out complex computations accurately. They can present tables, graphs, charts and diagrams accurately.
	Candidates can sometimes analyse data or information to make reasoned judgements and interpretations.

Performance descriptors may be revised following the first award.



Details on how to enter candidates for the examination for this qualification can be found at <u>https://www.iab.org.uk/lcci/</u> or through our awarding team <u>ao@iab.org.uk</u>

The closing date for entries is approximately six weeks before the start of each examination series. Centres should refer to the published examination timetable for examination dates.

#### **Combinations of entry**

There are no forbidden combinations of entry for this qualification.

#### Age

LCC

Students must be a minimum of 16 years old to be entered for this qualification.

#### **Resitting the qualification**

Candidates must leave one series between the previous examination and the next planned examination entry.

#### Awarding and reporting

The IAB LCCI Level 2 Certificate in Business Statistics qualification is graded and certificated on a threegrade scale: Pass/Merit/Distinction.

#### Access arrangements, reasonable adjustments and special consideration

#### **Access arrangements**

Access arrangements are agreed before an assessment. They allow students with special educational needs, disabilities or temporary injuries to:

- access the assessment
- show what they know and can do, without changing the demands of the assessment.

The intention behind an access arrangement is to meet the particular needs of an individual student with a disability, without affecting the integrity of the assessment. Access arrangements are the principal way in which awarding bodies comply with the duty under the Equality Act 2010 to make 'reasonable adjustments'.

Access arrangements should always be processed at the start of the course. Students will then know what is available and have the access arrangement(s) in place for assessment.



#### **Reasonable adjustments**

The Equality Act 2010 requires an awarding organisation to make reasonable adjustments where a person with a disability would be at a substantial disadvantage in undertaking an assessment. The awarding organisation is required to take reasonable steps to overcome that disadvantage.

A reasonable adjustment for a particular person may be unique to that individual and therefore might not be in the list of available access arrangements.

Whether an adjustment will be considered reasonable will depend on a number of factors, which will include:

- the needs of the student with the disability
- the effectiveness of the adjustment
- the cost of the adjustment; and
- the likely impact of the adjustment on the student with the disability and other students.

An adjustment will not be approved if it involves unreasonable costs to the awarding organisation, has untenable timeframes or affects the security or integrity of the assessment. This is because the adjustment is not 'reasonable'.

#### **Special consideration**

Special consideration is a post-examination adjustment to a student's mark or grade to reflect temporary injury, illness or other indisposition at the time of the examination or assessment, which has had, or is reasonably likely to have had, a material effect on a candidate's ability to take an assessment or demonstrate their level of attainment in an assessment.

#### **Further information**

Please see the website for further information about how to apply for access arrangements and special consideration.

For further information about access arrangements, reasonable adjustments and special consideration please refer to the JCQ website: www.jcq.org.uk.

#### Equality Act 2010 and IAB equality policy

Equality and fairness are central to our work. Our equality policy requires all students to have equal opportunity to access our qualifications and assessments, and our qualifications to be awarded in a way that is fair to every student.

We are committed to making sure that:

- students with a protected characteristic (as defined by the Equality Act 2010) are not, when they are undertaking one of our qualifications, disadvantaged in comparison to students who do not share that characteristic
- all students achieve the recognition they deserve for undertaking a qualification and that this



achievement can be compared fairly to the achievement of their peers.

You can find details of how to make adjustments for students with protected characteristics in the policy document *Access Arrangements, Reasonable Adjustments and Special Considerations,* which is on our website <u>https://www.iab.org.uk/lcci/</u>

#### **Candidate malpractice**

Candidate malpractice refers to any act by a candidate that compromises or seeks to compromise the process of assessment or which undermines the integrity of the qualifications or the validity of results/certificates.

Candidate malpractice in examinations must be reported to IAB awarding team by email <u>ao@iab.org.uk</u> clearly identifying the title or posted to the registered office 110 Bishopsgate, London, EC2N 4AY. Please provide as much information and supporting documentation as possible. Note that the final decision regarding appropriate sanctions lies with Pearson.

Failure to report malpractice constitutes staff or centre malpractice.

#### Staff/centre malpractice

Staff and centre malpractice includes both deliberate malpractice and maladministration of our qualifications. As with candidate malpractice, staff and centre malpractice is any act that compromises or seeks to compromise the process of assessment or which undermines the integrity of the qualifications or the validity of results/certificates.

All cases of suspected staff malpractice and maladministration must be reported immediately, before any investigation is undertaken by the centre, to IAB awarding team by email <u>ao@iab.org.uk</u> clearly marked malpractice or posted to the registered office 110 Bishopsgate, London, EC2N 4AY. Please provide as much information and supporting documentation as possible. Note that the final decision regarding appropriate sanctions lies with IAB.

Failure to report malpractice itself constitutes malpractice.

More detailed guidance on malpractice can be found in the latest version of the document General and Vocational Qualifications Suspected Malpractice in Examinations and Assessments Policies and Procedures, available at: www.jcq.org.uk/exams-office/malpractice.

#### Language of assessment

Assessment of this specification will be in English only. Assessment materials will be published in English only and all work submitted for examination must be in English only.

#### **Other information**

## Total Qualification Time (TQT) and Guided Learning Hours (GLH)

For all regulated qualifications, we specify a total number of hours that students are expected to



undertake in order to complete and show achievement for the qualification – this is the Total Qualification Time (TQT). The TQT value indicates the size of a qualification.

Within the TQT, we identify the number of Guided Learning Hours (GLH) that a centre delivering the qualification needs to provide. Guided learning means activities that directly or immediately involve tutors and assessors in teaching, supervising, and invigilating students, for example lectures, tutorials, online instruction and supervised study.

As well as guided learning, there may be other required learning that is directed by tutors or assessors. This includes, for example, private study, preparation for assessment and undertaking assessment when not under supervision, such as preparatory reading, revision and independent research.

TQT and guided learning hours are assigned after consultation with users of the qualifications.

This qualification has a TQT value of 140 and a GLH of 120.

#### Student recruitment

IAB follows the JCQ policy concerning recruitment to our qualifications in that:

- they must be available to anyone who is capable of reaching the required standard
- they must be free from barriers that restrict access and progression
- equal opportunities exist for all students.

#### Prior learning and other requirements

There are no formal entry requirements for this qualification.

Students may be studying in a local language but the assessment will be in English. IAB recommends students have B1 level of English on the Common European Framework of Reference (CEFR). This will support access to the assessment materials and be able to communicate responses effectively.

IAB's *Recognition of prior learning policy and process* document can be found at <u>https://www.iab.org.uk/lcci/</u>

LCCI qualifications are designed to allow students to pursue different routes as outlined below.

Enter a chosen field of work, pursue a promotion, or change their field of work

The IAB LCCI Level 2 Certificate in Business Statistics qualification is designed to support students' knowledge and understanding of statistics relevant to their portfolio of learning in business, finance and accounting. The qualification will support progression into the job market in areas such as forecasting, data collection and analysis, finance and accountancy.

Using appropriate internal processes, centres must ensure they choose the most appropriate qualification level for their students' needs.

Progress to further study, such as the next LCCI level or externally with a professional body or education provider

This qualification allows progression to LCCI Level 3 accounting qualifications, such as the IAB LCCI Level



3 Certificate in Business Statistics, as well as qualifications across the LCCI suites. Completing different LCCI qualifications could potentially lead to gaining an LCCI Diploma. Please refer to the 'Exemptions' section of this specification for information on recognition from external providers, or the latest LCCI Information Manual for more information about Diplomas.

#### Exemptions

We are continuously gaining new and updated exemptions for our LCCI qualifications from professional bodies and organisations. For the latest list of agreements, and to check this specific qualification, please visit the IAB LCCI website: <u>https://www.iab.org.uk/lcci/</u>

#### Codes

This qualification is approved by Ofqual and meets the Ofqual General Conditions for inclusion on the Register of Regulated Qualifications. The Qualification Number (QN) is: 603/5080/5.

The subject code for IAB LCCI Level 2 Certificate in Business Statistics is: \*\*\*\*\*\*. The subject code is used by centres to enter students for a qualification. Centres will need to use the entry codes only when claiming students' qualifications.

#### Support, training and resources

#### Training

IAB offers support and training to teachers on standard of delivery and preparing students to meet the assessment requirements.

#### Specifications, Sample Assessment Materials and Teacher Support Materials

## Appendix 1: IAB LCCI Level 2 Certificate in Business Statistics – formulae sheet

Median for grouped data

$$I_{m? \underline{C}_{m}} \stackrel{?F_{m?1}}{\underset{f_{m}}{P}^{2}} P_{p}$$

where  $l_m$ ,  $c_m$   $f_m$  are the lower boundary, width and frequency respectively of the and

median class, *n* is the total number of observations and  $F_{m \square 1}$  is the cumulative frequency corresponding to  $I_m$ .



Mean for ungrouped data  $x \ge \frac{\mathbb{P}^X}{n}$ 

Mean for grouped data

x ? ? / ? fx

Standard deviation for ungrouped data S ?

$$\sqrt{\frac{\sum x^2}{n} - (\bar{x})^2}$$

 $\sqrt{\frac{\sum fx^2}{\sum f}} - \left(\frac{\sum fx}{\sum f}\right)^2$ 

Standard deviation for grouped data S 2

Quartile deviation  $\begin{array}{c} Q_{32} \\ \hline Q_{1} \\ \hline 2 \end{array}$ 

Mean deviation

$$\sum f |_{xf}$$
-mean

Coefficient of variation  $\frac{s}{2}$  Coefficient of variation  $\frac{s}{x}$ 

Product moment correlation coefficient r 2

n<sub>?</sub>xy ????x???y?

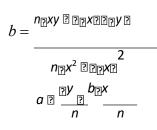
$$\overline{\sqrt{\left(n\sum x^2-\left(\sum x\right)^2\right)\left(n\sum y^2-\left(\sum y\right)^2\right)}}$$

Spearman's rank correlation coefficient  $r_s \ 212 \frac{n_s}{n_s}^2 \ 21_p$ 



Least squares regression line

y^ ?a ?bx



Laspeyres index	Price	Quantity 2 <sup>p</sup> 0 <sup>q</sup> 1 2 <sup>p</sup> 0 <sup>q</sup> 0
Paasche index	$\frac{\mathbf{P}^{p_{1}q_{1}}}{\mathbf{P}^{p_{0}q_{1}}} \mathbf{P}^{100}$	$\frac{\mathbb{P}^{p_1q_1}}{\mathbb{P}^{p_1q_0}}$
Weighted index	₽WI ₽W	
Multiplication rule of probability PPAP BP PPAPPBP if A and B independent		
Addition rule of probability	PPAZ BZZ PZAZZ PZBZZ PZAZ BZ	
	June 2023 For more information on LCCI qualifications please visit our website: <u>https://www.iab.org.uk/iab-qualifications/</u> Institute of Accountants and Bookkeepers. Registered in England No.01119378 Registered Office: 110 Bishopsgate London EC2N 4AY	