## Pearson

LCCI Level 2 Certificate in Business Statistics
(ASE20108)

## SPECIFICATION

First teaching from September 2019

## Edexcel, BTEC and LCCI qualifications

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#### Abstract

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## Acknowledgements

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

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## Introduction

## LCCI qualifications

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.

There is a wide range of LCCI qualifications, they are available at levels 1 to 4 across the following subject areas:

- Business
- English Language
- Financial and Quantitative
- Marketing.

This specification is part of the Financial and Quantitative suite of LCCI qualifications.
This qualification replaces the Pearson LCCI Level 2 Certificate in Business Statistics (601/5168/7).

## 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 Pearson 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 Pearson 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 in order to assist in analysing the business environment and to support the planning and decision-making process. Therefore it is likely that students will study 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 Pearson 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 Pearson LCCI Level 2 Certificate in Business Statistics consist(s) of one externally examined paper.

## Title: Pearson LCCI Level 2 Certificate in Business Statistics

- Externally assessed
$100 \%$ of the
total
qualification

Overview 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

Overview of assessment

- One written externally set and marked paper contributing 100\% of the overall grade of the qualification
- 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
- 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.

1. Managing Information: The External and Internal Business Environment

| 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: <br> - random <br> - systematic <br> - quota |
|  | g) Advantages and disadvantages of the different sampling methods |
|  | h) The role of stratification in sample design |
|  | i) Advantages and disadvantages of the various methods of data collection: <br> - interview <br> - postal questionnaire <br> - email survey |
|  | j) Principles of questionnaire design |


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

## 2. Forecasting for Business Decisions

| Subject content | What students need to learn |
| :--- | :--- |
| 2.1 Correlation and <br> regression | Students will need to apply their knowledge and <br> understanding of the following content in a business <br> context. |
|  | a) Response and explanatory variables |
|  | b) Scatter diagram, interpreting the relationship shown <br> including the possible presence of outliers |
|  |  |
|  |  |
| - Spearman's rank correlation coefficient |  |
| - a regression equation |  |


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

3. Risk Management and Business Decision Making

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

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

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

## Pearson LCCI Level 2 Certificate in Business Statistics

First teaching: September 2019
First assessment: June 2020
Number of series: 2
Overview 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

### 3.3 Probability

Overview of assessment

- One written externally set and marked paper, contributing $100 \%$ 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 paper 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

Pearson LCCI Level 2 Certificate in Business Statistics

- Candidates are expected to have available a calculator with at least the following keys: $+,-, \times, \div, \pi, x^{2}, \sqrt{ } x, \frac{1}{x}, x^{y}, \ln x, e^{x}, x!$, 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 <br> qualification |
| :--- | :--- | :--- |
| AO1 | Memorise <br> Recall statistical procedures used in a business context <br> Recall statistical terms and definitions <br> Recall statistical processes and formulae | 7 |
| AO2 | Perform procedures <br> Carry out calculations using descriptive statistics <br> Carry out statistical calculations involving correlation, <br> regression and time-based data <br> Carry out calculations involving probability <br> Present/display data in tables or charts | 63 |
| AO3 | Communicate understanding <br> Demonstrate understanding of statistical concepts within a <br> business context, understanding statistical techniques <br> Demonstrate understanding of the use of appropriate scales, <br> axes and labels on graphs and charts <br> Demonstrate understanding of data collection techniques | 25 |
| AO4 | Analyse <br> Interpret, compare and analyse data and information <br> Recognise patterns, correlations and make predictions <br> Apply concepts to a given business scenario. | 5 |

## Performance descriptors

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

Performance descriptors may be revised following the first award.

## Entry and assessment information

## Student entry

Details on how to enter candidates for the examination for this qualification can be found at qualifications.pearson.com

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

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 Pearson LCCI Level 2 Certificate in Business Statistics qualification is graded and certificated on a three-grade 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 Pearson 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 qualifications.pearson.com

## 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 Pearson using a JCQ Form M1 (available at www.jcq.org.uk/exams-office/malpractice). The form can be emailed to pqsmalpractice@pearson.com or can be posted to: Investigations Team, Pearson, 190 High Holborn, London WC1V 7BH. 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 Pearson on a JCQ Form M2(a) (available at www.jcq.org.uk/exams-office/malpractice). The form, supporting documentation and as much information as possible can be emailed to pqsmalpractice@pearson.com or posted to: Investigations Team, Pearson, 190 High Holborn, London WC1V 7BH. Note that the final decision regarding appropriate sanctions lies with Pearson.

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

Pearson 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. Pearson 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.

Pearson's Recognition of prior learning policy and process document can be found at qualifications.pearson.com/policies

## Progression

The Pearson LCCI Level 2 and Level 3 Certificates in Business Statistics qualifications are designed to support student knowledge and understanding of statistics relevant to their portfolio of learning in business, finance and accounting.

Centres must ensure they choose the most appropriate qualification level for their learners' needs.

The Pearson LCCI Level 2 Certificate in Business Statistics qualification will support progression into the job market in areas such as forecasting, data collection and analysis, finance and accountancy.

## Exemptions

We are seeking exemptions for our qualifications from a number of Professional Bodies. For the latest list of exemptions, please visit the Pearson LCCI website, and choose your relevant qualification.

## 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 Pearson LCCI Level 2 Certificate in Business Statistics is:
ASE20108. 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

Pearson 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

The Pearson LCCI Level 2 Certificate in Business Statistics Sample Assessment Materials document (ISBN 9781446961186) can be downloaded from qualifications.pearson.com/lcci

To find a list of all the support documents available please visit qualifications.pearson.com/lcci

## Appendix 1: Pearson LCCI Level 2 Certificate in Business Statistics - formulae sheet

Median for grouped data $l_{m+\frac{c_{m}}{f_{m}}\left(\frac{n}{2}-F_{m-1}\right)}$
where $l_{m}, c_{m}$ and $f_{m}$ are the lower boundary, width and frequency respectively of the median class, $n$ is the total number of observations and $F_{m-1}$ is the cumulative frequency corresponding to $l_{m}$.

Mean for ungrouped data $\bar{x}=\frac{\sum x}{n}$

Mean for grouped data $\bar{x}=\frac{\sum f x}{\sum f}$
Standard deviation for ungrouped data $S=\sqrt{\frac{\sum x^{2}}{n}-(\bar{x})^{2}}$

Standard deviation for grouped data $S=\sqrt{\frac{\sum f x^{2}}{\sum f}-\left(\frac{\sum f x}{\sum f}\right)^{2}}$

Quartile deviation $\frac{Q_{3-} Q_{1}}{2}$

Mean deviation $\frac{\sum f \mid x-\text { mean } \mid}{\sum f}$

Coefficient of variation $\frac{s}{\bar{x}} \times 100$

Product moment correlation coefficient $r=\frac{n \sum x y-\left(\sum x\right)\left(\sum y\right)}{\sqrt{\left(n \sum x^{2}-\left(\sum x\right)^{2}\right)\left(n \sum y^{2}-\left(\sum y\right)^{2}\right)}}$

Spearman's rank correlation coefficient $r_{s}=1-\frac{6 \sum d^{2}}{n\left(n^{2}-1\right)}$

Least squares regression line $\hat{y}=a+b x$

$$
\begin{gathered}
b=\frac{n \sum x y-\left(\sum x\right)\left(\sum y\right)}{n \sum x^{2}-\left(\sum x\right)^{2}} \\
a=\frac{\sum y}{n}-\frac{b \sum x}{n}
\end{gathered}
$$

| Price | Quantity |  |
| :---: | :---: | :---: |
| Laspeyres index | $\frac{\sum p_{1} q_{0}}{\sum p_{0} q_{0}} \times 100$ | $\frac{\sum p_{0} q_{1}}{\sum p_{0} q_{0}} \times 100$ |

Paasche index

$$
\frac{\sum p_{1} q_{1}}{\sum p_{0} q_{1}} \times 100
$$

$$
\frac{\sum p_{1} q_{1}}{\sum p_{1} q_{0}} \times 100
$$

Weighted index

$$
\frac{\sum W I}{\sum W}
$$

Multiplication rule of probability $P(A \cap B)=P(A) \times P(B)$ if $A$ and $B$ independent

Addition rule of probability $P(A \cup B)=P(A)+P(B)-P(A \cup B)$

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