



Pearson LCCI Level 2 Certificate in Business Statistics (VRQ) (ASE20096)

SPECIFICATION

Issue 2

First teaching from September 2015

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Edexcel, BTEC and LCCI qualifications

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This specification is Issue 2. Key changes are sidlined in the document. We will inform centres of any changes to this issue. The latest issue can be found on our website, qualifications.pearson.com

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 to carry out the key functions of modern international business. The qualifications are recognised worldwide by employers, universities and professional bodies such as the Association of Chartered Certified Accountants (ACCA) recognise them across the world.

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

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

- English Language
- Marketing and Customer Service
- Business, Administration and IT
- Financial and Quantitative.

This specification is part of the Financial and Quantitative suite of LCCI qualifications.

Please refer to the Pearson website for details of other qualifications in the suite.

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 satisfied 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 (VRQ) 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 (VRQ) 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 (VRQ) qualification and legacy qualification are 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 (VRQ) consists of one externally examined paper.

Title: Pearson LCCI Level 2 Certificate in Business Statistics (VRQ)

- 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 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

The following content must be covered to prepare students for the final assessment of this qualification.

1. Management Information: The External and Internal Business Environment

Subject content	What students need to learn:
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: <ul style="list-style-type: none">• random• systematic• multi stage• 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: <ul style="list-style-type: none">• telephone• interview• postal questionnaire• email survey• internet 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
1.3 Descriptive statistics	a) Calculations: <ul style="list-style-type: none"> • the mean, median, mode and quartiles for ungrouped data • the range, quartile deviation, mean deviation and standard deviation for ungrouped data • obtain the mode from either a histogram or by calculation • obtain the median and quartiles from the cumulative frequency curve or by calculation • the mean and standard deviation for grouped data • a coefficient of variation
	b) Diagrams, charts and graphs: <ul style="list-style-type: none"> • a histogram, dealing with unequal class intervals • a cumulative frequency curve • 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 regression	a) Response and explanatory variables
	b) Scatter diagram, interpreting the relationship shown including the possible presence of outliers
	c) Calculations: <ul style="list-style-type: none"> • the product moment correlation coefficient • Spearman's rank correlation coefficient • the coefficient of determination • a regression equation

Subject content	What students need to learn:
	d) Plot a least squares regression line
	e) Forecasting and forecast accuracy
	f) Meaning and interpretation of regression and correlation coefficients
2.2 Time-based data	a) Components of a time series
	b) Calculations: <ul style="list-style-type: none"> • a suitable moving average to identify the trend • the seasonal factors using the additive model • a weighted index number for price, quantity and cost • Laspeyres and Paasche index numbers including their advantages and disadvantages
	c) Diagrams, charts and graphs: <ul style="list-style-type: none"> • a time series graph • 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
	h) Index linking for comparative purposes

3. Risk Management and Business Decision Making

Subject content	What students need to learn:
3.1 Probability	a) Uses of probability and its application within a business environment
	b) Probability concepts including mutually exclusive and independent events
	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:
	a) Use statistical techniques in a range of business contexts, including market research, financial data, staffing records and economic information
	b) Collect, present, analyse and interpret results of diagrams, charts and graphs and information in the context of practical business situations
	c) Perform statistical calculations as an aid in solving business problems and making business decisions

Assessment

Assessment summary

Pearson LCCI Level 2 Certificate in Business Statistics (VRQ)

First teaching: September 2015

Number of series: 4

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
- 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 questions
- Candidates answer all questions
- The questions comprise short open response, calculations, chart/diagram construction/drawing and chart/diagram interpretation questions
- Candidates are expected to have available a calculator with at least the following keys: +, -, ×, ÷, π, 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 qualification
A01	Memorise Recall statistical procedures used in a business context; recall statistical terms and definitions; recall statistical processes and formulae	5-9
A02	Perform procedures Collect and manipulate raw data; carry out computations; carry out statistical calculations in a business context	61-65
A03	Communicate understanding Describe and explain statistical concepts within a business context, understanding statistical techniques; present/display data in tables or charts	23-27
A04	Analyse Classify, compare and analyse information; interpret business data and information; recognise patterns and correlations; predict consequences; apply concepts/make connections	3-7
Total		100

Performance descriptors

Assessment objectives have been developed for this qualification to ensure that examinations are appropriately targeted. They describe the abilities that students should be able to demonstrate. Each question targets one or more assessment objectives. They are applied to the examination in the proportions below.

Grade	Descriptor
Pass	<p>Candidates recall statistical procedures, terms, definitions, processes and formulae in a business context, showing a understanding of statistical concepts.</p> <p>Candidates mostly collect and manipulate raw data selecting appropriate statistical calculations and use them in a business context. They carry out computations with some accuracy using standard statistical calculations, presenting solutions and data using tables, graphs, charts, diagrams with occasional errors.</p> <p>Candidates analyse data and information, recognise significant patterns and make connections to predict consequences.</p>
Distinction	<p>Candidates recall, and communicate thorough understanding of, statistical procedures, terms, definitions, processes and formulae in a business context and explain statistical concepts.</p> <p>Candidates consistently, collect and manipulate raw data selecting appropriate statistical calculations to interpret outcomes accurately, applying these in a business context. They carry out computations with precision using statistical calculations, presenting tables/graphs/charts/diagrams appropriately and accurately.</p> <p>Candidates make reasoned judgements and interpretations, drawing on sophisticated analyses.</p>

Performance descriptors may be revised following the first award.

Entry and assessment information

Please see the *LCCI International Qualification Operations Guide for centres* and the *LCCI Examination Regulations*, available from our website: qualifications.pearson.com/lcci

Student entry

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

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

This qualification is intended for learners aged 16 and above.

Resitting the qualification

Candidates can resit the examination for Pearson LCCI Level 2 Certificate in Business Statistics (VRQ).

It is strongly advised that candidates do not register to undertake a resit until they have received the results from their previous examination.

Awarding and reporting

The Pearson LCCI Level 2 Certificate in Business Statistics (VRQ) qualification is graded and certificated on a three-grade scale: Pass/Merit/Distinction. Pass and Distinction are awarded, Merit is arithmetically calculated.

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, 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/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 his or her level of attainment in an assessment.

Further information

Please see our website or email internationalenquiries@pearson.com 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: <http://www.jcq.org.uk/examination-system/access-arrangements-and-special-consideration>

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 on 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, <http://qualifications.pearson.com/en/support/support-topics/exams/special-requirements.html>

Malpractice

For up-to-date information on malpractice please refer to the latest Joint Council for Qualifications (JCQ) *Suspected Malpractice in Examinations and Assessments* document, available on the JCQ website: <http://www.jcq.org.uk/exams-office/malpractice/>

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 M1 Form (available at www.jcq.org.uk/exams-office/malpractice/). The form can be emailed to pqsmalpractice@pearson.com or 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 M2 (a) Form (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 JCQ General and Vocational Qualifications Suspected Malpractice in Examinations and Assessments, 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

Guided Learning Hours

Guided Learning Hours (GLH): the number of teacher-led contact hours required to support student achievement for a qualification.

The Pearson LCCI Level 2 Certificate in Business Statistics (VRQ) requires 120 GLH.

Centres should ensure that students have additional time for self-study and preparation for the final examination, this is in addition to the GLH stated above.

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.

Progression

The Pearson LCCI Level 2 and Level 3 Certificates in Business Statistics (VRQ) 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 (VRQ) 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.

<http://qualifications.pearson.com/content/dam/pdf/LCCI/2014/Recognition-from-PBs-for-LCCI-qualifications-July-2015.pdf>

National Occupational Standards

The Pearson LCCI Level 2 Certificate in Business Statistics (VRQ) has links to the following National Occupational Standards (NOS):

- Finance and Accounting

Please see our website for further details.

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: 601/5168/7

The subject code for the Pearson LCCI Level 2 Certificate in Business Statistics (VRQ) is: ASE20096. The subject code is used by centres to enter students for a qualification.

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 (VRQ) Sample Assessment Materials document (ISBN 9781446926710) can be downloaded from our website.

To find a list of all the support documents available please visit the website.

Appendix

Appendix 1: Pearson LCCI Level 2 Certificate in Business Statistics
(VRQ) – formulae sheet

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Appendix 1: Pearson LCCI Level 2 Certificate in Business Statistics (VRQ) – 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 $\bar{x} = \frac{\sum fx}{\sum f}$

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

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

Quartile deviation $\frac{Q_3 - Q_1}{2}$

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

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

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

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

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

$$b = \frac{n \sum xy - (\sum x)(\sum y)}{n \sum x^2 - (\sum x)^2}$$

$$a = \frac{\sum y}{n} - \frac{b \sum x}{n}$$

	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	$\frac{\sum WI}{\sum W}$	

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

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

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For more information on LCCI qualifications
please visit our website: qualifications.pearson.com/lcci

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