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| <b>Course Code:</b>        | <b>1304AFE</b>                              |
| <b>Course Name:</b>        | <b>Business Statistics</b>                  |
| <b>Trimester:</b>          | <b>Trimester 3, 2017</b>                    |
| <b>Program:</b>            | Diploma of Social and Psychological Science |
|                            |   |
| <b>Credit Points:</b>      | 10  |
| <b>Course Coordinator:</b> | Tony Hurd                                   |
| <b>Document modified:</b>  | 20 October 2017                             |

#### Teaching Team

Your lecturer/tutor can be contacted via the email system on the portal.

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#### Staff Consultation

Your lecturer/tutor is available each week for consultation outside of normal class times. Times that your lecturer/tutor will be available for consultation will be given in the first week of lectures. A list of times and rooms will be published on the Griffith College Portal under the "myTimetable" link.

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#### Prerequisites

There are no prerequisites for this course

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## Brief Course Description

Business Statistics is a 10 Credit Point course within the Diploma Social and Psychological Science.

The Diploma of Social and Psychological Science is designed to provide students with a pathway to:

- further university studies in Psychology and Counselling or
- direct employment.

Business Statistics introduces students to the core concepts of statistical analysis. It is introductory in nature, and provides materials across a broad range of statistical techniques and methods. The focus of this course is to provide students with the ability to recognise situations in which statistical analysis may be useful, and the relevant techniques and methods that apply in those situations.

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### Rationale

Statistical analysis is the most important tool used in decision-making in many areas. To make a good decision, the decision-maker must carefully analyse all alternatives in the light of all available information. Business Statistics provides an opportunity for the development of key skills in the recognition and analysis of real world problems. It also provides opportunities for the development of logical thinking, reasoning, and critical thinking.

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### Aims

This course is designed to provide students with the basic statistical techniques needed for the study of their discipline. It aims to provide recognition where statistical analysis may be of benefit and introduce the range of methods that may apply to a given situation using real world examples.

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### Learning Outcomes

Upon successful completion of this course you will be able to:

1. Understand the nature of data and critically analyse basic statistical information.
2. Present statistical information graphically or numerically.
3. Understand and apply basic concepts in statistics such as the normal distribution, probability, sampling and Central Limit Theorem. You will also be able to see how they relate to the area of inferential statistics.
4. Understand and apply statistical techniques in inference such as confidence intervals, hypothesis testing, correlation and regression. In addition, you will also learn to calculate and interpret index numbers.
5. Use SPSS to carry out statistical analysis and appreciate SPSS's strengths and weaknesses.
6. Communicate statistical findings to a non technical audience.

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### Texts and Supporting Materials

1. Selvanathan, E.A., Selvanathan, S., Keller, G., (2017). *Business Statistics, Abridged Australia New Zealand* (7th ed.). Cengage Learning.
  2. A non-programmable scientific calculator (preferred model: CASIO fx series).
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## **Organisation and Teaching Strategies**

### ***Class Contact Summary***

#### **Attendance**

Attendance at every lecture, tutorial and workshop is vital if you are seeking a pass in the course.

This is because the topics and concepts in this subject are cumulative. This means that you must understand the materials from previous weeks, before you can attempt to complete work in subsequent weeks.

#### **Participation in Class**

You are expected to actively participate in classes each week.

#### **Consultation Times**

Attendance during consultation times is optional but you are encouraged to use this extra help to improve your learning outcomes.

#### **Course Materials**

You are expected to prepare in advance for lectures, tutorials and workshops every week. Before attending lectures, you should have a copy of the lecture notes and lecture examples. Before attending tutorials and workshops you should have attempted the questions and problems.

You are required to bring the textbook, a statistical calculator (non-graphics & non-programmable) and any work in progress to every lecture, tutorial and workshop.

#### **Independent Learning**

You are expected to reinforce your learning from class time by undertaking sufficient independent study {approximately 6 hours per week outside of class time} so that you can achieve the learning outcomes of the course.

#### **Program Progression**

You are reminded that satisfactory Program Progression requires that attendance in classes is maintained at equal to or greater than 80%, and that GPA is maintained at equal to or greater than 3.5 with passing grades achieved in more than 50% of courses in any trimester [please see Griffith College Policy Library - Program Progression Policy - for more information].

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### **Content Schedule**

Business Statistics consists of a series of specific statistical concepts [see Weekly Teaching Schedule]. Each week's lecture focuses on a particular set of concepts. The course commences by providing you with a brief introduction to the field of statistics.

Lectures in weeks 1 and 2 provide you with the fundamental skills to describe a data set graphically and numerically. The lecture in week 3 covers basic probability theory and continuous normal probability distributions. Understanding the normal probability distribution is important as it sets foundations for statistical inference covered in the subsequent weeks of the course.

The concepts of statistical inference and sampling distributions will be introduced in week 4. In weeks 5 to 7 you will then learn to apply the knowledge of statistical inference to estimate confidence intervals and to test pre-determined hypotheses.

Weeks 8-10 focus on correlation and regression analysis. Regression analysis is a method that is useful to analyse the relationship between variables of interest.

In week 11, you will learn to calculate and interpret index numbers. Index numbers are measurements that are useful to summarise a large body of data with a single number.

Finally in week 12, a review of all materials studied in the previous weeks will be delivered to provide guidelines for the preparation of the final exam.

### Weekly Teaching Schedule

| Week | Topic  | Activity | Readings   |
|------|--|----------|--|
|      | Introduction to Statistics & Graphical Descriptive Methods                                   | Lecture  | BS: Chapter 1, Chapter 2-section 2.1 and 2.5 only, Chapter 3-omit section 3.4, and Chapter 4-sections 4.1, 4.2 and 4.4 |
|      | Overview of course; basic overview of SPSS   | Workshop | Week 1 SPSS Lab Manual and Data Files  |
|      | Numerical Descriptive Measures   | Lecture  | BS: Chapter 5-omit "box plots" in section 5.3 and omit section 5.5   |
|      | BS Exercises: 1.1, 1.2, 2.4, 2.5, 3.3, 3.4, 4.5(excluding part (a)), 4.26, 4.36              | Tutorial |  |
|      | SPSS – Descriptive Statistics (Graphical Summaries)  | Workshop | Week 2 SPSS Worksheet (LAB 1)  |
|      | Continuous Probability Distributions, Normal and Standard Normal Distributions.              | Lecture  | BS: Chapter 8-section 8.3 only   |
|      | BS Exercises: 5.2, 5.6, 5.26, 5.34, 5.53, 5.54   | Tutorial |  |
|      | SPSS – Descriptive Statistics (Numerical Summaries)  | Workshop | Week 3 SPSS Worksheet (LAB 2)  |
|      | Introduction to Statistical Inference and Sampling Distributions                             | Lecture  | BS: Chapter 9  |
|      | BS Exercises: 8.9, 8.10, 8.12, 8.14, 8.16, 8.18(a only), 8.49                                | Tutorial |  |
|      | EXAM 1 during workshop   | Workshop |  |
|      | Confidence Interval Estimation (part 1)  | Lecture  | BS: Chapter 10   |
|      | BS Exercises: 9.2, 9.3, 9.4, 9.13(a and c only), 9.18  | Tutorial |  |
|      | SPSS – Hypothesis Testing (Repeated Measures)  | Workshop | Week 5 SPSS Worksheet (LAB 3)  |
|      | Hypothesis Testing (-critical value method)  | Lecture  | BS: Chapter -12 omit section 12.5  |
|      | BS Exercises: 10.3, 10.6, 10.7, 10.8, 10.18, 10.49, 10.51, 10.59, 10.64, 10.73, 10.75, 10.76 | Tutorial |  |
|      | SPSS – Hypothesis Testing (Independent Samples)  | Workshop | Week 6 SPSS Worksheet (LAB 4)  |
|      | Hypothesis Testing (-p-value method)   | Lecture  | BS: Chapter - 12omit section 12.5  |
|      | Revision for Mid-Trimester Exam  | Tutorial |  |
|      | Revision for Mid-Trimester Exam  | Workshop |  |

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| 8 | Correlation, Simple Linear Regression (Part 1)  | Lecture     | BS: Chapter - 15- omit section 15.7                         |
|   | BS Exercises: 12.1, then, using critical value method, 12.4, 12.5, 12.6, 12.11, 12.14, 12.47, 12.48, , 12.73, 12.78 | Tutorial    |   |
|   | SPSS – Confidence Intervals   | Workshop    | Week 8 SPSS Worksheet (LAB 5)                               |
|   | Exam 2 (Mid Exam) to be conducted on Monday evening this week   | Examination |   |
|   | Correlation, Simple Linear Regression (part 2)  | Lecture     | BS: Chapter 15-omit section 15.7; Notes published on portal |
|   | BS Exercises: using p-value method 12.27, 12.11, 12.14, 12.73, 12.78  | Tutorial    |   |
|   | SPSS – Correlation  | Workshop    | Week 9 SPSS Worksheet (LAB 6)                               |
|   | Correlation Simple Linear Regression (Part 3)   | Lecture     |   |
|   | Lecture Exercise  | Lecture     | Example published on portal                                 |
|   | Revision for computer exam  | Tutorial    | SPSS – Practice Computer Exam                               |
|   | Revision for computer exam  | Workshop    |   |
|   | Index Numbers   | Lecture     | BS: Chapter - 18 omit sections 18.4 and 18.5                |
|   | BS Exercises: 15.12, 15.13, 15.34, 15.35  | Tutorial    |   |
|   | SPSS COMPUTING EXAM   | Workshop    |   |
|   | Revision for Final Exam   | Lecture     | Practice Questions for Final Exam                           |
|   | BS Exercises: 18.3, 18.9  | Tutorial    | Practice Questions for Final Exam                           |

## Assessment

This section sets out the assessment requirements for this course.

### Summary of Assessment

| Item | Assessment Task   | Weighting | Relevant Learning Outcomes | Due Date    |
|------|-------------------|-----------|----------------------------|-------------|
| 1    | EXAM 1            | 10%       | 1,2                        | 4           |
| 2    | EXAM 2 (Mid Exam) | 25%       | 1,2,3                      | 8           |
| 3    | COMPUTING EXAM    | 20%       | 3,4,5,6                    | 11          |
| 4    | FINAL EXAM        | 45%       | 3,4,6                      | Exam Period |

### Assessment Details

1. Exam 1 will be held in week 4 during your scheduled computer workshop time. NOTE: Exam 1 is not a computing assessment. It consists of multiple choice and short answer questions that are to be solved manually using a calculator. Exam 1 is worth 10% of the assessment of the course and examines materials taught in lectures weeks 1 and 2.

2. Exam 2 (Mid Exam) will be held on the Monday evening in Week 8 (time and venue to be advised by your lecturer in week 5). It consists of both multiple-choice and short answer questions covering the materials taught in lectures from weeks 3 to 5 inclusively. The mid- trimester exam is worth 25% of the assessment of the subject. The exam involves both theoretical and calculation questions.

3. The computing exam will be held in week 11 during your scheduled workshop time. It consists of a number of short answer questions involving calculations and interpretations that are to be solved using SPSS. All materials covered during the computing workshops are examinable. The computing exam is worth 20% of the assessment of the course.

4. The final exam consists of a number of multiple-choice and practical short answer questions. To be successful in this exam, you need to have a solid understanding of all topics covered in the course. The exam however will mainly examine lecture materials taught in weeks 6 to 11 inclusively. The final exam is worth 45% of the assessment of the course. The exam will involve theoretical, interpretation and calculation questions.

NOTE: To obtain a minimum pass grade for the course you will have to achieve an overall combined result from all assessments of 50%.

### Submission and Return of Assessment Items

Normally you will be able to collect your assignments in class within fourteen [14] days of the due date for submission of the assignment.

### Retention of Originals

You must be able to produce a copy of all work submitted if so requested. Copies should be retained until after the release of final results for the course.

**Extensions**

To apply for an extension of time for an assignment, you must submit an Application for Extension of Assignment form to your teacher at least 24 hours before the date the assignment is due. Grounds for extensions are usually: serious illness, accident, disability, bereavement or other compassionate circumstances and must be able to be substantiated with relevant documentation [e.g. Griffith College Medical Certificate]. Please refer to the Griffith College website - Policy Library - for guidelines regarding extensions and deferred assessment.

**Assessment Feedback**

Marks awarded for in-trimester assessment items, except those being moderated externally with Griffith University, will be available on the Student Portal within fourteen [14] days of the due date. This does not apply to the final assessment item in this course (marks for this item will be provided with the final course result).

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**Generic Skills**

Griffith College aims to develop graduates who have an open and critical approach to learning and a capacity for lifelong learning. Through engagement in their studies, students are provided with opportunities to begin the development of these and other generic skills.

Studies in this course will give you opportunities to begin to develop the following skills:

| Generic Skills                   | Taught | Practised | Assessed |
|----------------------------------|--------|-----------|----------|
| Written Communication            |        | Yes       | Yes      |
| Oral Communication               |        | Yes       |          |
| Information Literacy             | Yes    | Yes       | Yes      |
| Secondary Research               | Yes    | Yes       | Yes      |
| Critical and Innovative Thinking | Yes    | Yes       | Yes      |
| Academic Integrity               |        | Yes       | Yes      |
| Self Directed Learning           |        | Yes       | Yes      |
| Team Work                        |        | Yes       |          |
| Cultural Intelligence            |        | Yes       |          |
| English Language Proficiency     |        | Yes       |          |

**Additional Course Generic Skills**

| Specific Skills         | Taught | Practised | Assessed |
|-------------------------|--------|-----------|----------|
| Data Analysis           | Yes    | Yes       | Yes      |
| Spreadsheet Programming | Yes    | Yes       | Yes      |

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## **Additional Course Information**

### **Teacher and Course Evaluations**

Students generally find the topics on probability and inferential statistics to be fairly technical and rather challenging. They have however found that the extensive use of practical examples on the lecture summary notes and additional resources provided to be very useful to improve their learning.

Your feedback is respected and valued by your lecturers and tutors. You are encouraged to provide your thoughts on the course and teaching, both positive and critical, directly to your lecturer and tutor or by completing course and lecturer evaluations on the Griffith College portal whenever these are available.

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### **Academic Integrity**

Griffith College is committed to maintaining high academic standards to protect the value of its qualifications. Academic integrity means acting with the values of honesty, trust, fairness, respect and responsibility in learning, teaching and research. It is important for students, teachers, researchers and all staff to act in an honest way, be responsible for their actions, and show fairness in every part of their work. Academic integrity is important for an individual's and the College's reputation.

All staff and students of the College are responsible for academic integrity. As a student, you are expected to conduct your studies honestly, ethically and in accordance with accepted standards of academic conduct. Any form of academic conduct that is contrary to these standards is considered a breach of academic integrity and is unacceptable.

Some students deliberately breach academic integrity standards with intent to deceive. This conscious, pre-meditated form of cheating is considered to be one of the most serious forms of fraudulent academic behaviour, for which the College has zero tolerance and for which penalties, including exclusion from the College, will be applied.

However, Griffith College also recognises many students breach academic integrity standards without intent to deceive. In these cases, students may be required to undertake additional educational activities to remediate their behaviour and may also be provided appropriate advice by academic staff.

As you undertake your studies at Griffith College, your lecturers, tutors and academic advisors will provide you with guidance to understand and maintain academic integrity; however, it is also your responsibility to seek out guidance if and when you are unsure about appropriate academic conduct.

In the case of any allegation of academic misconduct made against a student he or she may request the guidance and support of a Griffith College Student Learning Advisor or Student Counsellor.

Please ensure that you are familiar with the [Griffith College Academic Integrity Policy](#); this policy provides an overview of some of the behaviours that are considered breaches of academic integrity, as well as the penalties and processes involved when a breach is identified.

For further information please refer to the Academic Integrity Policy on the Griffith College website – Policy Library.

### **Risk Assessment Statement**

There are no out of the ordinary risks associated with this course.

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