

Forensic Statistics – 7904

Unit Outline 2/2009

Faculty of Information Sciences & Engineering

University of Canberra

Australian Government Higher Education (CRICOS)
Registered Provider number: #00212K

This Unit Outline must be read in conjunction with:

- a) *Studying at the University of Canberra: A Guide to Policies and Procedures*, which sets out University-wide policies and procedures, including information on matters such as plagiarism, grade descriptors, moderation, feedback and deferred exams, and is available at <http://www.canberra.edu.au/student-services>
- b) *Guide to Student Services at the University of Canberra*, and is available at <http://www.canberra.edu.au/student-services>
- c) Any additional information specified in section 6f.

1: General Information

1a Unit title: *Forensic Statistics*

1b Unit number: 7904

1c Semester and year offered: *Semester 2, 2009*

1d Credit point value: 3

1e Unit level: 2

1f Name of Unit Convener and contact details (including telephone and email)

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1g Administrative contact details (including name, location, telephone and email)

Office: 11C15, 6201 2619, ise@canberra.edu.au

2: Academic Content

2a Unit description and learning outcomes

This unit introduces students to statistical techniques in a forensics context. The focus of the unit is the description and analysis of data with an emphasis on statistical methods used in forensics. Students are introduced to the statistical capabilities of Excel. Topics include graphs; measures of location and dispersion; probability; hypothesis testing; linear regression modelling; linear correlation; analysis of variance; Bayes Theorem and the prosecutor's and defender's fallacies.

A student will be expected to be able to understand the nature and consequences of natural variability in forensic data; express a problem in statistical terms; summarise data graphically and numerically, either manually or using Excel; test hypotheses in simple situations; model data by fitting straight lines; and understand the use of statistics in assessing evidence.

This unit primarily addresses the UC graduate attributes stated in the following terms.

1. Information Literacy and Numeracy

Graduates are expected to be able to locate, identify, collate, analyse, manipulate, evaluate, interpret and present information and numerical data.

2. Information and Communication Technology

Graduates are expected to be able to select and use appropriate information and communication technology to retrieve, manipulate and present information.

3. Problem Solving

Graduates are expected to be able to:

- (a) identify problems and analyse the main features of problems relevant to their professional field;
- (b) apply appropriate problem solving processes, arguments, critical and creative thinking;
- (c) implement and evaluate strategies for the resolution of problems;

2b Prerequisite

An introductory Statistics unit.

3: Delivery of Unit and Timetable

3a Delivery mode

This is an online unit. There is no attendance requirement at University, and all unit materials and assessments will be presented online.

3b Schedule of topics/lectures/tutorials/practicals/field classes by week

Week	Activity. Minor variations to the sequence of activities may occur.
1	Data types, location and dispersion
2	Probability
3	Normal distribution I
4	Nominal and ordinal association
5	Normal distribution II
6	Correlation
7	Regression and calibration
8	Mid-semester break
9	Mid-semester break
10	Evidence evaluation, conditional probability and Bayes Theorem
11	Relevance and evaluation examples
12	Errors in interpretation
13	DNA I and II
14	Sampling and sample size estimation
15	Principal components analysis

4: Unit Resources

4a Lists of required texts/readings

Lucy, D. (2005). *Introduction to Statistics for Forensic Scientists*. New York: Wiley.

Supplementary reading

Devore, J. and Peck, R. (2007). *Statistics: the Exploration and Analysis of Data*, 6th edition. New York: Thomson.

4b Materials and equipment

Scientific calculator.

4c Unit website

The unit website is accessed through Moodle.

5: Assessment

5a Assessment overview

Assessment Item (including exams held in the exam period)	Date	Weighting
Weekly tests	Every Sunday 11:55 pm	5% each: total 65%
Assignment	Due Friday 23 October	25%
Pertinent participation in online discussions	Assessed Friday 30 October	10%

All three assessment items must be satisfactory (submitted and received a mark of at least 40%) in order to pass the unit. Since there are 13 tests, the average mark of the tests must be at least 40% in order to pass the unit.

5b Details of each assessment item

As above.

5c Special assessment requirements

If you meet the condition for a pass, your grade will be awarded on the basis of a possibly scaled unit mark using the weightings given above. As a guide, grades consistent with the descriptors for P, CR, DI and HD are as follows:

Grade	<i>Numerical Equivalent</i>
HD	85 – 100
DI	75 – 84
CR	65 – 74
P	50 – 64

5d Supplementary assessment

Students are referred to the University policy at <https://guard.canberra.edu.au/cocoon/policydb/downloadSelect?DocumentReferenceId=388>.

5e Text-matching software

Students may be required to submit text-based assignments electronically to be checked for matching text. If so, instructions on how to do this and information about the process will be made available in conjunction with the first of any such assessment items.

6: Student Responsibility

6a Workload

The amount of time you will need to spend on study in this Unit will depend on a number of factors including your prior knowledge, learning skill level and learning style. Nevertheless, in planning your time commitments you should note that for a 3cp Unit the total notional workload over the fifteen week semester is assumed to be 150 hours or an average of 10 hours per week. These hours include time spent in classes. The total workload for Units of different credit point value should vary proportionally. For example, for a 6cp Unit the total notional workload over a fifteen week semester is assumed to be 300 hours or an average of 20 hours per week.

6b Special needs

Students who need assistance in undertaking the unit because of disability or other circumstances should inform their Unit Convener or the Disabilities Office as soon as possible so the necessary arrangements can be made.

6c Attendance requirements

Attendance at lectures and tutorials is not a condition for receiving a Pass grade or better.

6d Required IT skills

Some familiarity with basic computer use is assumed.

6e Costs

Purchase of the textbook and some printing costs are possible. You will be expected to have or to purchase a basic scientific calculator.

6f Additional information

None

7: Student Feedback

All students enrolled in this Unit will have an opportunity to provide anonymous feedback on the Unit at the end of the Semester via the Unit Satisfaction Survey which will be presented to you on OSIS. Your lecturer or tutor may also invite you to provide more detailed feedback on their teaching through an anonymous in-class questionnaire administered through the University's Teaching and Learning Centre (TLC).

8: Authority of this Unit Outline

Any change to the information contained in Section 2 (Academic content), Section 3 (Delivery of Unit and timetable) and Section 5 (Assessment) of this document, will only be made by the Unit Convener if the written agreement of staff and a majority of students has been obtained; and if written advice of the change is then forwarded to each student enrolled in the Unit at their registered term address. Any individual student who believes him/herself to be disadvantaged by a change is encouraged to discuss the matter with the Unit Convener.