



BCA STUDENT RESOURCES – TEXTBOOKS AND SOFTWARE GUIDE

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A few notes about your distance education requirements

The BCA program is delivered by distance means. **Access to a computer and the internet are essential study requirements.**

An **online learning management system (eLearning, trade name Canvas)** is the main teaching tool. It is used for a variety of functions, including as an access point for study notes and materials, and importantly for people studying by distance, a communication tool for student/student and student coordinator discussions. Hard copy materials may also be sent by post. Email is also used on occasion, particularly as the first point of contact from the BCA coordinating office and unit coordinators

See page **6** for a full listing of software requirements per unit of study. At least one of the listed **Software packages** is required for most units. Stata and/or R are used in a number of units, and R and Stata are compulsory for the unit Data Management and Statistical Computing [DMC].

Where textbooks are compulsory for particular units, they are listed in the tables below. Some strongly recommended texts are also listed.

Please note that it's important to buy study resources as soon as possible.

As most students will be buying textbooks remotely, there are likely to be delays while materials are posted and in some cases, shipped. When buying books online, you should check whether publishers/retailers are in your home country or, if not, ship to it. Where available, you may find eBook versions. In the case of software.

More resources are available in [Student Resources](#) on the BCA website, including the **BCA Program Outline** which contains further details about the curriculum, unit of study content, pre/co-requisites, study requirements and delivery centres.

Unit coordinators are listed [here](#).

TEXT BOOK DETAILS semester 1							
UNIT of study	Title	Version	Compulsory / recommended	Author/s	Publisher	Year	ISBN
Epidemiology (EPI)	See note: 7, p4		As prescribed by university	See note: 6, p4 for details of compulsory text for EPI at The University of Queensland.			
Mathematical Background for Biostatistics (MBB)	Calculus Early Transcendentals <i>See note 2.1, p 4 for edition advice & Student Companion Site</i>	11 th edition	compulsory	Anton H, Bivens I, Davis S	Wiley	2016	9781118883822 E-Text: 9781118-884126
	Elementary Linear Algebra OR...	11 nd edition	compulsory	Anton, Howard	Wiley	2013	9781118473504
	Elementary Linear Algebra: Applications Version	11 nd edition		Anton H and Rorres C		2014	<i>See note 2.2 p4</i>
Data Management & Statistical Computing (DMC)	R: <i>Introductory Statistics with R</i>	2nd edition	Compulsory	Peter Dalgaard	Springer	2008	9780387790534 E-Text: 9780387790541
	Stata: An Introduction to Stata for Health Researchers <i>See note 3.ii, p 4</i>		compulsory	Svend Juul, Morten Frydenberg	Stata Press	2014	9781597181358
Probability & Distribution Theory (PDT)	Mathematical Statistics with Applications (DO NOT BUY THE INTERNATIONAL EDITION) <i>See note 4, p 4</i>	7 th edition	compulsory	Wackerly DD, Mendenhall W, Scheaffer RL	Brooks/Cole, Cengage Learning	2007	9780495110811 (ENSURE YOU BUY THIS ISBN) <i>See note 4, p 4</i>
Health Indicators & Health Surveys (HIS)	Sampling of Populations: Methods and Applications	4 th edition	compulsory	Paul S. Levy, Stanley Lemeshow	Wiley Interscience	2008	9780470040072
Survival Analysis (SVA)	Applied Survival Analysis <i>See note 3.ii, p 4</i>	2 nd edition	compulsory	Hosmer D.W., Lemeshow S., May S.	Wiley Interscience	2008	9780471754992
	An Introduction to Survival Analysis Using Stata	3 rd edition	recommended	Cleves M, Gould W, Gutierrez R, Marchenko Y	Stata Press	2010	9781597180740
Principles of Statistical Inference (PSI)	Inference Principles for Biostatisticians	1 st edition	compulsory	Marschner IC	Chapman & Hall / CRC Press	2014	9781482222234
Longitudinal & Correlated Data (LCD)	Applied Longitudinal Analysis	2 nd edition	recommended	Fitzmaurice G, Laird N, Ware J	John Wiley and Sons	2011	9780470380277

TEXT BOOK DETAILS semester 2							
UNIT of Study	Title	Version	Compulsory / recommended	Author/s	Publisher	Year	ISBN
Epidemiology (EPI)	<i>See note: 7, p4</i>		As prescribed by university	See note: 6, p4 for details of compulsory text for EPI at The University of Queensland.			
Mathematical Background for Biostatistics (MBB)	Calculus Early Transcendentals <i>See note 2.1 p4 for edition advice</i>	11 th edition	compulsory	Anton H, Bivens I, Davis S	Wiley	2016	978111888382-2 E-Text: 9781118-884126
	Elementary Linear Algebra <i>See note 2.2 p4 for edition advice</i> OR...	11th edition	compulsory	Anton, Howard	Wiley	2013	9781118473504
	Elementary Linear Algebra: Applications Version	11th edition		Anton H and Rorres C		2014	<i>See note 2.2 p4</i>
Data Management & Statistical Computing (DMC)	R: <i>Introductory Statistics with R</i>	2 nd edition	Compulsory	Peter Dalgaard	Springer	2008	9780387790534 E-Text: 9780387790541
	Stata: An Introduction to Stata for Health Researchers <i>See note 3.ii, p 4</i>		compulsory	Svend Juul, Morten Frydenberg	Stata Press	2014	9781597181358
Probability & Distribution Theory (PDT)	Mathematical Statistics with Applications (DO NOT BUY THE INTERNATIONAL EDITION) <i>See note 4, p 4</i>	7 th edition	compulsory	Wackerly DD, Mendenhall W, Scheaffer RL	Brooks/Cole, Cengage Learning	2007	9780495110811 (ENSURE YOU BUY THIS ISBN) <i>See note 4, p 4</i>
Principles of Statistical Inference (PSI)	Inference Principles for Biostatisticians	1 st edition	compulsory	Ian C. Marschner	Chapman & Hall / CRC Press	2014	9781482222234
Design of Randomised Controlled Trials (DES)	Introduction to Randomized Controlled Clinical Trials	2 nd edition	compulsory	Matthews JNS	Chapman and Hall / CRC Press	2006	P/back: 9781584886242 eBook: 9781420011302
Categorical Data & GLMs (CDA)	<i>See note: 1, p4</i>		No compulsory text book				
Bayesian Statistical Methods (BAY)	Bayesian Data Analysis	3 rd edition	compulsory	Gelman A, Carlin JB, Stern HS, Dunson DB, Vehtari A, Rubin DB	CRC Press / Taylor and Francis / Chapman and Hall	2014	9781439840955
Bioinformatics and Statistical Genomics (SGX)	Handbook of Statistical Genomics <i>6, p4</i>	4 th edition	compulsory	Eds: Balding, Marioni and Moltke	Wiley	2019	9781119429258

TEXTBOOKS – notes to the tables on pages 2 and 3 (see pictures of books and supplier notes on page 5)

1. **'Recommended' textbook listings:** Some recommended references are listed above. Other texts may be recommended in Study Guides provided by unit coordinators.

2. **MBB textbooks:**

2.1 *Calculus Early Transcendentals, 11th Edition*, Anton et al.

There are a number of similar editions. Be sure to search by the ISBN number. See the entries for this book on pages 2 and 3.

It can be found on the [companion website](#), [Australian distributor](#)

It is also available from university bookshops, from Jacaranda Wiley Ltd (1800 777 474) or online from [booktopia.com.au](#) or [fishpond.com.au](#) or [amazon.com](#) or via [www.addall.com](#).

Be sure you have the correct version: the ISBN identifies the right one.

2.2 *Elementary Linear Algebra*

There are two versions of this textbook, the standard one and the "Application version". We will use the former (ISBN: 9781118473504) and will not need the latter, but you can buy the one you prefer. The only difference is that the "Applications Version" has additional material at the end that we do not use. The first part is common to both versions, so the paragraph and the exercise numbers are the same. As a further note, the eText referenced on pp2 and 3 is only available as "Application version" (hardcover ISBN: 9781118473504; ISBN: eText ISBN: 9781118878767).

[Australian distributor](#)

It is also available from university bookshops, from Jacaranda Wiley Ltd (1800 777 474) or online from [fishpond.com.au](#) or [amazon.com](#) or via [www.addall.com](#).

If you want the cheapest price, be sure you buy the correct version, not "Applications Version". The ISBN identifies the right ones.

If buying textbooks directly from Wiley, please note that the ISBN numbers may have been changed (same version with some additional WileyPlus features). WileyPlus versions are ok to purchase but the bonus WP online features in these additions are not relevant for BCA MBB.

3. **DMC textbooks and software:** If you have not used R or Stata previously, it is recommended that you have access to the text for the relevant software.

3.i **R textbook**

DMC: *Introductory Statistics with R.*

A free download of this text should be available to University students.

3.ii **Buy Stata text books from [Stata Bookstore](#).**

DMC: *[An Introduction to Stata for Health Researchers](#)*

SVA: *[Applied Survival Analysis](#)*

[An Introduction to Survival Analysis Using Stata](#)

Stata Software compatibility: DMC has a minimum requirement of Stata version 12, with 14 or 15 preferred.

4. **PDT textbook:** *There are multiple printings of this textbook, each with a different ISBN. Make sure you purchase the textbook with the designated ISBN.* "International" editions have been published outside of the US. These editions do not correspond to study note references. There are multiple versions and page numbers are different in each version, and questions are not numbered in the same order.

5. **BAY textbook:** Note: Students will be able to do BAY provided they have a copy of either the 2nd Edition or 3rd Edition of Bayesian Data Analysis. If they have neither they should buy the 3rd Edition. BAY is not offered in 2019.

6. **SGX textbook:** This is an expensive reference that few will be able to buy, but online access should be available through your university library; if not, arrangements will be made by unit coordinators.

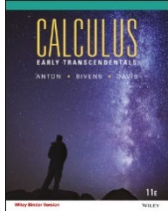
7. **EPI at University of Queensland:** "Essential Epidemiology: An introduction for students and health professionals", by Webb and Bain, 3rd edition, 2016, (Cambridge University Press), ISBN 9781107529151

BUYING TEXTBOOKS

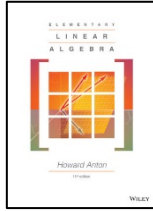
Compulsory texts

MBB

Early Transcendentals



Elementary Linear Algebra

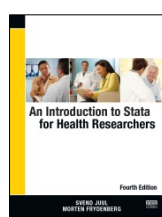


DMC:

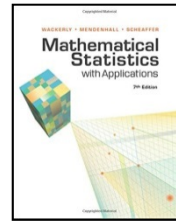
R



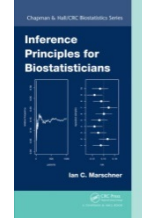
Stata



PDT



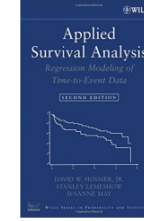
PSI



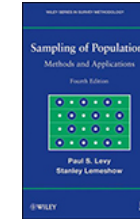
DES



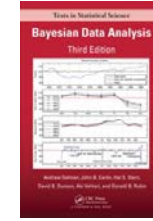
SVA



HIS



BAY



CO-OP BOOKSHOP: If you are unable to buy compulsory books locally, you can order them (except Stata Press books*) through the Co-op Bookshop website. *Hard copies of all **compulsory** textbooks are ordered for the current semester. *E-Texts are not stocked by the Co-op.

Order online at www.coop.com.au To find a book in the Coop site, click on the **Textbook Search** button; in the **Step 1** field, choose *Biostatistics Collaboration of Australia (BCA)*; in **Step 2**, choose the relevant semester; and in **Step 3**, select the relevant BCA unit name (each unit name will be prefaced with a University of Sydney [BSTA] code, for USyd student and Coop Bookshop reference only).

Discounts for members vary between 5-10%. Apply on the CO-OP website.

Coop Bookshop contact: Academic Sales

02- 8935 8260 academicsales.sydney@coop.com.au

(When making enquiries to the shop, quote the BCA unit ID [eg MBB], not the university one, as their orders are listed by these generic IDs to suit the inter-university student cohort.)

OTHER SUPPLIERS: If you are unable to find the book locally or via the Co-op Bookshop, suppliers can be found online by doing a search on the ISBN number. Some suggested sources are listed below.

Amazon is a reliable source: [Textbooks](https://www.amazon.com.au/textbooks)

If you are willing to pay \$35 USD you can get books couriered in about 3-4 days. Second-hand copies are often listed.

DA Information Services in Melbourne: www.dadirect.com.au Books have not been ordered by the BCA from these suppliers but may have been by Melbourne Universities.

2ND-HAND BOOKS: [Abe Books](http://www.abebooks.com)

This site has a good international cooperative textbook exchange.

Compare prices and delivery locations across vendors www.addall.com

SEARCHING FOR BOOKS ONLINE: Using the ISBN number to do a search is generally the quickest route and, where multiple editions exist, also the safest. ISBN numbers are listed in the far right-hand column of the tables on pages 2 and 3 of this Guide. **Tip:** If possible, order from suppliers that have an outlet in your home country as this will reduce postage times.

EBOOK VERSIONS of some textbooks are available. Even if you'd prefer to have a hardcopy, the (possibly) cheaper and more immediately available "e" version may be useful to fill the gap while you are waiting for the hard copy to arrive in the mail. Note that free 'trial' copies available from some suppliers may only contain extracts of the contents. Use the ISBN to search online for the latest releases.

...and, of course, you can always see whether you can pick up a bargain on eBay.

* **Stata Press** textbooks are available from surveydesign.com.au/statabooks.html or by calling 02 6247 0177

SOFTWARE REQUIREMENTS per unit of study

NB: Most units will accept R use, and provide guidance/code in the unit materials. More detailed notes will be provided in unit Study Guides.

Unit	Software	ACCESS
Epidemiology (EPI)	none	<p>Access to Stata</p> <p>You will need to buy the software directly from the distributors, Survey Design and Analysis Services <i>Guidelines for buying Stata can be found on page 8.</i></p> <p>Students should state that they are studying BCA courses.</p> <p>Access to R</p> <p>R can be downloaded free of charge from the R-project homepage.</p> <p>Details and FAQs on this software can be found here.</p> <p>Support for software in units of study</p> <p>Most units require the use of Stata and /or R statistical software. Unit coordinators may specify that students need to use either Stata or R or both for some, or all, of the unit. Software requirements are outlined in the unit description, published in the BCA Program Outline and university handbooks. Further details will be provided in unit Study Guides.</p> <p>If both packages are specified, information will be given on the extent to which help will be provided for each in the modules or sections in which they may be used. Generally one package will be recommended and supported while students may use another one if they choose, but are responsible for finding their own support for any difficulties they may encounter.</p> <p>If you don't have the required software on your home computer, you will need to be able to access it somewhere for at least a few hours throughout the semester.</p> <p>If you need further help, please contact the BCA coordinating office: (02) 9562 5076 bca@ctc.usyd.edu.au</p>
Mathematical Background for Biostatistics (MBB)	WolframAlpha used in this unit. There are no other software requirements.	
Probability & Distribution Theory (PDT)	Stata	
Health Indicators & Health Surveys (HIS)	R or Stata, Excel	
Data Management & Statistical Computing (DMC) DMC students please note: you will need R and Stata. Introductory modules on these packages are a compulsory element of the unit.	Stata and R	
Principles of Statistical Inference (PSI)	Stata	
Clinical Biostatistics (CLB)	Stata	
Design of Randomised Controlled Trials (DES)	Stata	
Linear Models (LMR)	Stata	
Categorical Data & GLMs (CDA)	Stata	
Survival Analysis (SVA)	Stata	
Statistical Genomics (SGX)	R freeware will be downloaded	
Longitudinal & Correlated Data (LCD)*	Stata	
Bayesian Statistical Methods (BAY)	Microsoft Excel, Stata, or R (for simple simulations) and Stan (mc-stan.org) for model fitting using MCMC routines.	
Bioinformatics and Statistical Genomics (SGX)	R	

BUYING STATA FOR BCA UNITS OF STUDY

You will need to buy Stata directly from the supplier, available to students at heavily discounted prices. Place your order via the [Survey Design website](#)

Options and prices for [student download licences](#) are available on the website.

The BCA recommendation is for the first option, **Stata/IC**. Students are likely to be using the software for at least 3 years so they should buy the perpetual edition.

Stata/IC – suitable for medium size datasets

Available as

- 6 month expiring edition
- 12 month expiring edition
- Perpetual edition***

Stata/SE – suitable for large datasets

- 6 month expiring edition
- 12 month expiring edition
- Perpetual edition*

Stata/MP2 – for those wanting faster processing

- 12 month expiring edition
- Perpetual edition*

Stata/MP4 – for fast processing of complex analyses

- 12 month expiring edition
- Perpetual edition*

* Perpetual licences never expire. You can use them forever.

Note that many computers available on the market today have dual core or quad core processors and can effectively make use of Stata/MP2 or Stata/MP4 for fast analysis of large datasets.

The current release of Stata will run on Windows, Apple OSX and Linux operating systems. Typical delivery of software is via download only, although you can order a DVD for an extra charge if you wish. Each licence comes with 16,000+ pages of manual documentation in 26 volumes, provided in a PDF format.

With a Stata student licence you may upload the Stata software on up to three (3) of your own computers, regardless of operating system, for your own personal use. These licences cannot be shared.

Please note:

- To purchase Stata at these discounted prices you must use your *university email address* to order the software and quote your student number. The software will be delivered following receipt of payment. It will be delivered to your quoted university email address.
- Payment must be made at the time of placing the order on the website. Payment options available are Direct Deposit, Credit Card payment over the telephone, credit card via PayPal or PayPal.
- Prices include 10% GST and are subject to change without notice.