

BSc (External) in Applied Data Analytics

Handbook
2026

DEPARTMENT OF STATISTICS
FACULTY OF SCIENCE
UNIVERSITY OF COLOMBO

Department of Statistics
Faculty of Science
University of Colombo



HANDBOOK

Academic Year - 2026

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Faculty of Science, University of Colombo

VISION and MISSION Statement

VISION

The Faculty of Science to
be a center of scientific and
technological excellence
nationally and
internationally.

MISSION

To develop honest, adaptable,
productive citizens with
multidisciplinary knowledge, creative
thinking & analytical skills; with a high
degree of civic consciousness. To
articulate and promote interaction with
the public and private sector; and
society at large, with the view to
contributing towards the development
of the nation. To institute mechanisms
for partnership programmes for
improving resources and infrastructure
facilities.

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1 Introduction

The aim of the BSc in Applied Data Analytics (External) degree programme is to produce excellent professional data analysts with the essential skills and knowledge in data collection, data management, data visualization, statistical modeling, and machine learning. The degree programme is based on three main areas: Statistics, Mathematics, and Information Technology. Students will be given hands-on experience of problem-solving and data-driven decision-making in this degree programme.

2 Rationale

With the vast amount of data collection that has taken place over the past decade, the importance of data and data analytics needs have emerged in every industry in the world. As a result, a rapid growth in the data related job market has been created allowing applied data analysts to play an integral part of many organizations. There are many career opportunities associated in this area such as Data Analyst, Data Scientist, Financial Analyst, Quantitative Analyst, and many more.

In order to cater to this demanding area, knowledge on various methods of collecting, managing, and integrating data using the data to extract insights with the use of various statistical methods and analytics, and using data for decision making of an industry are much needed. The Applied Data Analytics external degree programme is structured to provide this much needed knowledge, while creating many opportunities in the industry that encourages people to consider it an area worth learning.

3 Eligibility Criteria

G.C.E. Advanced Level Examination (New Syllabus) – Three passes in one sitting, including Combined Mathematics or Higher Mathematics or Mathematics as a subject.

OR

G.C.E. Advanced Level Examination (Old syllabus) – Three passes in one sitting, including Applied Mathematics or Pure Mathematics as a subject.

OR

Any other equivalent professional qualification acceptable to the faculty and the senate.

*The candidates will be selected based on a screening test, followed by an interview.

4 Evaluation Criteria

The theory course modules are evaluated through written examinations and/or assignments where appropriate. Laboratory course modules are evaluated by assignments and/or semester-end examinations. In some instances, course units may require a mixed-mode evaluation including continuous assessments.

5 Scheme of Evaluation

The Grade Point Average (GPA) is computed using grades assigned for all courses, including the research project. The minimum grade a student should achieve to pass a course unit is C. The grades shall be assigned as shown in 5.1

5.1 Grade Points and GPA

The Grade Points shall be assigned using the following table.

Marks Range	Grade	Grade Point
85-100	A+	4.00
70-84	A	4.00
65-69	A-	3.70
60-64	B+	3.30
55-59	B	3.00
50-54	B-	2.70
45-49	C+	2.30
40-44	C	2.00
35-39	C-	1.70
30-34	D+	1.30
25-29	D	1.00
00-24	E	0.00

The GPA shall be computed using the following formula:

$$GPA = \frac{\sum_i w_i g_i}{\sum_i w_i}$$

where, w_i = number of credit units for the i^{th} course

g_i = grade points for the course

5.2 Grading system for enhancement/ intensive courses

Enhancement/ intensive courses carry only a letter grade as specified below and do not carry a Grade Point Value.

Marks Range	Letter Grade	Attainment
70-100	H	Honors
55-69	M	Meritorious
40-54	S	Satisfactory
00-39	U	Unsatisfactory

5.3 Repeat Examinations

- i. If a student fails an examination, he/she shall repeat the entire examination or the required part at the next available opportunity. Candidates are allowed to repeat an examination only for two attempts.
- ii. A student obtaining a grade below C may re-sit the course examination for the purpose of improving the grade. The grades obtained in the first and subsequent attempts shall all be listed in the academic transcript. The highest grade obtained is used for the calculation of the final GPA. However, the highest grade considered for the determination of the award of a class is C.
- iii. If a student is absent for the final examination of a course, AB (Absent) shall be assigned instead of a grade.
- iv. If a student obtains an AB (absent) at the first attempt of the examination, then the next attempt shall be considered as the first attempt.

5.4 Maximum Allowed Period

The maximum stipulated period of the Programme of Study leading to the Bachelor of Science (External) Degree is nine (09) academic years from first registration.

6 Certificate/Diploma/Degree Awarding Criteria

6.1 Level I – Certificate

(a) Completion of a minimum of thirty (30) credits in Level I,

AND

(b) Obtaining a grade not lower than C in course units aggregating to at least twenty (20) credits in Level I,

AND

(c) Obtaining an overall GPA of 2.0 or above in Level I.

6.2 Level II – Certificate

(a) Meet requirements for Level I Certification,

AND

(b) Completion of a minimum of sixty (60) credits with at least 30 credits from Level II,

AND

(c) Obtaining a grade not lower than C in course units aggregating to at least twenty (20) from Level II,

AND

(d) Obtaining an overall GPA of 2.0 or above in Level II.

6.3 Diploma (SLQF Level 3)

(a) Completion of a minimum of thirty (30) credits of the course units in Level I,

AND

(b) Obtaining a grade not lower than C in course units aggregating to a total of 20 credits for the specified set of Level I courses indicated by * in section 08,

AND

(c) Obtaining an overall GPA of 2.0 or above.

6.4 Advanced Diploma (SLQF Level 4)

(a) Completion of a minimum of sixty (60) credits of the course units in Level I and Level II,

AND

(b) Obtaining a grade not lower than C in course units aggregating to a total of 40 credits for the specified set of Level I and Level II course units indicated by * in section 08,

AND

- (c) Obtaining an overall GPA of 2.0 or above for the sixty (60) credits for Level I and Level II course units.

6.5 Degree (SLQF Level 5)

- (a) Completion of a minimum of ninety (90) credits with at least thirty (30) credits from each of Level I, Level II, and Level III.

AND

- (b) Obtaining a minimum GPA of 2.0 in course units aggregating to at least twenty (20) credits at each of Level I, Level II, and Level III.

AND

- (c) Obtaining a minimum overall GPA of 2.0 in Level I, Level II, and Level III taken together.

7 Awarding Classes

If a student satisfies the requirements for obtaining a degree within three (03) consecutive academic years of the External Degree Programme.

AND

- **First Class:** If a student has a minimum overall GPA of 3.70.

OR

- **Second Class (Upper Division):** If a student has a minimum overall GPA of 3.30.

OR

- **Second Class (Lower Division):** If a student has a minimum overall GPA of 3.00.

8 Examination Offences

Examination offenses fall into any of the following misconducts that may be committed by students during the conduct of an examination.

- Possession of unauthorized documents and/or devices
- Removal of examination stationery from the examination hall
- Copying
- Obtaining or attempting to obtain improper assistance
- Cheating or attempting to cheat
- Impersonation
- Disorderly conduct
- Aiding and abetting the commission of any of the above offenses

When submitting reports/dissertations that will be evaluated (e.g., research projects, laboratory or field reports), committing plagiarism is considered a serious offense, equivalent to an examination offense. Plagiarism is:

- Submitting another person's work as your own
- Including another person's work (language, ideas, results, data, graphics, images, etc.) in your submissions without proper acknowledgment or citation
- Copying another person's paragraphs or sentences into your work without any changes, even when the sources are cited
- In cases where it is necessary to quote (copy word to word) a sentence or two of someone else's language, failure to put such sentences within quotation marks

Any candidate who is found guilty of an examination offense or plagiarism is liable to any one or more of the following punishments:

- Removal of his/her name from the pass list
- Cancellation of his/her candidacy from the whole or part of the examination
- Suspension from any University examination for such period as the Senate may decide, or indefinitely
- Suspension from the University for such Period as the Senate may decide, or expulsion from the University

9 The Program Learning Outcomes (PLOs)

- PLO1: Demonstrate the awareness of fundamental concepts and theories related to Data Analytics
- PLO2: Identify real-world problems which can be solved using appropriate techniques in data analysis
- PLO3: Design and implement methods for data collection
- PLO4: Apply appropriate data analysis techniques and utilize relevant software to organize, summarize and analyze the data in order to extract important information relevant to the problem
- PLO5: Validate, summarize, interpret, and communicate the results effectively both verbally and in writing
- PLO6: Apply data-driven approaches in real-life decision-making processes
- PLO7: Formulate solutions thinking critically, creatively, and globally

PLO8: Adapt to social, economic, and technological new environments

PLO9: Demonstrate skills to plan, organize, review, monitor, and evaluate independent lifelong learning for continuous self and professional development

PLO10: Demonstrate teamwork skills, social skills, and leadership skills

PLO11: Practice ethical standards and professional integrity

10 Programme Structure

Level I					
Semester	Course Code	Name of course unit	Credit Value	Status (Compulsory /Optional)	Existing/ New
1	DA 1001	Mathematics for Statistics I	2	Compulsory	New
1	DA 1002	Concepts in Probability	2	Compulsory	New
1	DA 1003	English for Academic Purposes	2	Compulsory	New
1	DA 1004	Principles of Management and Corporate Environment	2	Compulsory	New
1	DA 1005	Statistical Computing, I	2	Compulsory	New
1	DA 1006	Data Collection Methods I	2	Compulsory	New
1	DA 1007	Exploratory Data Analysis	2	Compulsory	New
2	DA 1008	Mathematics for Statistics II	2	Compulsory	New
2	DA 1009	Introduction to Random Variables	2	Compulsory	New
2	DA 1010	Introduction to Computing	2	Compulsory	New
2	DA 1011	Discrete Probability Distributions	2	Compulsory	New
2	DA 1012	Statistical Computing II	2	Compulsory	New
2	DA 1013	Continuous Probability Distributions	2	Compulsory	New
2	DA 1014	Information Retrieval and Communication Skills	2	Compulsory	New
2	DA 1015	Statistics Laboratory I	2	Compulsory	New

Level II					
Semester	Course Code	Name of course unit	Credit Value	Status (Compulsory /Optional)	Existing/ New
1	DA 2001	Python Programming	2	Compulsory	New
1	DA 2002	Operating Systems	2	Compulsory	New
1	DA 2003	Basic Statistical Inference	2	Compulsory	New
1	DA 2004	Database Management	2	Compulsory	New
1	DA 2005	Principles of Project Management & Marketing Research	2	Compulsory	New
1	DA 2006	Hypothesis Testing	2	Compulsory	New
1	DA 2007	Fundamentals of R	2	Compulsory	New
1	DA 2008	ICT in Business	2	Compulsory	New
2	DA 2009	Data Collection Methods II	2	Compulsory	New
2	DA 2010	Applied Regression Analysis	2	Compulsory	New
2	DA 2011	Machine Learning I	2	Compulsory	New
2	DA 2012	Applied Time Series Analysis	2	Compulsory	New
2	DA 2013	Data Management	2	Compulsory	New
2	DA 2014	Operational Research	2	Compulsory	New
2	DA 2015	Statistics Laboratory II	2	Compulsory	New

Level III					
Semester	Course Code	Name of course unit	Credit Value	Status (Compulsory /Optional)	Existing/ New
1	DA 3001	SQL for Data Analytics	2	Compulsory	New
1	DA 3002	Seminars	2	Compulsory	New
1	DA 3003	Modern Techniques in Data Visualization	2	Compulsory	New
1	DA 3004	Generalized Linear Models	2	Compulsory	New
1	DA 3005	Machine Learning II	2	Compulsory	New

1	DA 3006	Missing Data Analysis	2	Compulsory	New
1	DA 3007	Capital Markets and Risk Management	2	Compulsory	New
2	DA 3008	Big Data Analytics	2	Compulsory	New
2	DA 3009	Artificial Intelligence	2	Compulsory	New
2	DA 3010	Data Ethics and Security	2	Compulsory	New
2	DA 3011	Text Mining	2	Compulsory	New
2	DA 3012	Applied Multivariate Data Analysis	2	Compulsory	New
2	DA 3013	Principles of Professional Practice and Ethics	2	Compulsory	New
2	DA 3014	Statistics Laboratory III	4	Compulsory	New

11 Academic Staff

- **Key Programme Staff**



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