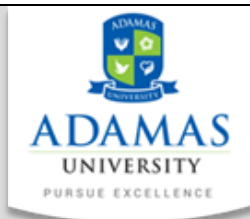


ADAMAS UNIVERSITY
SCHOOL OF BASIC AND APPLIED SCIENCES
DEPARTMENT OF MATHEMATICS

COURSE STRUCTURE OF
B.SC. (HONS) STATISTICS AND DATA ANALYTICS
PROGRAMME

ACADEMIC YEAR 2022-23



SCHOOL OF BASIC AND APPLIED SCIENCES

B.Sc. (Hons) Statistics and Data Analytics

SEMESTER I

| SL. No. | TYPE OF COURSE | COURSE CODE | TITLE OF THE COURSE | CONTACT HOURS PER WEEK | | | | REMARKS |
|---------------------|---------------------|-------------|----------------------------------|------------------------|---|---|----|---------|
| | | | | L | T | P | C | |
| 1 | CORE | MTH11033 | CALCULUS | 3 | 0 | 0 | 3 | |
| 2 | | SDS11072 | PROBABILITY THEORY | 2 | 1 | 0 | 3 | |
| 3 | | SDS11001 | DESCRIPTIVE STATISTICS | 3 | 1 | 0 | 4 | |
| 4 | | SDS12002 | DESCRIPTIVE STATISTICS PRACTICAL | 0 | 0 | 3 | 2 | |
| 5 | FOUNDATION | ENG11057 | ENGLISH LANGUAGE AND LITERATURE | 2 | 0 | 0 | 2 | |
| 6 | GEN. ELECTIVE | | ELECTIVE (THEORY) | 3 | 1 | 0 | 4 | |
| 7 | | | ELECTIVE (PRACTICAL) | 0 | 0 | 3 | 2 | |
| 8 | VALUE ADDED COURSES | DGS11001 | DESIGN THINKING | 2 | 0 | 0 | 2 | |
| TOTAL CREDIT | | | | | | | 22 | |

[OPTIONS: ELECTIVE PROGRAMMING LANGUAGE I (CSE11655), ELECTIVE PROGRAMMING LANGUAGE I LAB (CSE12656), ELECTIVE CHEMISTRY I (CHM11151) & ELECTIVE CHEMISTRY I LAB (CHM12152)]

* For non-lab-based subjects total credit will be 6 for one paper (e.g., Economics, L-T-P: 5-1-0)

SEMESTER II

| SL. No. | TYPE OF COURSE | COURSE CODE | TITLE OF THE COURSE | CONTACT HOURS PER WEEK | | | | REMARKS |
|---------------------|---------------------|-------------|-------------------------------------|------------------------|---|---|----|---------|
| | | | | L | T | P | C | |
| 9 | CORE | SDS11073 | PROBABILITY DISTRIBUTIONS | 2 | 1 | 0 | 3 | |
| 10 | | SDS12074 | PROBABILITY DISTRIBUTIONS PRACTICAL | 0 | 0 | 3 | 2 | |
| 11 | | MTH11034 | REAL ANALYSIS | 3 | 0 | 0 | 3 | |
| 12 | | MTH11080 | LINEAR ALGEBRA | 3 | 1 | 0 | 4 | |
| 13 | FOUNDATION | EVS11112 | ENVIRONMENTAL SCIENCE | 2 | 0 | 0 | 2 | |
| 14 | GEN. ELECTIVE | | ELECTIVE (THEORY) | 3 | 1 | 0 | 4 | |
| 15 | | | ELECTIVE (PRACTICAL) | 0 | 0 | 3 | 2 | |
| 16 | VALUE ADDED COURSES | EIC11001 | VENTURE IDEATION | 2 | 0 | 0 | 2 | |
| TOTAL CREDIT | | | | | | | 25 | |

[OPTIONS: ELECTIVE PROGRAMMING LANGUAGE II (CSE11657), ELECTIVE PROGRAMMING LANGUAGE II LAB (CSE12658), ELECTIVE CHEMISTRY II (CHM11153) & ELECTIVE CHEMISTRY LAB II (CHM12154)]

* For non-lab-based subjects total credit will be 6 for one paper (e.g., Economics, L-T-P: 5-1-0)

SEMESTER III

| SL. No. | TYPE OF COURSE | COURSE CODE | TITLE OF THE COURSE | CONTACT HOURS PER WEEK | | | | REMARKS |
|---------|--------------------------------|-------------|--|------------------------|---|---|----|---------|
| | | | | L | T | P | C | |
| 17 | CORE | SDS11075 | SAMPLING THEORY | 2 | 1 | 0 | 3 | |
| 18 | | SDS11076 | STATISTICAL INFERENCE | 3 | 1 | 0 | 4 | |
| 19 | | SDS12077 | STATISTICAL INFERENCE PRACTICAL | 0 | 0 | 3 | 2 | |
| 20 | | SDS11078 | INDEX NUMBERS AND TIME SERIES ANALYSIS | 3 | 1 | 0 | 4 | |
| 21 | | SDS12079 | INDEX NUMBERS AND TIME SERIES ANALYSIS PRACTICAL | 0 | 0 | 3 | 2 | |
| 22 | SKILL ENHANCEMENT COURSE (SEC) | SDS13080 | R-PROGRAMMING | 1 | 0 | 3 | 3 | |
| 23 | GEN. ELECTIVE | | ELECTIVE (THEORY) | 3 | 1 | 0 | 4 | |
| 24 | | | ELECTIVE (PRACTICAL) | 0 | 0 | 3 | 2 | |
| 25 | VALUE ADDED COURSES | SOC14100 | COMMUNITY SERVICE | 0 | 0 | 1 | 1 | |
| 26 | VALUE ADDED COURSES | IDP14001 | INTER-DISCIPLINARY PROJECT | 0 | 0 | 3 | 3 | |
| | | | TOTAL CREDIT | | | | 28 | |

[OPTIONS: MICROECONOMICS (ECO11001)*, ELECTIVE PHYSICS I (PHY11015) & ELECTIVE PHYSICS LAB I (PHY12016)]

* For non-lab-based subjects total credit will be 6 for one paper (e.g., Economics, L-T-P: 5-1-0)

SEMESTER IV

| SL. No. | TYPE OF COURSE | COURSE CODE | TITLE OF THE COURSE | CONTACT HOURS PER WEEK | | | | REMARKS |
|---------|--------------------------------|-------------|--------------------------------------|------------------------|---|---|----|---------|
| | | | | L | T | P | C | |
| 27 | CORE | SDS11005 | LINEAR MODELS | 3 | 1 | 0 | 4 | |
| 28 | | SDS12006 | LINEAR MODELS PRACTICAL | 0 | 0 | 3 | 2 | |
| 29 | | CSE11646 | DATABASE MANAGEMENT SYSTEM | 3 | 1 | 0 | 4 | |
| 30 | | CSE12647 | DATABASE MANAGEMENT SYSTEM PRACTICAL | 0 | 0 | 3 | 2 | |
| 31 | | MTH11035 | DISCRETE MATHEMATICS | 3 | 0 | 0 | 3 | |
| 32 | SKILL ENHANCEMENT COURSE (SEC) | SDS13081 | PYTHON FOR DATA SCIENCE | 1 | 0 | 3 | 3 | |
| 33 | GEN. ELECTIVE | | ELECTIVE (THEORY) | 3 | 1 | 0 | 4 | |
| 34 | | | ELECTIVE (PRACTICAL) | 0 | 0 | 3 | 2 | |
| 35 | VALUE ADDED COURSES | PSG11021 | HUMAN VALUES AND PROFESSIONAL ETHICS | 2 | 0 | 0 | 2 | |
| | | | TOTAL CREDIT | | | | 26 | |

[OPTIONS: MACROECONOMICS (ECO11031)*, ELECTIVE PHYSICS II (PHY11024) & ELECTIVE PHYSICS II LAB (PHY12025)]

* For non-lab-based subjects total credit will be 6 for one paper (e.g., Economics, L-T-P: 5-1-0)

| SEMESTER V | | | | | | | | |
|-------------|----------------|-------------|---|------------------------|---|---|-----|---------|
| SL. NO. | TYPE OF COURSE | COURSE CODE | TITLE OF THE COURSE | CONTACT HOURS PER WEEK | | | | REMARKS |
| | | | | L | T | P | C | |
| 36 | CORE | MTH11036 | OPERATIONS RESEARCH | 3 | 1 | 0 | 4 | |
| 37 | | SDS11020 | DESIGN OF EXPERIMENTS AND MULTIVARIATE ANALYSIS | 3 | 1 | 0 | 4 | |
| 38 | | SDS12021 | DESIGN OF EXPERIMENTS AND MULTIVARIATE ANALYSIS PRACTICAL | 0 | 0 | 3 | 2 | |
| 39 | | CSE11650 | INTRODUCTION TO MACHINE LEARNING | 3 | 1 | 0 | 4 | |
| 40 | | CSE12651 | INTRODUCTION TO MACHINE LEARNING PRACTICAL | 0 | 0 | 3 | 2 | |
| 41 | | SDS11015 | EXPLORATORY DATA ANALYSIS AND VISUALIZATION | 3 | 1 | 0 | 4 | |
| 42 | | SDS12083 | EXPLORATORY DATA ANALYSIS AND VISUALIZATION PRACTICAL | 0 | 0 | 3 | 2 | |
| 43 | ELECTIVE | | DSE I | 3 | 1 | 0 | 4 | |
| 44 | | SDS14039 | SUMMER INTERNSHIP | - | - | - | 2 | |
| | | | TOTAL CREDIT | | | | 28 | |
| SEMESTER VI | | | | | | | | |
| SL. No. | TYPE OF COURSE | COURSE CODE | TITLE OF THE COURSE | CONTACT HOURS PER WEEK | | | | REMARKS |
| | | | | L | T | P | C | |
| 45 | CORE | SDS11084 | INTRODUCTION TO DATA MINING | 3 | 1 | 0 | 4 | |
| 46 | CORE | SDS12085 | INTRODUCTION TO DATA MINING PRACTICAL | 0 | 0 | 3 | 2 | |
| 47 | CORE | MTH11081 | INTRODUCTION TO DECISION SCIENCE | 3 | 1 | 0 | 4 | |
| 48 | ELECTIVE | - | DSE II | 3 | 1 | 0 | 4 | |
| 49 | ELECTIVE | - | DSE III (THEORY) | 3 | 1 | 0 | 4 | |
| 50 | ELECTIVE | | DSE III (PRACTICAL) | 0 | 0 | 3 | 2 | |
| 51 | | SDS15091 | PROJECT WORK | - | - | - | 8 | |
| | | | TOTAL CREDIT | | | | 28 | |
| | | | TOTAL (REQUIRED CREDIT) | | | | 154 | |

LIST OF 'DISCIPLINE SPECIFIC ELECTIVE PAPERS (DSE)' OFFERED BY THE DEPT. OF MATHEMATICS:

List of Elective Papers

| Electives | Paper Name | Paper Code | Credit | L-T-P |
|------------------|--|-------------------|---------------|--------------|
| DSE I | ECONOMETRICS | ECO11504 | 4 | 3-1-0 |
| | STATISTICAL QUALITY CONTROL | SDS11086 | 4 | 3-1-0 |
| | SOFT COMPUTING | MTH11038 | 4 | 3-1-0 |
| | DESIGN AND ANALYSIS OF ALGORITHM | CSE11659 | 4 | 3-1-0 |
| DSE II | DEMOGRAPHY AND SURVIVAL ANALYSIS | SDS11087 | 4 | 3-1-0 |
| | INTRODUCTION TO BIG DATA | CSE11652 | 4 | 3-1-0 |
| | INTRODUCTION TO FINANCIAL RISK ANALYTICS | SDS11088 | 4 | 3-1-0 |
| | ACTUARIAL STATISTICS | SDS11037 | 4 | 3-1-0 |
| DSE III | INTRODUCTION TO DEEP LEARNING | CSE11653 | 4 | 3-1-0 |
| | INTRODUCTION TO DEEP LEARNING PRACTICAL | CSE12654 | 2 | 0-0-3 |
| | DATA MANIPULATION AND DATA CLEANING IN R | SDS11030 | 4 | 3-1-0 |
| | DATA MANIPULATION AND DATA CLEANING IN R PRACTICAL | SDS12031 | 2 | 0-0-3 |
| | SURVEY SAMPLING | SDS11089 | 4 | 3-1-0 |
| | SURVEY SAMPLING PRACTICAL | SDS12090 | 2 | 0-0-3 |
| | INTRODUCTION TO NUMERICAL ANALYSIS | MTH11017 | 4 | 3-1-0 |
| | INTRODUCTION TO NUMERICAL ANALYSIS LAB | MTH12019 | 2 | 0-0-3 |