
SYLLABUS FOR BOARD OF STUDIES ADOPTION — generated from the live catalogue record

Laboratory Data Analysis and Scientific Reporting

X-S3 · 3 days (configurable 1–5 days) · Science & Food Technology · Applied Science · Years: 2nd, 3rd, PG

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OVERVIEW

Students turn raw laboratory measurements into sound analysis and a publishable report.

Employers and journals expect defensible data handling; graduates who can analyse lab data and report it correctly are ready for research and quality roles.

HOURS AND CREDIT POSITION

Contact hours: 24 Guided project: 6 Self-study: 0 Notional total: 30

Credit claim: 1

30 notional hours ÷ 30 hours per credit (NSQF track, UGC Micro-credentials Guidelines §5.3.3) = 1 credits.

COURSE OUTCOMES

CO1. Handle measurement error and significant figures correctly (K3)

CO2. Analyse laboratory data using descriptive statistics (K4)

CO3. Present data with appropriate graphs and fits (K3)

CO4. Interpret results against a hypothesis (K4)

CO5. Produce a scientific report with correct referencing (K5)

COURSE CONTENT — MODULES

Hours shown are the recommended format; module time scales proportionally when the engagement runs 1–5 days.

Module 1 — Data foundations (4h recommended)

Theory: Measurement, error, significant figures

Lab: Handle measurement uncertainty

Output: Uncertainty exercise

Module 2 — Data handling (4h recommended)

Theory: Recording, cleaning, spreadsheets

Lab: Clean a lab dataset

Output: Clean dataset

Module 3 — Statistical analysis (4h recommended)

Theory: Descriptive statistics, error analysis

Lab: Analyse lab data

Output: Statistical analysis

Module 4 — Graphing and presentation (4h recommended)

Theory: Plots, trends, curve fits

Lab: Plot and fit data

Output: Graphed results

Module 5 — Scientific reporting (4h recommended)

Theory: Structure, referencing, integrity

Lab: Draft a scientific report

Output: Report draft

Module 6 — Capstone (4h recommended)

Theory: An analysed dataset and a scientific report

Lab: Produce a full scientific report

Output: Scientific report

ASSESSMENT SCHEME (100 MARKS)

Continuous exercises — 40 marks

Analytical report — 40 marks

Viva voce — 20 marks

CO-PO MAPPING

CO1 !' PO1 (strength 2)

Measurement rigour is foundational scientific practice.

CO2 !' PO4 (strength 2)

Statistical analysis is investigation.

CO3 !' PO5 (strength 2)

Graphing tools are modern-tool usage.

CO4 !' PO4 (strength 2)

Interpreting against a hypothesis is investigation.

CO5 !' PO10 (strength 2)

The scientific report is professional communication.

EVERY PARTICIPANT RECEIVES

- Certificate of completion
- Course material
- LMS access
- Interview question bank
- Mock interview & viva practice

FEE

¹1,800 per student, incl. GST

Excludes the optional nasscom assessment where offered. Final pricing on your college's quotation.

DESIGNED BY

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