

LAMRIN TECH SKILLS UNIVERSITY PUNJAB
University School of Engineering and Technology (USET)
STUDY SCHEME | B.Tech CSE with Data Science Specialization

PROGRAMME DETAILS

Programme Name	B.Tech Computer Science and Engineering (Data Science) Specialization
Industry Partner	Powered by IBM Specialization
School	University School of Engineering and Technology (USET)
Batch	2023-2027
Duration	4 Years (8 Semesters)
Admission Year	2023
Scheme Version	Revised Study Scheme

Semester I — First Year

S.No.	Course Name
1	Applied Mathematics
2	Applied Physics / Electrical and Electronics Engineering
3	Applied Physics Lab / Electrical and Electronics Engineering Lab
4	Object-Oriented Programming in C++
5	Object-Oriented Programming in C++ Lab
6	IT Infrastructure Landscape Overview
7	Linux Administration
8	Linux Administration Lab
9	Computational Thinking, Problem Solving, Application Planning & Automated Software Testing
10	Computational Thinking, Problem Solving, Application Planning & Automated Software Testing Lab
11	English Communication Skills-I
12	English Communication Skills-I Lab
13	Environmental Science

Semester II — First Year

S.No.	Course Name
1	Discrete Mathematical Structures
2	Applied Statistics
3	Applied Statistics Lab
4	Data Structures & Algorithms with C++
5	Data Structures & Algorithms with C++ Lab
6	Python Programming

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7	Python Programming Lab
8	Applied Physics / Electrical and Electronics Engineering
9	Applied Physics Lab / Electrical and Electronics Engineering Lab
10	Design Thinking & Strategic Innovation
11	Design Thinking & Strategic Innovation Lab
12	English Communication Skills-II
13	English Communication Skills-II Lab
14	Introduction to Data Analytics

Note: Summer Training of 6 hrs per day for 4 weeks to be conducted after the completion of 1st Year.

□ **After Completion of 1st Year — Certificate in Computer Science and Engineering (Data Science)**

Semester III — Second Year

S.No.	Course Name
1	Relational Database Management System & NoSQL
2	Relational Database Management System & NoSQL Lab
3	Analytics for Industries
4	Systems Programming and Operating Systems
5	Systems Programming and Operating Systems Lab
6	Principle of Modern Software Engineering
7	Emerging Tech 1 — IT Security
8	Emerging Tech 1 — IT Security Lab
9	III Semester Electives (EL)-1
10	Industry Elective Module 1
11	Personality Development Workshop-I
12	Understanding Indian Constitution
13	Summer Training

Semester IV — Second Year

S.No.	Course Name
1	Web Technologies & Applications
2	Web Technologies & Applications Lab
3	Descriptive Analytics
4	Descriptive Analytics Lab
5	Personality Development Workshop-II
6	Computer System Organization and Architecture

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7	Computer System Organization and Architecture Lab
8	Emerging Tech 2 — Artificial Intelligence and Machine Learning
9	Emerging Tech 2 — Artificial Intelligence and Machine Learning Lab
10	IV Semester Electives (EL)-2
11	Industry Elective Module 2
12	Project-2: Real Time App.

Note: Summer Training-II: Project assignment & field work to collect real data — summer break 4 weeks.

□ After Completion of 2nd Year — Diploma in Computer Science and Engineering (Data Science)

Semester V — Third Year

S.No.	Course Name
1	Cryptography and Network Security
2	Predictive Analytics
3	Predictive Analytics Lab
4	Emerging Tech 3 — Internet of Things
5	Emerging Tech 3 — Internet of Things Lab
6	Micro Processor
7	Micro Processor Lab
8	Civic & Professional Ethics
9	V Semester Electives (EL)-3
10	Personality Development Workshop-III
11	Industry Elective Module 3
12	Summer Training-III
13	Project-3: Real Time App.

Semester VI — Third Year

S.No.	Course Name
1	Big Data Analytics
2	Big Data Analytics Lab
3	Emerging Tech 4 — Blockchain Technology
4	Emerging Tech 4 — Blockchain Technology Lab
5	Enterprise Resource Planning Architecture & Applications
6	Enterprise Resource Planning Architecture & Applications Lab
7	VI Semester Electives (EL)-4
8	Industry Elective Module 4
9	LIVE / LIVE Like Major Project-4

□ After Completion of 3rd Year — B.Sc. Engineering in Computer Science and Engineering (Data Science)

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Semester VII — Fourth Year

S.No.	Course Name
1	Semester On Job Deployment (OJD-I)

Semester VIII — Fourth Year

S.No.	Course Name
1	Semester On Job Deployment (OJD-II)

□ **After Completion of 4th Year — B.Tech Degree in Computer Science and Engineering (Data Science)**

SEMESTER ELECTIVES & INDUSTRY ELECTIVE MODULES

Industry Elective Modules (Modules 1–4):

Industry Elective Modules are offered in partnership with IBM Specialization and are aligned with current Data Science industry requirements. Students select one module per semester from Semesters III–VI, gaining hands-on, industry-relevant skills that complement the core curriculum.

Semester Electives (EL-1 to EL-4):

One elective course is offered per semester (Semesters III–VI). The list of elective courses is notified each semester by the School/University.

PROGRAMME EXIT MILESTONES

- ◆ After Year 1 (Semesters I & II) → Certificate in Computer Science and Engineering (Data Science)
- ◆ After Year 2 (Semesters III & IV) → Diploma in Computer Science and Engineering (Data Science)
- ◆ After Year 3 (Semesters V & VI) → B.Sc. Engineering in Computer Science and Engineering (Data Science)
- ◆ After Year 4 (Semesters VII & VIII) → B.Tech Degree in Computer Science and Engineering (Data Science)

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