



LAMRIN TECH SKILLS UNIVERSITY PUNJAB

University School of Engineering and Technology (USET)

STUDY SCHEME | B.Tech CSE — Artificial Intelligence & Machine Learning (IBM Specialization)

PROGRAMME DETAILS

Programme Name	B.Tech Computer Science and Engineering (Artificial Intelligence and Machine Learning)
Industry Partner	Powered by IBM Specialization
School	University School of Engineering and Technology (USET)
Batch	2026 Onwards
Duration	4 Years (8 Semesters)
Admission Year	2026
Scheme Version	Revised Study Scheme

Semester I — First Year

S.No.	Course Name
1	Applied Mathematics
2	Applied Physics / Electrical & Electronics Engineering
3	Applied Physics Lab / Electrical & Electronics Engineering Lab
4	Computing Fundamental and Programming Essentials Skills
5	Computing Fundamental and Programming Essentials Skills Lab
6	Python Programming
7	Python Programming Lab
8	Generative AI and Prompt Engineering
9	English Communication Skills-I
10	English Communication Skills-I Lab
11	Environmental Science

Note: Total: 33 Hrs

Semester II — First Year

S.No.	Course Name
1	Applied Statistics
2	Data Structures & Algorithms with C++
3	Data Structures & Algorithms with C++ Lab
4	Applied Physics / Electrical & Electronics Engineering
5	Applied Physics Lab / Electrical & Electronics Engineering Lab
6	Design Thinking & Strategic Innovation



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7	Design Thinking & Strategic Innovation Lab
8	English Communication Skills-II
9	English Communication Skills-II Lab
10	Introduction to Artificial Intelligence and Machine Learning

Note: Total: 32 Hrs

☐ **After Completion of 1st Year — Certificate in Computer Science and Engineering**

Semester III — Second Year

S.No.	Course Name
1	Relational Database Management System & NoSQL
2	Relational Database Management System & NoSQL Lab
3	Machine Learning
4	Machine Learning Lab
5	Operating Systems
6	Operating Systems Lab
7	Emerging Tech 1 — Data Analytics
8	Industry Elective Module 1 (Self-Paced Online Learning)
9	Personality Development Workshop-I
10	Health & Fitness
11	Summer Training & Phase I Project
12	Open Elective-I (Online Certification Course through MOOC, SWAYAM etc.)

Note: Total: 32 Hrs | Summer Training: 6 Hrs/day for 4 weeks (Phase I Project)

Semester IV — Second Year

S.No.	Course Name
1	Web Technologies & Applications
2	Web Technologies & Applications Lab
3	Application of Machine Learning in Industries
4	Application of Machine Learning in Industries Lab
5	Emerging Tech 2 — IT Security
6	IV Semester Electives (EL)-2
7	Industry Elective Module 2 (Self-Paced Online Learning)
8	Project on Real Time App. (Phase II Project)

Note: Total: 28 Hrs | Summer Training-II: Project assignment & field work — 4 weeks



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

Semester V — Third Year

S.No.	Course Name
1	Data Communication and Computer Networks
2	Data Communication and Computer Networks Lab
3	Deep Learning
4	Deep Learning Lab
5	Emerging Tech 3 — Internet of Things
6	V Semester Electives (EL)-3
7	Industry Elective Module 3 (Self-Paced Online Learning)
8	Summer Training-III
9	Project on Real Time App. (Phase III Project)
10	Open Elective-II (Online Certification Course through MOOC, SWAYAM etc.)

Note: Total: 26 Hrs

Semester VI — Third Year

S.No.	Course Name
1	Computational Linguistics and Natural Language Processing
2	Computational Linguistics and Natural Language Processing Lab
3	Pattern Recognition and Anomaly Detection
4	Pattern Recognition and Anomaly Detection Lab
5	VI Semester Electives (EL)-4
6	Industry Elective Module 4 (Self-Paced Online Learning)
7	LIVE / LIVE Like Major Project (Phase IV Project)

Note: Total: 20 Hrs

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

Semester VII — Fourth Year

S.No.	Course Name
1	Capstone Project
2	Seminar
3	Internship



Semester VIII — Fourth Year

S.No.	Course Name
1	Capstone Project
2	Seminar
3	Internship

□ After Completion of 4th Year — B.Tech Degree in Computer Science and Engineering (AI & ML)

ELECTIVES — COURSE OPTIONS

Industry Elective Modules (MD) — Self-Paced Online Learning

S.No.	Course Name
1	Banking (UGIE-101)
2	Insurance (UGIE-102)
3	Manufacturing (UGIE-104)
4	Retail (UGIE-105)
5	Healthcare (UGIE-106)

Emerging Technologies (DM)

S.No.	Course Name
1	Introduction to Data Analytics (UGCS-209)
2	Introduction to AI and Machine Learning (UGCS-203)
3	Introduction to Internet of Things (UGCS-327)
4	Introduction to Blockchain Technology (UGCS-329)
5	Introduction to IT Security (UGCS-341)

III Semester Electives (EL-1)

S.No.	Course Name
1	Open Source Software and Open Standards (UGCS-106)
2	Cloud Computing Technology (UGCS-225)
3	Sensor Technology & Instrumentation (UGEE-103)
4	Computer Oriented Numerical Methods (UGCS-208)
5	Advanced Linux and Kernel Programming (UGCS-210)
6	Android Programming (UGCS-342)



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7	Data Communication and Computer Networks (UGCS-206)
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IV Semester Electives (EL-2)

S.No.	Course Name
1	Cyber Security (UGCS-221)
2	Automata Theory and Computability (UGCS-222)
3	Wireless Sensor Networks (UGCS-223)
4	Data Warehousing and Data Mining (UGCS-325)
5	Prescriptive Analytics (UGCS-224)
6	Predictive Analytics (UGCS-343)
7	Web Programming for Graphics & Gaming — WebGL (UGCS-344)
8	Data Wrangling & Data Visualisation (UGCS-217)
9	Descriptive Analytics (UGCS-345)
10	Generative AI (UGCS-401)

V Semester Electives (EL-3)

S.No.	Course Name
1	ITIL — Information Technology Infrastructure Library (UGCS-321)
2	Big Data Analytics (UGCS-324)
3	Mainframe Systems Skills (UGCS-322)
4	Social & Web Analytics (UGCS-323)
5	Web Programming through PHP & XML (UGCS-326)
6	Machine Learning (UGCS-213)
7	Ethical Hacking & Penetration Testing (UGCS-328)
8	Digital Image Processing (UGCS-346)
9	IT Application Discovery & Dependency Management (UGCS-347)
10	Advanced Computer Graphics, Animation Algorithm and Techniques (UGCS-348)
11	Compiler Design (UGCS-361)

VI Semester Electives (EL-4)

S.No.	Course Name
1	Internet of Things (UGCS-327)
2	Blockchain Technology (UGCS-329)
3	Control Theory for Linear Systems (UGCS-331)
4	IPv6 Analysis and Applications (UGCS-332)



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5	Deep Learning (UGCS-333)
6	Information Security Intelligence and Management Practices (UGCS-334)
7	Information Security Audit Monitoring and Governance (UGCS-335)
8	Communication Theory and Techniques / Digital Signal Processing (UGCS-311)
9	Embedded Technology for IoT (UGCS-349)
10	IoT and Smart City (UGCS-350)
11	Agile Methodology (UGCS-351)

PROGRAMME EXIT MILESTONES

- ◆ After Year 1 → Certificate in CSE
- ◆ After Year 2 → Diploma in CSE (AI & ML)
- ◆ After Year 3 → B.Sc. Engineering in CSE (AI & ML)
- ◆ After Year 4 → B.Tech Degree in CSE (AI & ML)

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