

# A Curriculum Designed to Shape

## More Than Academic Success

A clear GUIDE to  **Kalvium** - India's #1 Work-Integrated **B.Tech Computer Science Engineering programme** designed to build strong academic foundation, professional capability, and responsible engineers.



# What is



Kalvium is a four-year, full-time, residential B.Tech programme in Computer Science & Engineering, offered in collaboration with UGC-recognized and AICTE-approved universities in India.



**2,223 students across India.**

One shared mission: choosing challenge over comfort.

Kalvium was founded by leaders with over 15 years of experience in education, helping 50 lakh+ students across India launch their careers. Built on this foundation, Kalvium focuses on strengthening how engineering is learned - through learn-by-building, work integration, and hard work.

At Kalvium, learning goes beyond classrooms and exams. Students grow by building, learning from mistakes, and improving everyday. Over 4 years, the focus shifts from completing coursework to becoming real-world ready - apply skills, adapt to change, and thrive as technology evolves.

At its core, Kalvium is about shaping who a student becomes, not just what they study.

# How learning changes from School to College

| IN SCHOOL   | IN COLLEGE   |
|---|--|
| <p>School education is designed to build a broad foundation. All subjects are given similar importance, students are guided closely, and learning moves at a steady pace with assessments spread over time, with marks being the indicator of success &amp; learning.</p> <p><b>Key differences:</b></p> <ul style="list-style-type: none"><li>Focuses on marks, grades, and rankings</li><li>Success measured by exam scores</li><li>Learning aimed at clearing tests</li><li>Emphasis on memorising and reproducing answers</li></ul> | <p>In college, students choose one stream and go deeper into that area. Subjects become more specialised and connected, learning moves faster, and students are expected to take greater responsibility for how they study and apply what they learn.</p> <p><b>Key differences:</b></p> <ul style="list-style-type: none"><li>Focuses on becoming a skilled professional</li><li>Success measured by knowledge, skills, and experience</li><li>Learning aimed at real-world application</li><li>Emphasis on critical thinking and problem-solving</li></ul> |

## Why does how you learn in college matter?

The way learning happens in college shapes how prepared students feel after graduation. College is not only about completing subjects or passing exams - it is where students begin to develop habits needed for real work environments. As students move beyond school, learning must also build problem-solving, communication, teamwork, and a sense of responsibility. These abilities grow through everyday learning, not exams alone.

When college learning builds these habits early, students graduate with confidence - not just knowledge. This is why the structure and approach of an engineering programme matter.

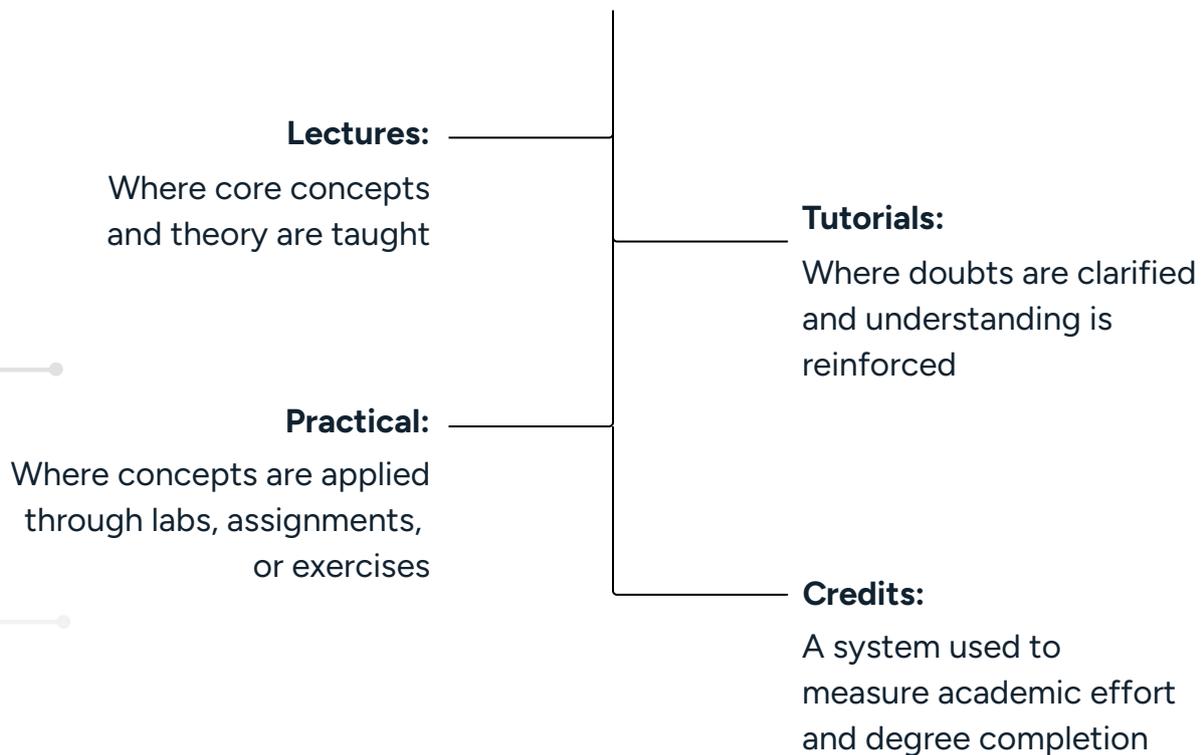
# How Engineering Programmes

## Are Structured

Most engineering colleges follow a common framework called **LTPC**, which defines how teaching and learning are organised.

**L T P C**

stands for:



In practice, this structure is largely **lecture-driven**. Students spend much of their time attending classes, while **practicals** happens separately through scheduled labs or limited assignments.

**Tutorials** are meant to support learning, but large class sizes and tight schedules can limit individual attention. Academic progress is measured through attendance, internal assessments, and end-semester exams, which determine the **credits** earned.

This structure ensures syllabus completion and degree eligibility. However, the balance between lectures and practicals plays a key role in how confident students become in applying what they learn.

# Understanding the Learning Gap

While the structure works well for academic progression, it does not always support continuous application of learning.



In real engineering roles, learning happens through daily problem-solving. Engineers are expected to apply concepts regularly - building solutions, testing them, fixing mistakes, and working with others. Confidence develops through practice and feedback, not only through understanding theory.

Because most programmes are organised mainly around classes and examinations, students often get fewer chances to practise skills consistently or take ownership over time. As a result, many graduates have good theoretical knowledge but feel less prepared for the everyday demands of engineering work.

Recognising this gap has led to a rethinking of how engineering education should be delivered.

# How Kalvium

## Bridges This Gap

Alongside the formal degree structure, Kalvium focuses on technical & professional skills, and preparing students for the real world, supported by three parallel learning components.

### Essentials - Degree and Credits

Essentials cover the core academic subjects that form the official B.Tech Computer Science degree. They are AICTE-compliant and part of the university-approved curriculum, ensuring all academic and degree requirements are met.

Through Essentials, students build **strong computer science fundamentals**, prepare for university examinations, and earn the **credits required for degree completion**. **Assessments** follow university regulations, with internal evaluations and end-semester exams conducted under Kalvium's academic design and the university's Controller of Examinations guidelines.

**Example Subjects:** Programming and Web Development, Data Structures & Algorithms, Database Management Systems, Operating Systems, System Design, Artificial Intelligence & Machine Learning, and Engineering Mathematics.

### Mastery – Employability

Mastery is where students become **job-ready engineers**.



This track focuses on certification-driven, role-aligned skill development that translates academic learning into **demonstrated, verifiable capability**. Unlike traditional coursework, Mastery is not about completing subjects - it is about proving readiness for real engineering roles.

Students work on industry-aligned challenges that involve **building, shipping, debugging, reviewing, and improving real systems**. Progress is measured by outcomes - what a student can build and defend - not by written exams alone.

Mastery is intentionally kept outside the degree structure. This allows Kalvium to evolve skills rapidly in response to changing industry expectations, without inflating academic curricula.

## What students build under Mastery

| Technical                                     | Non-Technical                               |
|---|---|
| Web and application development               | Resume and portfolio defensibility          |
| Backend systems, databases, and APIs          | Clear professional communication            |
| Data engineering, modern AI/ML systems        | Behavioral interview readiness              |
| System design and large-scale problem solving | Team-based engineering and workplace ethics |

## How Mastery is assessed ?

- Verified through **real work**, not exams
- Evaluated using **codebases, deployments, and system artifacts**
- Measured via documentation, logs, and outcomes
- Certified at clear skill or **milestone checkpoints**
- Assessed for **consistency, capability, and job readiness**

## Outcome

- Clear employability signals for **recruiters**
- Industry-aligned **credentials**
- Verified **readiness** to perform in professional environments

### Simply put:

- Essentials show what a student has studied.
- **Mastery shows what a student is ready to do.**

—————> A curriculum designed by top tech leaders from <—————



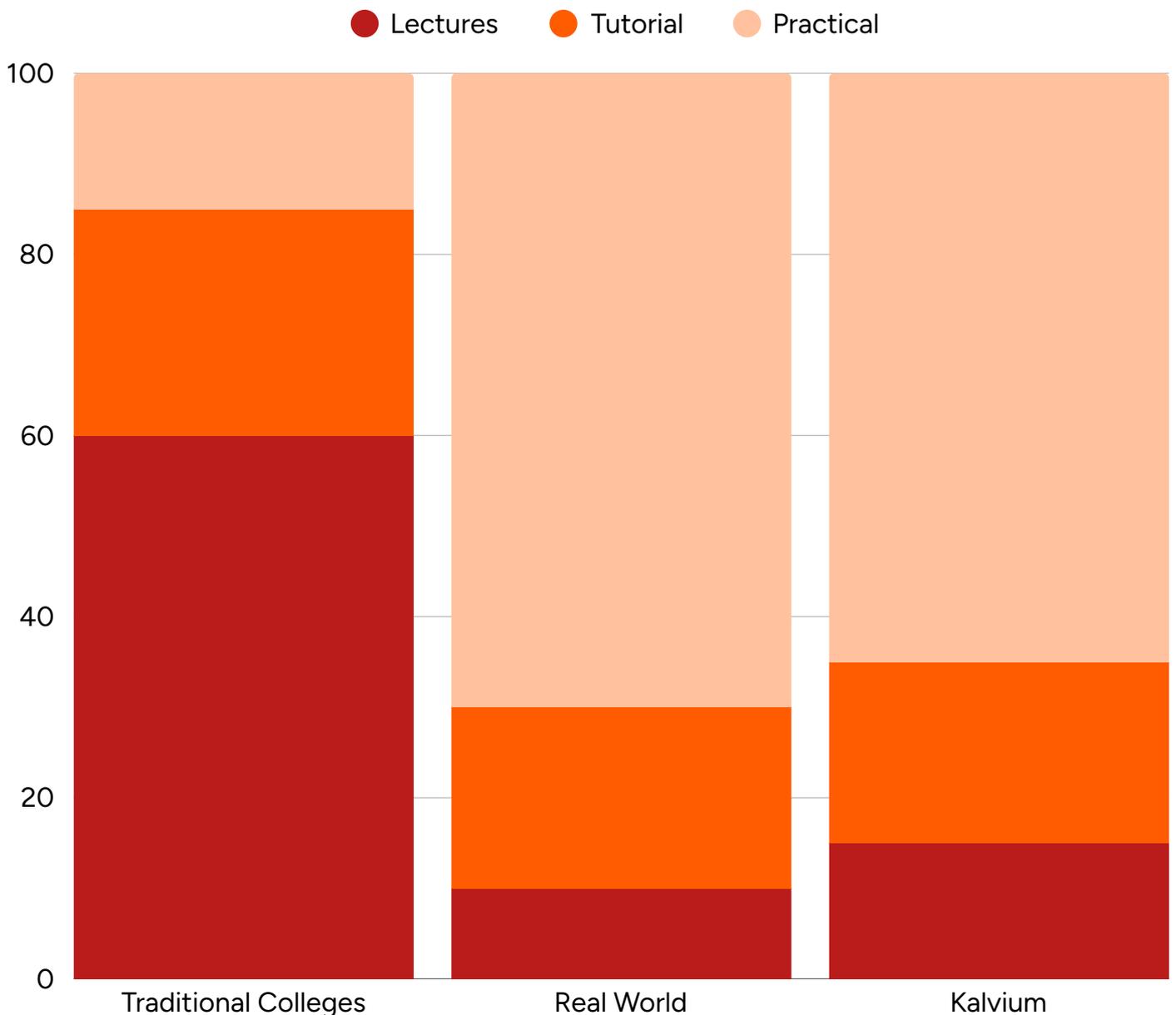
And many more...

## Excellence – Ownership and Growth

Excellence prepares students for long, evolving careers in technology.

Rather than coursework, it is earned through sustained real-world contributions - owning products used by real users, contributing at scale to open-source projects, mentoring peers & juniors, publishing deep technical essays, and more.

Over time, these experiences help students develop maturity and responsibility, helping them stand out as engineers ready to handle complex, real-world challenges.



Kalvium aligns closely to how Software Engineering is learnt & applied in the real-world.

## Complete 4-Year Curriculum Overview

A thoughtfully curated, up-to-date curriculum designed to prepare engineers for the rapidly evolving world of tech.

| Semester   | SPE<br>(Software Product Engineering)  | AIFT<br>(AI & Future Technologies)  | Total Credits |
|------------|--|---|---------------|
| Semester 1 | Front-end Web Development, Problem Solving using Programming, Critical Thinking, English LSRW, Design for Developers, Breadth of CS – 1, Learning How to Learn                                       | Front-end Web Development, Problem Solving using Programming, Critical Thinking, English LSRW, Design for Developers, Breadth of CS – 1, Learning How to Learn  | 24            |
| Semester 2 | Discrete Mathematics, Back-end Web Development, Practical Databases for Web Development, Professional Skills for the Workplace, Introduction to AI/ML/LLMs, Breadth of CS – 2, Indian Constitution   | Discrete Mathematics, Back-end Web Development, Practical Databases for Web Development, Professional Skills for the Workplace, Introduction to AI/ML/LLMs, Breadth of CS – 2, Indian Constitution                | 24            |
| Semester 3 | Database Management Systems, Object-Oriented Programming, Introduction to Generative AI Systems, Values & Ethics in Technology, Financial Literacy, Environmental Sciences, Internship / Project – 1 | Database Management Systems, Object-Oriented Programming, Introduction to Generative AI Systems, Values & Ethics in Technology, Mathematical Foundations for ML, Environmental Sciences, Internship / Project – 1 | 22            |

|               |  |   |           |
|---------------|--|---|-----------|
| Semester<br>4 | Data Structures & Algorithms, Operating Systems, Deep Learning & Neural Networks, Project Management & Agile Delivery, Organizational Behavior, Internship / Project – 2           | Data Structures & Algorithms, Operating Systems, Deep Learning & Neural Networks, Project Management & Agile Delivery, Organizational Behavior, Internship / Project – 2          | <b>21</b> |
| Semester<br>5 | Design & Analysis of Algorithms, Computer Organization & Architecture, Applied AI & Agentic Systems, Universal Human Values, Indian Knowledge Traditions, Internship / Project – 3 | Design & Analysis of Algorithms, Computer Organization & Architecture, Machine Learning Algorithms, Universal Human Values, Indian Knowledge Traditions, Internship / Project – 3 | <b>21</b> |
| Semester<br>6 | System Design, Computer Networks, Professional Elective – 1, Career Development & Professional Readiness, Internship / Project – 4   | AI Systems Engineering,, Computer Networks, Professional Elective – 1 (AI-focused), Career Development & Professional Readiness, Internship / Project – 4                         | <b>20</b> |
| Semester<br>7 | Professional Electives – 2 & 3, Business Thinking & Entrepreneurship, Internship / Project – 5   | Professional Electives – 2 & 3 (AI-focused), Business Thinking & Entrepreneurship, Internship / Project – 5   | <b>16</b> |
| Semester<br>8 | Open Elective, Final Internship / Capstone Project   | Open Elective (AI/Tech Focus), Final Internship / Capstone Project  | <b>16</b> |

Total Credits across 8 semesters: **164**

Note :Subjects and credit distribution can go through changes in order to adhere to partner university regulations, in alignment with AICTE guidelines.

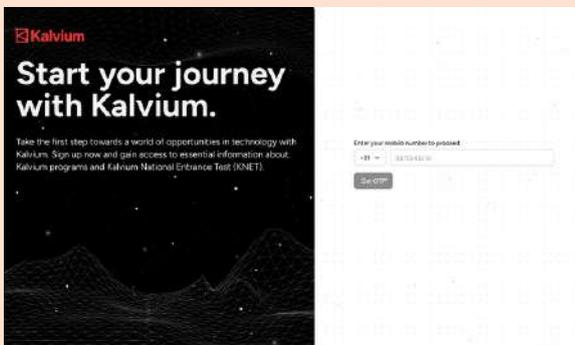
### How to Join Kalvium?

Kalvium's 4-step admission process helps bring together ambitious students for its high-intensity B.Tech CSE program, creating a diverse, talented peer group.

#### Step 1:

##### Sign Up on the Admissions Portal

The first step is to register on Kalvium's official admissions portal. This helps you begin your application and get access to next steps. [Click here](#) to sign up.



#### Step 2:

##### Take the KNET

After signing up, you take the Kalvium National Entrance Test (KNET) on the scheduled dates, which includes:

- A psychometric assessment to understand your mindset and learning approach.
- An aptitude test to measure problem-solving, learning ability & communication.

KNET is designed to assess readiness for Kalvium's B.Tech CSE programme, not to test board syllabus knowledge.

#### Step 3:

##### Attend an In-Person Interview

If you are shortlisted, you will be invited to an in-person interview at a Kalvium centre near you. This interaction helps us get to know you better and understand your fitment for the programme.

#### Step 4:

##### Visit University & Complete Admission

After the interview, eligible students receive an admit card and visit their chosen partner university to complete the formal admission process and confirm enrolment.

# Frequently Asked Questions

## 1. Who awards the B.Tech degree?

The degree is awarded by the UGC-recognized, AICTE-approved partner university where the student is enrolled. Kalvium delivers the programme in collaboration with the university.

Note : For students enrolled at the Kalvium Direct CBE campus, the degree award process differs. Students are required to independently apply to and obtain admission from the partner university to be eligible for the degree.

## 2. Is the degree valid across India and for higher studies?

Yes. The degree follows UGC and AICTE norms and is valid for employment and higher studies, subject to individual institution requirements.

## 3. Where is the Programme offered?

The Kalvium programme is offered at the premier NAAC-accredited universities across India. You can find the list of the universities here:

| University Name                | City                       |
|--------------------------------|----------------------------|
| AMET University                | Chennai, Tamil Nadu        |
| JECRC University               | Jaipur, Rajasthan          |
| Kalasalingam University        | Srivilliputhur, Tamil Nadu |
| Lovely Professional University | Phagwara, Punjab           |
| SGT University                 | Gurugram, Haryana          |
| SRM University                 | Amaravati, Andhra Pradesh  |
| St Joseph University           | Chennai, Tamil Nadu        |
| Yenepoya University            | Bengaluru, Karnataka       |
| Yenepoya University            | Mangaluru, Karnataka       |

#### 4. Will I get a AICTE / UGC approved degree?

Yes, Kalvium partners with **AICTE-approved universities** and operates fully within national academic and regulatory frameworks. **Refer to FAQ #61** on the AICTE website for more details.

#### 5. Does the student need prior coding experience?

No. The programme starts from fundamentals. What matters is the willingness to learn and practise consistently.

#### 6. Is the programme fully residential?

Yes. Kalvium is a **full-time, on-campus residential programme**, designed to support routine, focus, and peer learning

#### 7. Will Kalvium offer students a Laptop?

No, Kalvium follows a "Bring Your Own Device" (BYOD) policy. Students must bring their own laptops that meet the minimum system requirements. **Check this page** for more details.

#### 8. What is the eligibility criteria for the Kalvium Programme?

Students who have completed their 12th grade or Diploma are eligible to join the Kalvium programme. Admission is strictly based on merit, determined through the Kalvium National Entrance Test (KNET) and university-specific eligibility criteria.

#### 9. Do my scores in JEE entrance apply to the Kalvium programme?

No, admission to the Kalvium programme is based on your KNET performance, not your JEE score. Eligibility is determined by clearing the KNET cutoffs and the criteria set by the respective partner university. JEE scores are not required for this programme.

#### 10. How can we learn more before deciding?

Parents can attend a Kalvium webinar or book a 1:1 counselling session along with their child. To confirm a webinar or schedule a counselling session, please call us directly at 94832 00300.



Find out if you have what it  
takes to be a Kalvian

**Apply Now**

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Register for a  
**FREE 1:1 Counseling**



**9483 200 300**