SCALER
School of Technology

Curriculum Deep Dive

Industry-vetted syllabus that guarantees growth

The SST Advantage

	Scaler School of Technology	Traditional Education
Curriculum	Industry-relevant: Prepares for 2028 & beyond	Outdated
Instructors	Worked at Google, Meta, Microsoft & tech companies	No industry experience
Assignments	Code 50+ Apps and Products	Theoretical written papers
Mentorship	1:1 sessions with industry experts	No dedicated guidance
Internship	1-Year Compulsory Paid Internship	No Exposure
Employability	Industry ready	Extra training required
Graduation	Level of a Senior SDE	Level of a Junior SDE

Scholarships & Evaluation Criteria

We believe financial limitations should not hinder one's academic pursuits. To that end, we offer scholarships ranging from 10% to 100% of the tuition fee, based on the student's academic profile. All Scholarships will be awarded by the Scaler Impact Foundation; supported by industry stalwarts like Vijay Shekhar Sharma (Founder & CEO, Paytm) and Prasanna Sarkar (Founder, Rippling).

Scholarships we offer:

Brightest Minds Scholarship

This scholarship recognises and rewards candidates with exceptional academic achievements in competitive exams.

Eligibility: With exceptional academic performance in tests such as the JEE, CBSE exam, KVPY, NTSE, etc.

Women In Tech Scholarship

To support and encourage talented female students who have a passion for coding and a desire to pursue a career in technology.

Eligibility: Exceptional women candidates who can demonstrate their affinity for coding through tech competitions, events, or more.

Evaluation Criteria:

- Academic Achievements (10th / 12th%)
- Achievements in JEE or equivalent competitive exams or Scaler NSET score
- Extracurricular projects and contributions (Technical/ Non-Technical/ Leadership roles)
- Family's financial profile

Please note to ensure a fair application the scholarship decisions are rule-based and at the discretion of Scaler Impact Foundation and Scholarship sponsors. These are final and will not be revisited.

Phase 1: Learn (24 Months)

4 Months	Trimester 1	Learning Outcomes	Learn by Building Projects
Hard Skills	Basics of Computer Programming	▪ Kick-start your coding journey by mastering the basics of programming ▪ Develop skills to write efficient, code with an emphasis on minimising time complexity and optimising space usage ▪ Implement sorting and searching algorithms	▪ Develop a command line calculator to perform basic arithmetic operations ▪ Create a BMI calculator to assess users' health metrics ▪ Design a number guessing game to apply logic and control structures
	Command Line Interfaces and Shell Scripting	▪ Learn to automate tasks, crawl webpages and manipulate files efficiently with command line and shell scripting	▪ Build a web crawler to extract information from websites ▪ Develop an e-commerce price comparator to track and compare product prices across different websites
	Discrete Maths	▪ Learn crucial mathematical concepts for understanding complex computer science principles	
Micro MBA	Basics of Communication	▪ Build communication skills ▪ Learn to pitch and present ideas in a professional space	▪ Create a pitch deck

4 Months	Trimester 2	Learning Outcomes	Learn by Building Projects
Hard Skills	Data Structures and Algorithms - I	▪ Master the creation of custom data structure libraries ▪ Dive into string-matching algorithms, trees and priority queues	▪ Develop an expression evaluator ▪ Implement a Least Recently Used (LRU) cache system
	Basics of Web Development	▪ Learn to craft responsive and dynamic websites using CSS and JavaScript	▪ Design a web-based clock and timer ▪ Create a Rock-Paper-Scissors game for the web browser
	Linear Algebra	▪ Apply linear algebra concepts to solve linear programming problems	▪ Build an Image Compressor tool
Micro MBA	Creator Module	▪ Learn effective communication through creative content creation across platforms, starting with YouTube and scaling across others ▪ Emphasis on personal branding and resume building through creative outputs	▪ Launch and grow your own YouTube channel, applying strategies for content creation and audience engagement

4 Months	Trimester 3	Learning Outcomes	Learn by Building Projects
Hard Skills	Data Structures and Algorithms - II	▪ Enhance problem-solving skills with advanced programming paradigms such as backtracking, greedy algorithms and dynamic programming	▪ Develop a Sudoku solver ▪ Implement an efficient search functionality within a phone directory

		▪ Apply graph algorithms for path optimisation across different network types	▪ Create a pathfinder for optimising routes
Hard Skills	Backend Systems and Object-Oriented Programming	▪ Learn to design and implement backend APIs and integrate them with frontends ▪ Write maintainable, extensible, and understandable code using object-oriented programming principles	▪ Design schemas for various applications including social media sites, dating apps and food delivery services
	Probability and Statistics	▪ Acquire practical data handling skills with NumPy and Pandas ▪ Gain foundational knowledge in probability, statistical analysis, and hypothesis testing techniques	▪ Analyse business case studies focusing on hypothesis testing and correlation analysis
Micro MBA	Business Problem Solving	▪ Structured problem-solving using a McKinsey-like approach ▪ Define SMART problem statements and break down problems into actionable solutions ▪ Learn to communicate solutions effectively, both in writing (400-word executive summary) and verbally (2-minute C-suite presentation)	▪ Assessment includes real-world data analysis and cases focused on a single business like Apple with increasing complexity

4 Months	Trimester 4	Learning Outcomes	Project Highlights
Hard Skills	Operating Systems and Network Programming - I	▪ Gain foundational knowledge of operating systems and computer networks. Solve common concurrency problems and optimise computing processes	▪ Implement solutions for concurrency issues, such as the Reader-Writers problem ▪ Develop a multi-threaded web crawler ▪ Optimise the execution time of a given code snippet
	Databases Schema Design	▪ Master the art of designing extensible, maintainable class and database schemas ▪ Learn query optimisation, indexing, normalisation, and CRUD operations on NoSQL databases	▪ Design an in-memory database with concurrency control, emphasising query efficiency and system scalability
Micro MBA	Product Problem Solving	▪ Build scalable products from concept (0-1) to growth (1-10 products) ▪ Discover and prioritise problems, feature development, wireframing and product analytics ▪ Work with teams and plan product roadmaps	▪ The curriculum uses Uber as a case study for 0-1 products and involves assessments with real-world Scaler data

4 Months	Trimester 5	Learning Outcomes	Learn by Building Projects
Hard Skills	Operating Systems and Network Programming - II	▪ Master socket programming and the development of highly scalable web servers	▪ Implement socket programming techniques to enable communication between applications

			▪ Build a fully functional web server capable of handling over 100,000 concurrent requests per second
Hard Skills	Web Development - II	▪ Develop advanced web applications using React, focusing on optimisation strategies for enhanced performance	▪ Create an online Excel sheet application, showcasing front-end optimisation and interactive features
	Introduction to Machine Learning	▪ Learn to design, implement, and evaluate machine learning models for solving real-world problems ▪ Gain a deep understanding of the algorithms and principles underpinning machine learning technology	▪ Develop a recommendation engine, applying machine learning techniques to tailor suggestions based on user behaviour and preference
Micro MBA	Interview Preparation	▪ Preparing for top-tier job opportunities ▪ Provide learners with the internal toolkit needed to excel in interviews for high-calibre positions	▪ Build your resume and interview answers sheet

4 Months	Trimester 6	Learning Outcomes	Learn by Building Projects
Hard Skills	Web Development - III	▪ Master the use of MVC (Model-View-Controller) frameworks to create extensible, understandable and maintainable software ▪ Learn to integrate with external APIs effectively	▪ Develop a fully functional e-commerce website, incorporating payment integrations and showcasing the practical application of MVC frameworks and API integrations

Hard Skills	Data Structures and Algorithm Refresher	▪ Enhance problem-solving skills to tackle challenging interview questions under time constraints, focusing on complex data structures and algorithms	▪ Prepare for technical interviews by solving high-level problems commonly asked in a time-restricted environment
	Introduction to Cryptography	▪ Understand the basics of cryptography and implement secure communication protocols	▪ Implement RSA encryption to understand the fundamentals of public-key cryptography ▪ Apply HTTPS encryption to secure web communications, reinforcing the practical application of cryptographic principles

Phase 2: Experience (12 Months)

Gain Industry Experience via a full-time internship with a stipend

Pre-internship: (Skills you will learn)	▪ Build a small get-started project on the tech stack of the company you'll be joining ▪ Learn to write unit tests ▪ Art of writing documentation and handling large codebases ▪ Learn to debug tools
During Internship: (Support you will receive)	▪ Monthly / Biweekly check-ins from a personal mentor ▪ Correction on hard and soft skills as needed ▪ Helping material to succeed in the role as needed

Phase 3: Specialise (12 Months)

4 Months	Trimester 1	Learning Outcomes	Learn by Building Projects
Hard Skills	Advanced Data Structures and Algorithms	▪ Master advanced data structures and algorithms to solve complex computational problems efficiently ▪ Tackle hard DSA challenges using Binary Lifting, Digit DP, and lazy propagation techniques	▪ Implement advanced data structures like Segment Trees, AVL Trees, and Binary Indexed Trees ▪ Develop an Advanced DS Library to encapsulate these implementations
	Maths for Data Science and Machine Learning	▪ Apply mathematical concepts critical to data science and machine learning problem-solving ▪ Apply these mathematical tools to enhance machine learning models and data analysis techniques	▪ Address complex problems involving Calculus, Hyperplanes, Gradient Descent, and Principal Component Analysis (PCA)
	Low-Level Design - I **[SDE]**	▪ Design extensible and maintainable software systems, focusing on foundational design principles	▪ Design and implement classic games like Tic-Tac-Toe and Snake & Ladder, focusing on low-level system design principles to create scalable and maintainable codebases
	Neural Networks and Machine Learning **[DSML]**	▪ Understand and implement foundational machine learning models to solve real-world problems	▪ Implement machine learning models such as Linear Regression, Logistic Regression, and K-Nearest

Hard Skills			Neighbours (KNN), grounding your knowledge in practical applications of neural networks and machine learning principles
Micro MBA	Project Management - I	▪ Estimate effort and timelines effectively to create a Gantt Chart around it	Build your resume and interview answers sheet

4 Months	Trimester 2	Learning Outcomes	Learn by Building Projects
Hard Skills	Low-Level Design - II **[SDE]**	▪ Master the application of design patterns to solve specific problems and design scalable, maintainable applications	▪ Design complex applications like BookMyShow and Splitwise, emphasising modular and scalable design
	Algos for HFT **[AT]**	▪ Develop financial data models and basic algorithms tailored for high-frequency trading environments	
	Unsupervised Machine Learning **[DSML]**	▪ Implement unsupervised machine learning techniques to uncover hidden patterns in data ▪ Implement clustering algorithms and Principal Component Analysis (PCA) to analyse and visualise data	▪ Develop a recommendation system for an e-commerce website, utilise unsupervised learning to enhance customer experience

Hard Skills	High-Level Design - I [SDE]	▪ Design and architect extensive, scalable systems similar to those we interact with daily	▪ Design a system like Facebook Messenger, focusing on scalability, reliability, and real-time data processing
	System Programming [AT]	▪ Apply system programming concepts using C/C++ to manage and optimise low-level system resources	▪ Work with sockets, threads, and the operating system's file system and memory management to create efficient, high-performance applications
	Natural Language Processing [DSML]	▪ Understand and implement NLP techniques to build applications that can understand and respond to human language	▪ Develop a voice-activated assistant similar to Siri/Alexa, showcasing the application of NLP models and machine learning algorithms to process and interpret natural language
Micro MBA	Project Management - II	▪ Learn Agile Project Management and Stakeholder Management	

4 Months	Trimester 3	Learning Outcomes	Learn by Building Projects
Hard Skills	High-Level Design - II [SDE]	▪ Design and deploy scalable live streaming services using cloud platforms	▪ Build a live streaming website on AWS, similar in functionality to Google Meet, emphasizing scalable architecture and cloud services integration

4 Months	Trimester 3	Learning Outcomes	Learn by Building Projects
Hard Skills	Big Data [SDE]	▪ Master data warehousing, creation of data lakes, and data querying using MapReduce or Spark	▪ Implement advanced data structures like Segment Trees, AVL Trees, and Binary Indexed Trees ▪ Develop an Advanced DS Library to encapsulate these implementations
	Computer Vision [DSML]	▪ Develop systems capable of object segmentation, localisation, and detection in image/video data	▪ Implement a software system for a self-driving car, focusing on critical computer vision tasks to process and interpret real-world visual data
	Cyber Security [SDE]	▪ Equip learners with the skills to conduct thorough security audits, uncover vulnerabilities, and implement fixes to enhance system security	▪ Identify and remediate security vulnerabilities within codebases
	Machine Learning Ops [DSML]	▪ Learn the essentials of ML operations, including the deployment, monitoring, and maintenance of ML models in production environments, ensuring efficiency and scalability	▪ Establish and manage clusters for running machine learning models at scale

Note: The curriculum for Phase 3 (last 12 months) is tentative. There might be changes at the discretion of academic experts or as per industry requirements.

Ready to pave a bright career in tech?

Start Applying

THANK YOU