

SL/NO	Part One	Duration	Engineering and Development (Developer)
01	Structure Programming	1 Month	Core Programming (C++ and JavaScript)
02	Data Structure	1 Month	Core Programming (C++ and JavaScript)
03	Algorithm	1 Month	Core Programming (C++ and JavaScript)
04	Database Management System	1 Month	Database Design (MySQL and MongoDB)
05	Web Technology and Frameworks	3 Months	Web Dev Basic - HTML, CSS, JavaScript
	Backed Development		Node.JS and Express.JS
	Frontend Development		React.JS, State Management and Responsive Design
	Full Stack Development		API, Authentication (JWT QAuth) and Advanced JS
	Advanced Full Stack		Real-Time Apps (Websocket) and Server-less Architecture
	Part Two		Engineering and Development (Architect)
11	Object-Oriented Programming	1 Month	Core Programming (C++ and JavaScript)
12	Software Engineering	1 Month	
13	Architecture and Design Pattern	1 Month	Micro-service, Scalability, Design Patterns – Data Intensive App
14	System Analysis and Design	1 Month	
15	Software Security	1 Month	
16	Professional Ethics for Information System	1 Month	
	Part Three		Product Management (QA and DevOps)
17	Requirement Specification and Analysis	1 Month	
18	Software Metrics		
19	Testing and Quality Assurance	1 Month	Manual Testing and Automation Testing (Selenium)
	QA Automation		Test Framework (Cypress Appium), Performance Testing
20	Project Management	1 Month	Agile Methodology, Scrum, Stakeholder Management, Development Process
21	Software Maintenance		
22	DevOps Engineering	3 Months	Linux Command Line, Version Control, CI/CD Fundamentals
	DevOps Advance		Docker, Kubernetes, Infrastructure as Code
	Part Four		Designer and User Experience   AI   DS   Cloud
23	Human-Computer Interaction		
24	UI/UX Design	3 Months	Design Principle, Figma and Prototyping
	UI/UX Advanced		Adv. Prototyping, Usability Testing, Motion Design
25	Artificial Intelligence and Machine Learning	3 Months	
26	Applied Data Science and Engineering	1 Month	
27	Virtualization and Cloud Computing	1 Month	

SL/NO	Part Five	Duration	Computer Science Mathematics
06	Theory of Computation		
07	Discrete Mathematics		
08	Numerical Analysis		
09	Probability and Statistics		
10	Calculus, Deferential Equation and Analytical Geometry		
	<b>Part Six</b>		<b>Computer Science Part-1</b>
28	Operating System and System Programming		
29	Computer Network		
30	Distributed System and Parallel Computing		
31	Combinational Optimization		
32	Information Security		
	<b>Optional One</b>		<b>Computer Science Part-2</b>
01	Computer Organization		
02	Computer Graphics and Multimedia		
03	Mobile and Wireless Computing		
04	Embedded System		
05	Pattern Recognizing and Image Processing		
	<b>Optional Two</b>		<b>Business Computing and Customer Support</b>
06	Numerical Computation for Financial Modeling		
07	Information Retrieval		
08	Enterprise Information System		
09	Data Mining and Warehouse		
10	Business Studies for Engineers		
11	Business Communication		CRM, Communication Strategies, Handling User Feedback
12	Strategic Management		

Here's a Bachelor of Science (BSc) degree-style curriculum table structured to cover Full Stack Development, Design, QA, DevOps, Project Management, Software Architecture, and Customer Support as specialized areas. This schedule spans 8 semesters (4 years) and includes core courses, electives, projects, and industry-ready skills for expertise.

Semester	Subject Area	Topics	Learning Resources
01	Core Programming	Programming Fundamentals (Python, JavaScript), Algorithms, and Data Structures	<ul style="list-style-type: none"> <li>- Introduction to the Theory of Computation by Michael Sipser</li> <li>- CS50's Introduction to Computer Science (Harvard)</li> </ul>
02	Web Development Basics	HTML, CSS, JavaScript Basics	<ul style="list-style-type: none"> <li>- HTML &amp; CSS: Design and Build Websites by Jon Duckett</li> <li>- FreeCodeCamp Web Dev Guide</li> </ul>
03	Backend Development	Node.js, Express, Databases (SQL, MongoDB)	<ul style="list-style-type: none"> <li>- Eloquent JavaScript by Marijn Haverbeke</li> <li>- MDN Backend Docs</li> </ul>
04	UI/UX Design Basics	Design Principles, Figma, Prototyping	<ul style="list-style-type: none"> <li>- The Elements of User Experience by Jesse James Garrett</li> <li>- Interaction Design Foundation</li> </ul>
05	Frontend Development	React/Angular, State Management, Responsive Design	<ul style="list-style-type: none"> <li>- Learning React by Kirupa Chinnathambi</li> <li>- Frontend Mastery by Codecademy</li> </ul>
06	QA Testing Basics	Manual Testing, Introduction to Automation Testing Tools (Selenium)	<ul style="list-style-type: none"> <li>- Testing Computer Software by Cem Kaner</li> <li>- Test Automation University</li> </ul>
07	Full Stack Development	APIs, Authentication (JWT, OAuth), Advanced JavaScript	<ul style="list-style-type: none"> <li>- The Odin Project Full Stack Path</li> </ul>
08	UI/UX Advanced	Advanced Prototyping, Usability Testing, Motion Design	<ul style="list-style-type: none"> <li>- Don't Make Me Think by Steve Krug</li> <li>- Design + Code Tutorials</li> </ul>
09	Software Architecture	Microservices, Design Patterns, Scalability	<ul style="list-style-type: none"> <li>- Designing Data-Intensive Applications by Martin Kleppmann</li> </ul>
10	Advanced Full Stack	Real-Time Applications (WebSocket), Serverless Architecture	<ul style="list-style-type: none"> <li>- Node.js in Action</li> </ul>
11	QA Automation	Test Frameworks (Cypress, Appium), Performance Testing	<ul style="list-style-type: none"> <li>- Continuous Testing for DevOps Professionals by Katrina Clokier</li> </ul>
12	DevOps Basics	Linux Command Line, Version Control (Git), CI/CD Fundamentals	<ul style="list-style-type: none"> <li>- DevOps Full Course by Simplilearn</li> </ul>
13	Project Management	Agile Methodology, Scrum, Stakeholder Management	<ul style="list-style-type: none"> <li>- Scrum: The Art of Doing Twice the Work in Half the Time by Jeff</li> <li>- Agile Manifesto</li> </ul>
14	DevOps Advanced	Docker, Kubernetes, Infrastructure as Code	<ul style="list-style-type: none"> <li>- The Phoenix Project by Gene Kim</li> <li>- Docker Documentation</li> </ul>
15	Customer Support	CRM Tools, Communication Strategies, Handling User Feedback	<ul style="list-style-type: none"> <li>- Zendesk Customer Support Guide</li> </ul>
16	Capstone Project	Build a Full-Scale Application Incorporating All Skills	<ul style="list-style-type: none"> <li>- Mentorship Programs (LinkedIn Learning)</li> <li>- Personal GitHub Projects</li> </ul>

Duration	Topics	Learning Resources	Practice Examples	Collaboration Tools
<b>Full Stack Development</b>				
Week 1-4	HTML, CSS, JS Basics	<ul style="list-style-type: none"> <li>- HTML &amp; CSS by Jon Duckett</li> <li>- FreeCodeCamp</li> </ul>	<ul style="list-style-type: none"> <li>- Build a Portfolio Website</li> <li>- Frontend Mentor Challenges</li> </ul>	<ul style="list-style-type: none"> <li>- GitHub for version control</li> <li>- Slack/Discord for team discussions</li> </ul>
Week 5-8	Backend (Node.js, MongoDB)	<ul style="list-style-type: none"> <li>- Eloquent JavaScript by Marijn Haverbeke</li> <li>- The Odin Project</li> </ul>	<ul style="list-style-type: none"> <li>- Build a REST API for a blog</li> <li>- API Practice</li> </ul>	<ul style="list-style-type: none"> <li>- GitLab for collaboration</li> <li>- Trello for task management</li> </ul>
Week 9-12	Advanced Full Stack (React, Authentication)	<ul style="list-style-type: none"> <li>- Learning React by Kirupa Chinnathambi</li> <li>- Scrimba React</li> </ul>	<ul style="list-style-type: none"> <li>- Build a real-time chat app</li> <li>- Socket.IO Demos</li> </ul>	<ul style="list-style-type: none"> <li>- VS Code Live Share for coding together</li> </ul>
<b>Design and User Experience</b>				
Week 1-3	UI/UX Basics, Figma	<ul style="list-style-type: none"> <li>- The Elements of User Experience by Jesse</li> <li>- Figma Tutorials</li> </ul>	<ul style="list-style-type: none"> <li>- Redesign a popular app's interface</li> <li>- Daily UI Challenges</li> </ul>	<ul style="list-style-type: none"> <li>- Figma Collaboration Tools</li> <li>- Miro for brainstorming</li> </ul>
Week 4-5	Prototyping, User Research	<ul style="list-style-type: none"> <li>- Don't Make Me Think by Steve Krug</li> <li>- User Research Basics</li> </ul>	<ul style="list-style-type: none"> <li>- Conduct a usability test for a basic prototype</li> </ul>	<ul style="list-style-type: none"> <li>- Optimal Workshop for usability testing</li> </ul>
Week 6-8	Advanced Design (Motion, Accessibility)	<ul style="list-style-type: none"> <li>- Google UX Design Certificate</li> </ul>	<ul style="list-style-type: none"> <li>- Create an accessible app interface</li> <li>- Contrast Checker</li> </ul>	<ul style="list-style-type: none"> <li>- XD Team Collaboration Features</li> </ul>
<b>Software Architecture</b>				
Week 1-3	System Design Basics, Micro-services	<ul style="list-style-type: none"> <li>- Designing Data-Intensive Applications by Martin Kleppmann</li> </ul>	<ul style="list-style-type: none"> <li>- Design an architecture for a social media platform</li> </ul>	<ul style="list-style-type: none"> <li>- Lucidchart or Draw.io for diagramming</li> </ul>
Week 4-6	Scalability, Performance Optimization	<ul style="list-style-type: none"> <li>- System Design Primer</li> </ul>	<ul style="list-style-type: none"> <li>- Optimize database queries</li> </ul>	<ul style="list-style-type: none"> <li>- AWS Architecture Tools</li> </ul>
<b>QA Engineering</b>				
Week 1-2	Manual Testing Basics	<ul style="list-style-type: none"> <li>- Testing Computer Software by Cem Kaner</li> <li>- ISTQB Foundations</li> </ul>	<ul style="list-style-type: none"> <li>- Test an e-commerce website</li> <li>- Bug Reporting Practice</li> </ul>	<ul style="list-style-type: none"> <li>- Jira for test tracking</li> <li>- TestRail for test case management</li> </ul>
Week 3-6	Automation Testing (Selenium, Cypress)	<ul style="list-style-type: none"> <li>- Test Automation University</li> </ul>	<ul style="list-style-type: none"> <li>- Write test cases for a web app</li> <li>- Selenium Project Ideas</li> </ul>	<ul style="list-style-type: none"> <li>- Browser-Stack for cross-browser testing</li> </ul>
Week 7-8	Performance and Security Testing	<ul style="list-style-type: none"> <li>- OWASP Testing Guide</li> </ul>	<ul style="list-style-type: none"> <li>- Load test with JMeter</li> <li>- Penetration test a small API</li> </ul>	<ul style="list-style-type: none"> <li>- OWASP ZAP for security testing</li> </ul>
<b>DevOps</b>				
Week 1-2	CI/CD Basics, Git, Docker	<ul style="list-style-type: none"> <li>- The Phoenix Project by Gene Kim</li> <li>- Docker Documentation</li> </ul>	<ul style="list-style-type: none"> <li>- Set up CI/CD with GitHub Actions</li> <li>- Create a Dockerized web app</li> </ul>	<ul style="list-style-type: none"> <li>- Jenkins for pipeline</li> <li>- Docker Hub for container collaboration</li> </ul>
Week 3-5	Kubernetes, Infrastructure as Code	<ul style="list-style-type: none"> <li>- Kubernetes Tutorials</li> </ul>	<ul style="list-style-type: none"> <li>- Deploy an app using Kubernetes</li> <li>- Practice with Terraform</li> </ul>	<ul style="list-style-type: none"> <li>- Kubernetes Dashboard</li> </ul>
Week 6-8	Advanced Monitoring and Security	<ul style="list-style-type: none"> <li>- Prometheus &amp; Grafana Docs</li> </ul>	<ul style="list-style-type: none"> <li>- Monitor a live app</li> <li>- Use Grafana to visualize server performance</li> </ul>	<ul style="list-style-type: none"> <li>- Prometheus and Grafana Tools</li> </ul>
<b>Project Management</b>				
Week 1-2	Agile, Scrum Basics	<ul style="list-style-type: none"> <li>- Scrum: The Art of Doing Twice the Work in Half the Time by Jeff Sutherland</li> </ul>	<ul style="list-style-type: none"> <li>- Plan a mock sprint with your team</li> </ul>	<ul style="list-style-type: none"> <li>- Trello/Asana for Agile project management</li> </ul>

Week 3-4	Stakeholder Management, Communication	- Agile Alliance Resources	- Create stakeholder communication templates	- Miro for stakeholder mapping
Week 5-6	Advanced Planning and Risk Management	- PMBOK Guide	- Draft a risk management plan	- Microsoft Project
<b>Customer Support</b>				
Week 1-2	CRM Tools, User Feedback Collection	- Zendesk Academy	- Set up a helpdesk system	- Zendesk or Freshdesk
Week 3-4	Effective Communication	- Customer Support Handbook by Sarah Hatter	- Write FAQ documents	- Slack for internal communication

#### Additional Notes:

##### Internships & Industry Certifications:

Encourage internships after the 4th semester.

Certifications: AWS Certified Developer, Scrum Master Certification, Google UX Design Certification.

##### Electives:

Mobile Development (Flutter/Swift/Kotlin).

Advanced QA: Security Testing, Penetration Testing.

Advanced DevOps: Terraform, Monitoring with Prometheus/Grafana.

#### Capstone Project (Final Semester)

##### Build a team project integrating all skills:

Example: A scalable e-commerce platform with a fully functional frontend, backend, CI/CD pipeline, UX research, and customer support.

##### Collaborate on:

GitHub for version control.

Trello for Agile sprints.

Miro for UX design.

Slack/Discord for communication.

This schedule ensures you gain theoretical knowledge, practical skills, and collaborative experience to master these domains. Let me know if you'd like to refine or customize any sections!