THIRD-YEAR AND FOURTH-YEAR SYLLABUSES

Third Year - Advanced Developer Skillset

Frontend Development:

1.HTML5/CSS3:

- Advanced CSS: Transitions, animations, advanced Flexbox/Grid layouts.
- JavaScript (Advanced):
- ES6+ features, promises, async/await, fetch API, modules.

2.Frameworks/Libraries:

- React.js (Advanced):
- Hooks, routing, context API, lifecycle methods.
- Backend Development:

3.Java (Advanced):

- Multithreading, collections, lambdas, streams, JDBC.
- Python (Advanced):
- Generators, decorators, exception handling, file I/O, modules.

4.Databases:

- MySQL/PostgreSQL (Advanced):
- Stored procedures, views, database design principles.

5.Cloud (Intermediate):

- AWS/Azure (Hands-On):
- EC2/S3 setup, deploying a simple app, understanding cloud storage and compute services.

6..NET Development:

- C# (Advanced):

    LINQ, exception handling, file I/O, threading.

- ASP.NET Core:

    Introduction to MVC pattern, building simple APIs.

7.UI/UX Design (Intermediate):

- UX:

    Journey mapping, user flow, interactive prototypes.

- UI:

    Responsive design principles, interactive design, accessibility basics.

8.Business Development & Engagement:

- Advanced Business Concepts:
- Product-market fit, B2B/B2C engagement, customer retention strategies.

9.Presentation Skills:

- Pitching ideas, business development plans, handling client presentations.

10.Software Testing:

- Manual & Automation Testing:
- Advanced testing, regression testing, load testing.
- Automation: Advanced Selenium, API testing with Postman.

Certifications & Projects (3rd Year)

Certifications:
- 3-Year Certification.
- Internship Certificate.
- Course Completion Certificate.

Projects:
- 2 Live Projects (complex problem-solving).
- 5 Website Building (real-world web development).

- Work with Technopuls Teams on real-world projects.
- Pre-placement Opportunities: Exposure to potential job opportunities and internships.

Fourth Year (BE) Skillset Syllabus

.NET Full Stack Developer Skillset

1. Frontend Development:

• HTML5/CSS3: Semantic markup, responsive design, Flexbox, Grid.

• JavaScript/TypeScript: ES6+ features, DOM manipulation, event handling.

• Front-End Frameworks:
 o Angular
 o React.js
 o Blazor

• CSS Preprocessors: SASS/SCSS.

• UI/UX Design Tools: Adobe XD, Figma, Bootstrap, Material Design

2. Backend Development:

• .NET Core / ASP.NET Core
• C#
• Entity Framework Core
• RESTful Services
• Authentication/Authorization
• Microservices
• Docker
• Azure
• Unit Testing

3. Database:

• SQL Server
• NoSQL (MongoDB, Redis)
• ORM Tools (Entity Framework, Dapper)

4. DevOps and CI/CD:

- Version Control: Git
- CI/CD: Azure DevOps, Jenkins
- Infrastructure as Code: Terraform, ARM templates

5. Soft Skills:

- Problem-solving
- Collaboration
- Agile/Scrum methodologies

Java Full Stack Developer Skillset

1. Frontend Development:

- HTML5/CSS3
- JavaScript/TypeScript
- Front-End Frameworks (Angular, React.js, Vue.js)
- CSS Preprocessors
- UI/UX Design Tools: Adobe XD, Figma, Bootstrap, Material Design

2. Backend Development:

- Java 8+
- Spring Framework
- RESTful Services
- Microservices
- Hibernate
- Containerization
- Cloud Platforms
- Unit Testing

3. Database:

- Relational Databases (MySQL, PostgreSQL, Oracle)
- NoSQL (MongoDB, Cassandra)
- ORM Tools (Hibernate, JPA)

4. DevOps and CI/CD:

- Version Control: Git
- CI/CD: Jenkins, GitLab CI, CircleCI
- Infrastructure as Code: Terraform, Ansible

5. Soft Skills:

- Problem-solving
- Collaboration
- Agile/Scrum methodologies

Cloud Engineer Skillset

1. Cloud Platforms:

• AWS, Azure, Google Cloud Platform

2. Infrastructure as Code (IaC):

• Terraform, CloudFormation (AWS), ARM Templates (Azure)

3. Containerization and Orchestration:

• Docker, Kubernetes
• Serverless Architectures

4. DevOps and CI/CD:

• Jenkins, GitLab CI, CircleCI, Ansible
• Configuration Management
• Monitoring and Logging

5. Networking and Security:

• VPC, VPN, Load Balancing, Security
• Compliance (PCI-DSS, HIPAA, GDPR)

6. Automation and Scripting:

• Python, Bash, PowerShell
• Jenkins, GitLab CI

7. Soft Skills:

• Problem-solving
• Collaboration
• Agile/Scrum methodologies

UI/UX Designer Skillset

1. UX Design:

• User Research
• Information Architecture
• Wireframing and Prototyping
• User Testing
• User Flows

2. UI Design:

• Design Tools (Adobe XD, Figma, Sketch)
• Graphic Design
• Typography
• Color Theory
• Responsive Design

3. Interaction Design:

• Microinteractions
• Designing for Accessibility

4. Frontend Collaboration:

• HTML/CSS
• Design Handoff
• Component Libraries

5. Soft Skills:

• Collaboration
• Communication
• Creativity
• Agile/Scrum methodologies

Certifications & Projects (4rd Year)

Certifications:
- 3-Year Certification.
- Internship Certificate.
- Course Completion Certificate.

Projects:
- 2 Live Projects (complex problem-solving).
- 5 Website Building (real-world web development).

Opportunities:

- Work with Technopuls Teams on real-world projects.
- Pre-placement Opportunities: Exposure to potential job opportunities and internships.