**Technical Design Document (TDD)**

**1. Introduction**

* Purpose of the Document
* Scope of the System
* Target Audience
* Definitions and Acronyms

**2. System Overview**

* High-Level Description of Connect Platform
* Key Features
* User Roles and Personas (Students, Experts, Admins)
* Supported Platforms (Web, Mobile)

**3. Requirements**

**3.1 Functional Requirements**

* User registration, authentication, and profile management
* Expert profile creation and browsing
* Mentorship program features
* Project showcase and feedback mechanisms
* Discussion forums
* Webinars and workshops
* Real-time interactions (chat, video calls, Q&A)
* Analytics and performance tracking
* Content moderation and reporting

**3.2 Non-Functional Requirements**

* Performance and scalability targets
* Security and privacy requirements
* Usability and accessibility standards
* Availability and reliability goals

**4. System Architecture**

* High-level architecture diagram
* Description of major system components and their interactions
* Technology stack overview (frontend, backend, databases)
* Third-party integrations (social login, analytics, video APIs)

**5. Detailed Component Design**

**5.1 Frontend (Web & Mobile)**

* Frameworks and libraries
* UI/UX principles
* Responsive design considerations
* Navigation and user flows

**5.2 Backend**

* Chosen programming language(s)
* API design (REST/GraphQL endpoints)
* Microservices/monolith decision
* Authentication and authorization flows (including social login)

**5.3 Database & Storage**

* Database choices (relational/NoSQL and rationale)
* Data models and ER diagrams
* Storage for media/files

**5.4 Real-Time Communication**

* Chat and messaging protocols (WebSockets, etc.)
* Video call and webinar integration
* Scheduled Q&A sessions

**5.5 Content Moderation & Reporting**

* Community reporting mechanisms
* Automated and manual moderation workflows
* Flagging and escalation process

**5.6 Analytics & Performance Tracking**

* Custom analytics dashboard design
* Metrics to be tracked
* Data collection and processing methods

**6. Security Considerations**

* User data protection
* Secure authentication and authorization
* Content privacy and moderation
* Compliance (GDPR, etc.)

**7. Deployment & Hosting**

* Preferred deployment (on-premises servers)
* CI/CD pipeline overview
* Backup and disaster recovery

**8. Integration & External Services**

* Social login providers (Google, LinkedIn, etc.)
* Video and webinar services
* Project management/communication tool integrations

**9. Testing Strategy**

* Unit, integration, and end-to-end testing
* Test data and environment setup
* Performance and load testing
* Security testing

**10. Monitoring & Maintenance**

* System monitoring tools and alerts
* Logging strategies
* Maintenance plans and update processes

**11. Future Considerations**

* Scalability strategies
* Planned feature enhancements
* Support for additional platforms or integrations

**12. Appendices**

* Glossary of terms
* Reference links and resources
* Revision history