Job Description

Position Title	Forward Deployed Engineer
Department	Information Technology Department
Reporting To	Lead, Technology Advancement
Type of Position	Full Time

POSITION DESCRIPTION

The Information Technology Department at Habib University is seeking a Forward Deployed Engineer to work at the intersection of software engineering, technology innovation, and business operations.

The incumbent will work directly with university departments and stakeholders to understand operational challenges, identify opportunities for technological improvement, and design, develop, and deploy practical technology solutions. The role requires a hands-on engineer who can translate complex business requirements into functional applications, integrations, automated workflows, and intelligent systems.

The Forward Deployed Engineer will take ownership of solutions throughout their lifecycle, from requirements discovery and rapid prototyping to deployment, integration, and continuous improvement. The incumbent will leverage modern software engineering practices, cloud technologies, APIs, data platforms, and emerging technologies, including Artificial Intelligence, to improve institutional efficiency and user experience.

The role requires strong technical capabilities, adaptability, problem-solving skills, and the ability to communicate effectively with both technical and non-technical stakeholders.

DUTIES AND RESPONSIBILITIES

1. Stakeholder Engagement & Requirements Engineering

- ✓ Work directly with university departments to understand their operational processes, challenges, and technology requirements.
- ✓ Conduct stakeholder consultations, workflow assessments, and requirements-gathering sessions.
- ✓ Translate business and operational requirements into technical specifications and implementation plans.
- ✓ Identify opportunities for process automation, system improvements, and technology-driven efficiencies.
- ✓ Act as the technical point of contact between the Technology Advancement team and university departments.

2. Software Development & Solution Engineering

- ✓ Design, develop, and deploy full-stack applications, internal tools, and technology solutions based on institutional requirements.
- ✓ Build rapid prototypes and proof-of-concept solutions to validate ideas and demonstrate feasibility.
- ✓ Develop scalable backend services, APIs, frontend applications, and database solutions.
- ✓ Work with modern software development frameworks, programming languages, and development tools.
- ✓ Maintain, enhance, and troubleshoot existing applications and systems.
- ✓ Ensure solutions follow appropriate standards for maintainability, performance, reliability, and security.

3. System Integration & Workflow Automation

- ✓ Design and implement integrations between existing university systems and third-party platforms.
- ✓ Develop APIs, middleware, and data exchange mechanisms to enable seamless communication between applications.
- ✓ Identify repetitive manual processes and implement automation solutions.
- ✓ Develop automated workflows to improve operational efficiency and reduce administrative overhead.
- ✓ Ensure data consistency, integrity, and reliability across interconnected systems.

4. Artificial Intelligence & Emerging Technologies

- ✓ Explore and implement AI-driven solutions to address institutional and departmental challenges.
- ✓ Develop and integrate AI-powered applications, intelligent assistants, chatbots, and automated decision-support workflows.
- ✓ Work with Large Language Models (LLMs), retrieval-augmented generation (RAG), and AI APIs where appropriate.
- ✓ Evaluate emerging technologies and assess their practical applications within the university.
- ✓ Develop proof-of-concept implementations and transition successful solutions into production environments.

5. Deployment, Infrastructure & Production Support

- ✓ Deploy and maintain applications across cloud and on-premises environments.
- ✓ Work with cloud infrastructure, containerization, CI/CD pipelines, and application hosting environments.
- ✓ Monitor application performance, availability, and reliability.
- ✓ Diagnose and resolve technical issues across applications, databases, integrations, and infrastructure.
- ✓ Implement appropriate security controls, access management, backup procedures, and deployment practices.
- ✓ Ensure successful handover, documentation, and ongoing operational support for deployed solutions.

6. Cross-Functional Collaboration & Continuous Improvement

- ✓ Collaborate with Technology Advancement team members to deliver institutional technology initiatives.
- ✓ Work closely with stakeholders to validate solutions, gather feedback, and implement improvements.
- ✓ Facilitate user testing, solution demonstrations, and adoption of newly developed systems.
- ✓ Maintain technical documentation, system architecture diagrams, and implementation records.
- ✓ Stay informed about emerging technologies, development practices, and industry trends.

REQUIRED JOB SPECIFICATIONS	
Required Qualification	Minimum 16 years of education in Computer Science, Software Engineering, Computer Engineering, or a related field.
Required Experience	Minimum 1–2 years of professional software development experience, including developing and deploying production-grade applications, working directly with stakeholders or business teams to translate requirements into technical solutions, and building APIs, system integrations, and database-driven applications, with exposure to cloud infrastructure and modern deployment practices.
Required Skills	✓ Strong programming and software engineering fundamentals. ✓ Full-stack application development and API engineering. ✓ Experience with modern frontend and backend frameworks. ✓ Database design, development, and optimization (SQL and NoSQL). ✓ System integration and workflow automation. ✓ Cloud platforms, application deployment, and CI/CD practices. ✓ Familiarity with AI/ML technologies, LLMs, and AI-powered application development. ✓ Strong analytical thinking and problem-solving abilities. ✓ Excellent written and verbal communication skills. ✓ Ability to work independently and collaborate with cross-functional teams. ✓ Strong requirements analysis and technical documentation skills.

REQUIRED JOB COMPETENCIES		
S#	**Competency**	**Criticality**
1	Software Development & Engineering	High
2	Requirements Analysis & Problem Solving	High
3	Stakeholder Engagement & Communication	High
4	API Development & System Integration	High
5	Workflow Automation & Process Optimization	High
6	Cloud Deployment & Infrastructure	High
7	AI & Emerging Technologies	Medium

8	Database Development & Management	High
9	Application Security & Reliability	High
10	Adaptability & Continuous Learning	High
11	Technical Documentation	Medium
12	Collaboration & Teamwork	High