4.2 Business Operation Requirements

This section defines the Business Operations Requirements (Biz Ops) for the EduFlow Staff Scheduling Mobile App. Biz Ops requirements describe the primary business purpose of the system, the organisational responsibilities involved in its use, and the operational rules under which the system is expected to operate. These requirements are expressed at an abstract level and avoid implementation detail.

Each Biz Ops requirement is explicitly linked to either a Level 0 or Level 1 node in the Requirements Tree to ensure traceability between business intent and system realisation

4.1 L0 - Mobile Device Platform

REQ-BIZ-L0-01: Mobile Device Platform Operation (Essential)
The system shall operate on commercial off-the-shelf Android and iOS mobile devices as the primary operational platform for scheduling and attendance-related activities
Constraints:
- System usage is limited to academic scheduling and attendance operations
- Access is restricted to authorised users

Assumptions:
- Users possess compatible Android or iOS smartphones
- Users are able to install and operate mobile applications

Regulations:
- Personal Data Protection Act (PDPA)

REQ-BIZ-L0-02: Mobile Attendance Interaction (Essential)
The system shall support attendance interactions through the mobile platform during scheduled teaching sessions
Constraints:
- Attendance interactions occur only during authorised teaching sessions
- Attendance interactions are limited to institutional use

Assumptions:
- Teaching staff are able to present attendance taking methods (e.g. QR codes) via institutional display methods (e.g. projectors)
- Students possess mobile devices capable of participating in attendance taking interactions

Regulations:
N/A

4.2 L1 - Application Components

REQ-BIZ-L1-01: Entry Representation (Essential)
The system shall present a visible application entry point on the mobile device that allows users to launch the application

REQ-BIZ-L1-02: User Authentication (Essential)
The system shall present an authentication interface to users prior to granting access to system functions

REQ-BIZ-L1-03: Scheduling and Timetable Presentation (Essential)
The system shall present scheduling and timetable information relevant to the authenticated user.

REQ-BIZ-L1-04: Attendance Interaction Interface (Essential)
The system shall present an interface that allows authorised users to initiate and conduct attendance interactions during scheduled sessions.

REQ-BIZ-L1-05: Attendance Information Display (Essential)
The system shall present attendance-related information to users for viewing and reference purposes.

5 Technical Requirements

This section defines the Technical Requirements for the EduFlow Staff Scheduling Mobile App. These requirements specify the technical configuration, platform compatibility, software environment, security management, and operational characteristics necessary to implement and support the system. The requirements are defined within the boundary established by the Level 0 and Level 1 nodes of the Requirements Tree.

5.1 L0 - Mobile Device Platform

REQ-TCR-L0-01: Mobile Operating System Compatibility (Essential)
The system shall be compatible with commercial off-the-shelf Android and iOS operating systems.
Constraints:
- Support is limited to mobile operating systems officially supported by device manufacturers.

Assumptions:
- Users operate devices running supported Android or iOS versions.

REQ-TCR-L0-02: Cross-Platform Application Framework (Essential)
The system shall be implemented using a development framework or approach that supports deployment to both Android and iOS platforms.
Constraints:
- Platform-specific implementations shall not prevent functional parity across supported platforms.

Assumptions:
- A single development approach can be adopted to support both platforms.

REQ-TCR-L0-03: Programming Language and Tooling (Essential)
The system shall be developed using industry-supported programming languages and development tools suitable for mobile application development.
Constraints:
- Unsupported or deprecated languages and tools shall not be used.

Assumptions:
- Development tools selected are compatible with the institution's IT environment.

REQ-TCR-L0-04: Hosting and Server Environment (Essential)

The system shall rely on an institution-managed or vendor-managed server environment to support application services and data storage.

Constraints:

- Hosting solutions must be compatible with the institution's existing IT infrastructure.

Assumptions:

- Server and network infrastructure are provisioned outside the project scope.

REQ-TCR-L0-05: Data Security Management (Essential)

The system shall implement technical measures to protect personal and attendance-related data during storage and transmission.

Constraints:

- Security controls must be applied consistently across mobile and server components.

Assumptions:

- Users access the system through trusted personal or institutional devices.

Regulations:

- Personal Data Protection Act (PDPA)

REQ-TCR-L0-06: Browser and Device Constraints (Acceptable)

The system shall not require browser-based access and shall be optimised for mobile device usage only.

Constraints:

- Desktop or browser-only access is outside the system scope.

Assumptions:

- Mobile devices are the primary access method for users.

REQ-TCR-L0-07: Documentation Availability (Acceptable)

The system shall be supported by appropriate technical and user documentation to facilitate deployment, operation, and maintenance.

Constraints:

- Documentation scope is limited to system usage, configuration, and maintenance guidance.

Assumptions:

- Documentation is intended for institutional IT staff and end users.

5.2 L1 - Application Components

REQ-TCR-L1-01: Authentication and Access Control Mechanism (Essential)
The system shall implement technical mechanisms to enforce authenticated and authorised access to application components.

REQ-TCR-L1-02: QR-Based Attendance Support (Essential)
The system shall support technical generation of attendance taking methods, such as QR codes, for use during scheduled sessions.

REQ-TCR-L1-03: Performance Expectations (Desirable)
The system shall be designed to provide response times of less than 3 seconds for common user interactions under normal operating conditions

REQ-TCR-L1-04: Session Continuity (Desirable)
The system shall maintain user sessions for a minimum of 8 hours without requiring re-authentication, and shall preserve unsaved attendance data for up to 15 minutes in the event of temporary network disconnection, allowing users to complete interactions without data loss.

REQ-TCR-L1-05: Maintainability and Update Support (Acceptable)
The system shall support maintenance activities, including updates and defect resolution, without disrupting core application usage.