**Assignment 1**

**Software engineering**

**Functional Requirements**

**Must Have**

1. FR-M1: Patient Registration

- Justification: Essential for capturing patient demographics and initiating care.

2. FR-M2: Medical Records Management

- Justification: Maintains a complete history of patient care, crucial for treatment decisions.

3. FR-M3: Appointment Scheduling

- Justification: Facilitates patient access to care and optimizes staff schedules.

4. FR-M4: Billing and Insurance Processing

- Justification: Necessary for managing payments and ensuring revenue flow.

5. FR-M5\*: Medication Management

- Justification: Tracks prescribed medications and allergies, ensuring patient safety.

6. FR-M6: Lab Test Orders and Results

- Justification: Supports diagnosis and treatment by managing lab data efficiently.

7. FR-M7: Access Control

- Justification: Protects sensitive patient data and ensures only authorized access.

8. FR-M8: Emergency Contact Management

- Justification: Critical for patient safety during emergencies.

**Should Have**

9. FR-S1:Staff Management

- Justification: Manages staff schedules and qualifications, enhancing operational efficiency.

10. FR-S2:Inventory Management

- Justification: Monitors medical supplies and equipment availability, preventing shortages.

11. FR-S3:Referral Management

- Justification: Ensures continuity of care by managing specialist referrals effectively.

12. FR-S4 :Treatment Planning

- Justification: Documents individualized treatment plans, improving patient outcomes.

13. FR-S5 :Reporting and Analytics

- Justification: Provides insights for operational improvement and quality assurance.

**Could Have**

14. FR-C1:Patient Communication

- Justification: Facilitates reminders and educational messages, improving patient engagement.

15. FR-C2:Telehealth Support

- Justification: Expands access to care, particularly in remote areas.

16. FR-C3: Patient Feedback System

- Justification: Collects patient satisfaction data for service improvement.

**Won't Have**

17. FR-W1:Advanced Predictive Analytics

- Justification: Not a priority at this stage, as basic reporting is sufficient.

18. FR-W2:Extensive Social Media Integration

- Justification: Not essential for core operations or patient care.

19. FR-W3: Customizable User Interfaces

- Justification: While useful, not critical for the initial implementation.

20. FR-W4:Real-Time Chat Features

- Justification: Enhancements for patient interaction can be considered later.

**Non-Functional Requirements**

**Must Have**

1. NFR-M1:Performance

- Justification: The database must handle high transaction volumes efficiently to ensure quick access during peak times.

2. NFR-M2:Security

- Justification: Robust security measures are crucial for protecting sensitive patient data and ensuring compliance with regulations.

3. NFR-M3:Availability

- Justification: High availability is necessary to ensure continuous access to critical patient information.

**Should Have**

4. NFR-S1:Scalability

- Justification: The database should accommodate growth in users and data as the hospital expands its services.

5. NFR-S2:Usability

- Justification: A user-friendly interface is essential for reducing training time and enhancing staff efficiency.