

Military Flight School Scheduling & Training Management System – Full Requirements (Summary)

Scheduling Module

Drag-and-drop scheduling for flights, sims, and academics. Includes rule-based conflict checks, real-time updates, filtered views, and integration with crew/resource data. Supports military constraints like duty hour limits and qualification requirements. Non-functional: fast load, concurrency-safe edits, role-based access, encryption, and modular integration.

Crew Management Module

Profiles for all personnel with rank, qualifications, currency tracking, availability, and flight logs. Integrates with scheduling for qualified assignments. Includes document storage, leave management, role-based profile views. Emphasizes secure PII handling and integration with official personnel systems.

Authorization Module

Mission approval workflow with biometric verification. Supports multi-level authorization, digital signatures, audit logging, and risk assessment integration. Non-functional: fast biometric auth, DoD compliance, secure logging.

Training Records Module

Digital gradebook with electronic forms, curriculum management, version control, and progress tracking. Offline grading capability, locked records post-signoff, integration with Crew Management for qual updates. Supports multiple grading systems and syllabus alerts.

Notifications Module

Real-time alerts for schedule changes, training events, and qualification expiries via in-app, email, push. Customizable preferences with mandatory alerts for critical updates. Domain-specific: ops alerts, training deadlines, chain-of-command notifications. Non-functional: minimal latency, reliable delivery, secure channels.

Reporting Module

Standard/custom reports, KPI dashboards, and exports (PDF, Excel). Includes daily schedules, student progress, readiness metrics, and compliance tracking. Optimized for accuracy, security, fast generation, and military-specific formats like Flight Authorization logs.

Resource Management Module

Tracks aircraft, sims, and facilities with availability, maintenance integration, and deconfliction. Supports domain rules like turnaround times, tail restrictions, backup resource planning. Integrates with scheduling.

System Administration Module

Manages accounts, roles, permissions, settings, integrations, and audit logs. Supports CAC/PIV login, STIG compliance, backups, multi-tenancy. Domain: terminology localization, audit readiness, disaster recovery export tools.

Cross-Cutting Development Considerations

Security: Role-based access, CAC/biometric MFA, encryption, audit logging. Modularity: Loose coupling, APIs, configurable rules. Scalability: Horizontal scaling, caching, efficient DB queries. Performance: Optimized UI, async background jobs, <2s load. Maintainability: Clean code, automated tests, admin self-service configs. Compliance:

DoD security accreditation, records retention, accessibility.