

Team 25 - Hoosier Hub PRD

Date: Nov 15, 2025

1. Objective

Indiana University lacks a unified system for discovering and booking study spaces, labs, equipment, and tutoring sessions. Students, staff, and admins rely on emails, spreadsheets, and inconsistent workflows.

Hoosier Hub provides a single IU-branded platform to handle the full lifecycle: discover → book → approve → monitor → analyze.

Goals: Reduce confusion, eliminate double-booking, streamline approvals, improve visibility, meet IU security, and provide documentation for Capstone evaluation.

2. Stakeholders

Students: Search resources, book slots, join waitlists, review spaces, message owners. **Staff Owners:** Approve/reject requests, manage availability/downtime, communicate with students, track utilization.

Admins: Oversee campus-wide bookings, book for users, handle escalations, update site pages, run analytics. **Instructors:** Review system documentation (DT/APA/PM/security) and validate responsible AI behavior.

3. Non-Goals

No mobile app. No payment processing. No building access integration. No AI approvals.

4. Core Features

Discovery & Booking

- Search/filter resources; view reviews.
- Resource detail pages with availability, slot picker, messaging, reviews.
- Waitlist join; automatic promotion with logs.
- Admin-only actions: Book-for-User, Request Admin Booking.

Booking Rules & Validation

- 1-10 hour limits; overlap prevention; restricted-access handling.
- Server-side enforcement with full audit logs.

Staff Tools

- Owner Inbox with badges.
- Approve/reject; message students.

- Create self-bookings; block downtime.
- "My Resources" and "My Bookings" dashboards.

Admin Suite

- KPI Dashboard: pending requests, utilization, waitlists.
- Quick Actions (Book-for-User, Edit Pages, New Resource).
- Admin Inbox for escalations.
- Analytics cards + email log.

AI Concierge (Nova)

- Answers questions using `/docs/context` with required citations.
- Provides fallback MENU mode when unavailable.
- Cannot approve or initiate bookings.

Documentation & Testing

- Required deliverables: DT/APA/PM/security.
- Acceptance tests for major flows.
- Pytest coverage: booking rules, DAL, auth, security.
- AI evaluation tests.

5. Success Metrics

- $\geq 95\%$ booking success.
- Owner inbox cleared daily.
- < 5 unresolved admin booking requests.
- 0 AI hallucinations.
- 100% Pytest pass.
- Updated `/docs/context` with each flow change.

6. Constraints

IU SSO required; full auditability; responsive web only; no AI decision-making; concurrency-safe DAL.

7. Risks & Mitigations

- Approval delays → owner/admin dashboards.
- AI misuse → strict citation + fallback.
- Double-booking → transactional validation.

8. Open Questions

Emergency admin overrides? Review moderation? Predictive analytics in future phases?