# Padh.ai - Detailed MVP Plan

Version: 1.3 (Multi-Exam Scope)

Date: October 10, 2025

Status: Actionable build plan for the initial web application.

### 1. Introduction & Revised Goals

This document outlines the features, technology, and strategy for the Minimum Viable Product (MVP) of Padh.ai. The primary goal is to validate our core business hypothesis across multiple high-stakes exam categories with minimal initial investment and maximum learning.

**Revised Hypothesis:** "Students preparing for major competitive exams (UPSC, JEE, NEET) will pay for a service that provides tangible relief from the anxiety of preparation by automating planning and optimizing learning, thereby saving them time and mental energy."

**Core Strategy:**

* **Market the Outcome:** We are selling clarity, control, and relief from anxiety, tailored to the unique pressures of each exam.
* **Lower the Barrier to Entry:** Automate high-friction tasks to ensure users experience value quickly, regardless of their chosen exam.
* **Implement a Value-Based Paywall:** Encourage conversion by gating high-value, time-saving features that are universally beneficial to all students.
* **Build a Flexible Monolith:** Prioritize a rapid launch with a single backend capable of handling different exam structures, deferring microservices until scale demands it.

### 2. Target Audience: Primary Segments

For the MVP, we will target three distinct, high-density exam categories. While this broadens our reach, it requires a nuanced approach to product and marketing.

* **UPSC Aspirants:** Characterized by a long, multi-year preparation cycle, a vast and dynamic syllabus (including current affairs), and a need for deep conceptual understanding and writing skills.
* **JEE (Engineering) Aspirants:** Characterized by a focus on problem-solving speed and accuracy in Physics, Chemistry, and Mathematics. Their learning is highly quantitative and practice-oriented.
* **NEET (Medical) Aspirants:** Characterized by the need to memorize a large volume of specific information, particularly in Biology, alongside conceptual understanding in Physics and Chemistry.

### 3. Feature Breakdown: Free vs. Core Pass

The freemium model is designed to be universally appealing, letting all students experience the core organizational benefits for free while offering powerful efficiency tools in the paid tier.

#### **Tier 1: Free Plan (The "Clarity" Tier)**

The goal of the free tier is to solve the universal student problem of "Where do I start?" and build a daily habit.

| **Feature** | **User Story** |
| --- | --- |
| **Multi-Exam Onboarding & Planning** | As a student, I want to select my specific exam (UPSC, JEE, or NEET) and target year, and have a clear, day-by-day study plan generated instantly for my syllabus, so I can overcome my initial paralysis. |
| **Unlimited Manual Flashcards** | As a user, I want to create as many flashcards as I need to cover my specific syllabus without arbitrary limits. |
| **Standard SRS Review** | As a user, I want the app to automatically schedule my flashcard reviews using a proven algorithm (SM-2) so I don't forget what I've learned. |
| **Active Recall Quizzes** | As a user, I want to test my knowledge with basic quizzes after a study session to reinforce my learning. |
| **Metacognitive Journal** | As a user, I want a daily prompt to reflect on my learning, helping me become aware of my challenges and feel supported. |
| **Daily Streaks** | As a user, I want to be motivated to engage daily with a simple streak counter for my review and journal habits. |

#### **Tier 2: Core Pass (The "Efficiency" Tier)**

The goal of the Core Pass is to deliver on the promise of "learning smarter, not just harder" and is the key to our monetization strategy.

| **Feature** | **User Story (Value Proposition)** |
| --- | --- |
| **AI Flashcard Generator** | **"Stop wasting hours creating flashcards."** As a paying user, I want to upload my PDF notes or paste text and have the app automatically suggest a deck of relevant flashcards for my subject, so I can spend my time learning, not typing. |
| **AI-Optimized Scheduling** | **"Learn the same material faster."** As a paying user, I want to unlock an advanced SRS algorithm that adapts to my personal forgetting curve, scheduling reviews more efficiently to save me time. |
| **Advanced Analytics** | **"Know exactly where you stand."** As a paying user, I want to see a detailed breakdown of my strongest and weakest topics so I can focus my efforts where they matter most. |

### 4. Lean MVP Technology Stack

The technology stack is chosen for rapid development but must be flexible enough to handle the added complexity of multiple exam structures.

* **Architecture: Flexible Monolith**
  + A single, well-structured backend application designed with clear separation of concerns to handle the distinct logic for UPSC, JEE, and NEET syllabus structures and planning.
* **Frontend:**
  + **Framework:** Next.js (React)
  + **Styling:** Tailwind CSS
* **Backend:**
  + **Framework:** Python with FastAPI
  + **Note on Complexity:** The backend logic for the rule-based planner will be significantly more complex, requiring distinct modules or configuration files for each exam's syllabus, topic weighting, and standard timelines.
* **Database:**
  + **Type:** PostgreSQL
  + **Note on Schema:** The database schema must be designed to support multiple exams from day one. This includes tables that associate users, subjects, topics, and study plans with a specific exam\_id.
* **AI/ML Features ("Fake the AI"):**
  + **Implementation:** All NLP/LLM features, specifically the **AI Flashcard Generator**, will be powered by API calls to a third-party model (e.g., Google's Gemini API).
* **Authentication:**
  + **Service:** A third-party service like Clerk, Supabase Auth, or Firebase Auth.
* **Deployment:**
  + **Platform:** A managed platform like AWS Elastic Beanstalk, Heroku, or Vercel (for frontend) and a simple cloud provider setup (for backend).

### 5. Deferred Features (Post-MVP)

To maintain focus, the following features are explicitly out of scope for the MVP launch:

* Native mobile applications (iOS/Android)
* Full Deep Understanding Toolkit (Feynman Technique, "Why Bot," etc.)
* Full Holistic Support Module (Anxiety Monitoring, Study Circles)
* Support for exams beyond UPSC, JEE, and NEET
* Custom-built AI/ML models