



## **StudyBuddy: AI-Powered Study Group Matcher**

Project Proposal  
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## **Keywords**

Study group formation, stable matching, learning analytics, AI study coach, calendar scheduling, embeddings, accessibility

## **Abstract**

Students struggle to find study partners that are mutually compatible, coordinate schedules, and schedule productive session times. StudyBuddy is a website application that forms high-quality study groups and generates AI-supplemented session agendas. Students enter with campus SSO, import class schedules, set preferences (topics, timeslots, languages, learning goals), and are matched into groups by stable-matching augmented with semantic topic similarity from text embeddings. Before each session, an LLM generates a short agenda, practice questions, and a 60–90 minute schedule tailored for class and imminent tests. The system integrates with Google Calendar/Calendar for scheduling and has lightweight chat and checklist tracking. Front-end is React + Tailwind; backend is Node.js/Express w/ Postgres. Real-time notifications are handled by WebSockets and all AI invocations are privacy-preserving w/ opt-in data usage.

## **Body of Proposed Work**

### **1. Problem & Motivation**

Finding dependable study partners in big classes takes time, and open group chats rarely turn into regular, focused study meetups. Students do better with a simple plan, like a checklist and targeted practice, but they often don't have time to make one. My goal is to make it easy to form good-fit groups and provide quick, built-in guidance so each session stays focused, fair, and easy to measure.

### **2. System Overview**

StudyBuddy has three parts: a web app, a server, and a database. In the web app, you sign in, set what you need help with, pick times, and see your group and study plan. The server handles login, finds good partners by checking topic match and shared free time, creates a short agenda,

updates your calendar, and tracks basic usage. The database saves accounts, classes, schedules, groups, sessions, messages, and feedback. An AI helper suggests matches and builds timed agendas with practice questions. You also get live invites and reminders, plus Google Calendar and Canvas/CSV import

### 3. Key Features

- Campus login + quick profile.
- Import classes (CSV or manual).
- Pick times + topics; say what you need help with.
- Smart matching (time overlap + similar topics).
- Auto agendas (objectives, tasks, 4–6 practice Qs).
- Calendar sync + reminders.
- Group chat + checklists.
- Privacy controls (opt-in, delete anytime).

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