PRD: Subject Spotlight

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Vision

For Northeastern University students who struggle to select courses and professors due to insufficient insights, Subject Spotlight is a comprehensive platform that provides detailed course information, professor reviews, and peer recommendations. Unlike existing fragmented solutions, we offer a centralized source of trusted, community-driven content.

Motivation

Customer Segments:

On a high level, we have the target segments as below.

- Northeastern University's Students
- Northeastern University's Alumni

Northeastern University Students:

- Northeastern University Students: This large group (approximately 45,000 students) seeks reliable
 information to make informed course and professor choices, optimizing their academic
 experience and supporting their aspirations within Northeastern. Additionally, this segment will
 provide reviews to help their peers make informed decisions about course selection.
- Transfer Students: These students face unique challenges with unfamiliar course options and a lack of established peer support. They need comprehensive resources to understand the nuances of Northeastern's offerings and make successful academic transitions.
- Students Looking to Change Majors/Minors: This segment requires in-depth information and peer insights to explore new academic paths. They need guidance evaluating potential courses, professors, and the overall impact that a major or minor switch might have on their academic journey.

Northeastern Universities Alumni

 Northeastern Alumni: This segment comprises former graduates who are motivated to give back to the Northeastern community by sharing their valuable academic experiences. They have unique insights into courses, professors, and career paths within their majors. Their knowledge is crucial for helping current students navigate their academic choices

<u>Early Adopters</u>: Likely to be students highly engaged in their academics, proactively seeking to optimize their learnings, and comfortable with technology and sharing feedback online. They might be transferring students facing a pressing need for information, or students dissatisfied with their current course selection process.

<u>Mainstream Users:</u> Over time, the platform's value should become evident to the broader student body, particularly those making major course decisions or looking to explore new academic areas.

User Persona:

Short Bio/History

The Practical Graduate Student

Prudhvi is a focused graduate student seeking courses that directly translate into real-world skills and software development experience. He values practical assignments over theoretical reports.



Motivations

- Wants to apply knowledge in real job
- Aims to stand out in tech job market
- · Prefers learning useful career skills
- · Seeks continuous skill growth

Goals:

- Learn skills usable in real-world software development
- Take courses with practical projects
- Build a strong project-based portfolio
- Get a tech job where he can apply his skills

Frustrations

- Too many theoretical courses
- Lack of practical projects in class
- Hard to find relevant courses
- Gap between school learning and tech industry needs

Behaviors and Personality

- Pragmatic
- Goal-oriented
- Detail-focused
- Prefers hands-on learning experiences
- Perseveres through complex projects
- Open to feedback

Quote: "I'm not just paying for knowledge; I'm investing in skills that will get me hired."

Short Bio/History

The Inquisitive Explorer

Sahithi is a curious undergraduate who is still discovering his career path. He wants to explore different subjects and professors without compromising the quality of his education.



Motivations

- Enthusiasm for learning and exploring new areas
- Desire to make informed choices that support her future goals

Goals

- To find courses that stimulate his interest
- To identify professors whose teaching styles match his learning preferences
- Develop a skillset directly mirroring the requirements of her dream job

Frustrations

- Feeling limited by their lack of knowledge about different subjects.
- Difficulty understanding the real-world applications of courses from descriptions alone

Behaviors and Personality

- Open-minded and inquisitive
- Eager
- Values diverse learning experiences
- Enjoys learning from different perspectives
- Interested in personal and professional development through varied experiences

Quote: "I don't know exactly what I want yet, but I want to make sure every class I take is a worthwhile experience"

Short Bio/History

The Experienced Alumni

Rhythm is a recent graduate eager to guide current students by connecting the dots between their coursework and career paths. While initially unsure of her own direction, exploring different areas eventually led <u>his to</u> success.



Motivations

- Knows first-hand the stress of career uncertainty during studies
- Wants to empower students to take calculated risks and explore with purpose
- Passion for mentoring and guiding others

Goals

- Encourage students to explore even if they aren't certain of their goals
- Connect coursework to potential career paths and outcomes
- Build a network of motivated and guided students

Frustrations

- Seeing students pick "safe" courses without a larger vision
- Challenges in conveying the importance of exploration
- Finding the right platforms to share his experiences

Behaviors and Personality

- Empathetic
- Insightful
- Proactive
- Passionate about connecting education to career
- Reflective on past experiences to aid others
- Patient and understanding

Quote: "Don't be afraid to try different things; that elective might end up being the key to your dream job."

Unmet Needs

- Need for Efficient Course Comparison: "We believe Northeastern students experience difficulty efficiently comparing courses, especially in terms of difficulty, workload, and overall value."
 Evidence: Our analysis mentions students actively discussing grading patterns (80%), course worth (80%), and an interest in understanding course difficulty. This suggests a desire to easily compare courses side-by-side on these factors.
- Need for Up-to-Date & Trend-Aware Information: "We believe Northeastern students want access to current, trend-aware information on courses and professors, as it relates to evolving industry needs."
 - **Evidence:** 40% of students emphasize the importance of course relevance to future employment and industry trends. This indicates the need for reviews and insights that reflect current industry demands.
- Need for Personalized Guidance: "We believe Northeastern students desire a platform that offers

tailored course and professor recommendations based on their individual goals and learning styles."

Evidence: The survey highlights a strong focus on finding courses that match student interests and the desire to find the "right" professor. This implies a need for a system that goes beyond general reviews and helps students find their best fit.

Note: For evidence refer Appendix

Existing Solutions

- Uloop: Uloop is a platform offering anonymity and unlimited character input for users to rate
 professors and discuss courses. The platform requires users to navigate through three pages to
 reach information, which may be cumbersome for users looking for quick access. Notable for its
 clarity, Uloop does not offer a comparison feature, which may be a limitation for those looking to
 compare different educational options. Available as both an app and a website, it may not meet
 the specific needs of business schools in managing MBA applications due to its lack of
 customization.
- Koofers: Koofers provides a platform with similar features to Uloop, such as anonymity and no
 character limit for content, but stands out with its schedule maker tool, which could be useful for
 planning academic schedules. The information on Koofers is more accessible, requiring only one
 page to reach. However, like Uloop, it lacks a comparison feature and is only available via a
 website, not an app. This platform may not fully cater to the customization and functionality
 required for the MBA application process.
- Reddit: Reddit, a platform that allows for anonymous discussions and threads, does not offer
 professor ratings. It is available on both app and website platforms. Given its format of information
 being spread across three pages and the lack of specialized educational tools, it is not an ideal
 solution for graduate management education applications or data management.
- Rate My Professor: Rate My Professor is a website that allows for anonymous professor ratings. It
 has a 350-character limit for reviews and requires navigating through two pages to reach
 information. Although it provides a comparison feature, it is not an application management
 system and does not support a customized application process for MBA programs.

	U100p	koofers.com	6	RMP	
Features	Uloop	Koofers	Reddit	Rate My Professor	Subject Spotlight
Anonymity	Yes	Yes	Yes	Yes	Yes
Pages to reach info	3	1	3	2	1
Professor Ratings	Yes	Yes	No	Yes	Yes
Character Limit	No limit	No limit	No limit	350 characters	No limit
Notable Features	Clarity	Schedule maker	Discussions, Threads	None	Easy, Concise, Convenient
Comparison	No	No	No	Yes	Yes
Platform	App, Website	Website	App, Webiste	Website	App, Website

Differentiation

Subject Spotlight is the ultimate tool for informed course and professor selection. We prioritize ease of use, putting essential information directly at your fingertips. Our features like anonymity, unlimited review space, and professor ratings empower you with honest student feedback. Accessible on both our app and website, Subject Spotlight ensures reviews come from verified students, safeguarding the integrity of the information. We support alumni contributors with FAQ templates, allowing them to provide detailed, valuable insights. Subject Spotlight is your essential resource for achieving academic success.

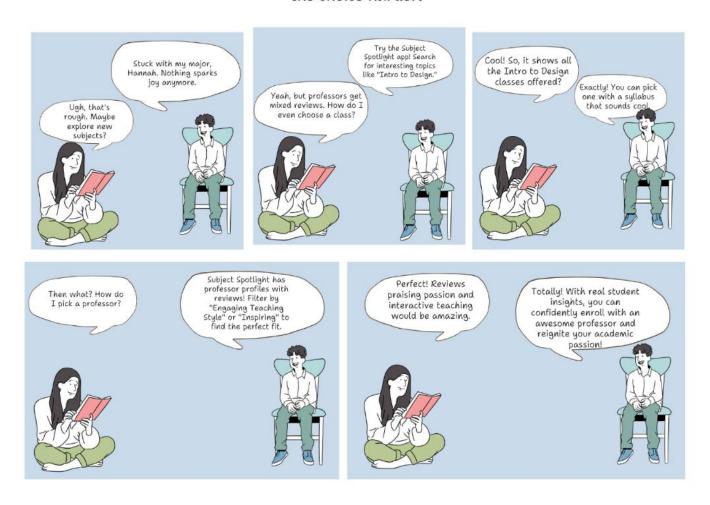
Why Now?

Both external and internal changes make this opportunity uniquely available now. Externally, there's strong market demand for a reliable course and professor information platform, as students are increasingly frustrated with existing options. This aligns with the growing trend of student empowerment. Internally, we now have the potential to tap into the valuable knowledge of our alumni network. Additionally, our university is prioritizing data-driven decision-making and better student outcomes, our solution directly supports those goals. These factors combined make this the ideal time to pursue this product.

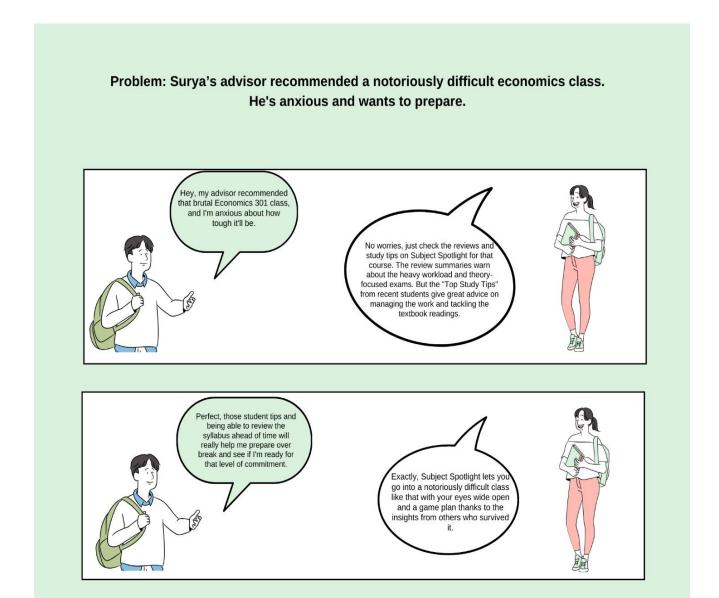
Visual Walkthrough of Use Cases

Use Case 1: Finding the right Professor.

Problem: Alice feels stuck in her current major and needs a class that sparks excitement. She's heard good and bad things about certain professors, making the choice harder.



Use Case 2: Prepping for a Tough Class



Use Case 3: Bugged by juniors about the classes to be taken

Prachi is an alumnus but has a widespread network of friends and during the days of subject registration is spammed by juniors for help although she wants to help them she is too busy.





Use Case 4: The Recent Graduate Giving Back

EMILY JUST GRADUATED AND FEELS A SENSE OF GRATITUDE FOR A PARTICULAR PROFESSOR WHO TRANSFORMED HER ACADEMIC PATH. SHE WANTS TO SHARE HER POSITIVE EXPERIENCE TO HELP OTHERS BUT LACKS A STRUCTURED WAY TO DO SO.

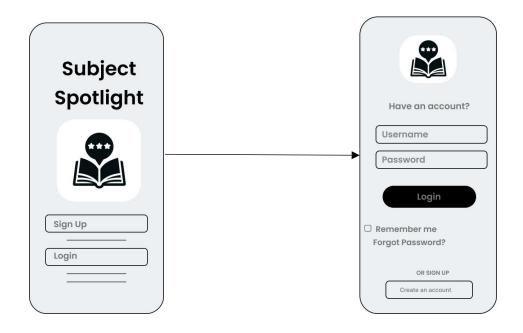








User Walkthrough: Visual Use Cases

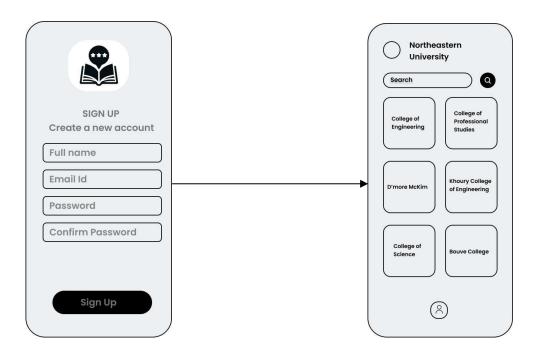


Screen 1: Login/Sign Up

When a user opens the mobile app, the screen focuses on gathering user credentials to establish a relationship with new users.

Screen 2: Existing Account

As a user, I want to be able to log in using my username and password.

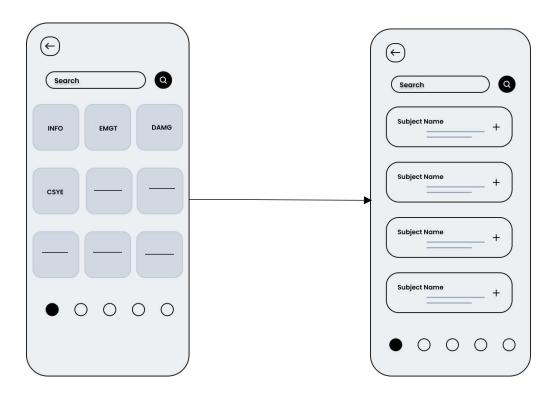


Screen 3: New User Registration

As a user, I want to be able to create a new account.

Screen 4: Home Page

As a user, I can search for my college. Once I select the college name, I will be able to see subject codes, and based on the subject codes, I can view course details. At the bottom I can also view my profile by clicking on the user profile icon.

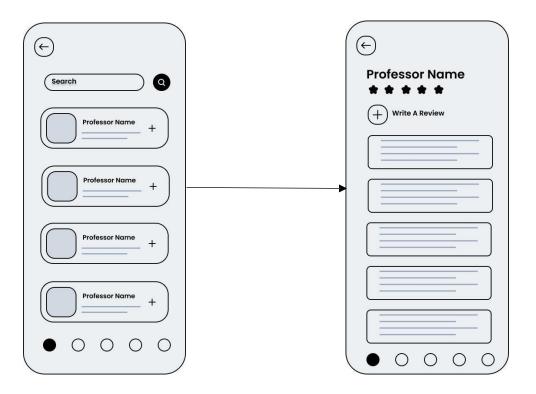


Screen 5: Course Details

After clicking on the Plus sign, as a user or student, I want to be able to view course names and see reviews for the various available courses.

Screen 6: Subjects/Electives

Here I as a user can see the electives offered and can find a brief description of it.

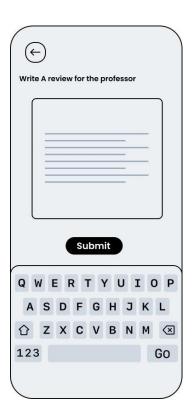


Screen 7: Professor Details

After clicking on the Plus sign, as a user or student, I want to be able to search for professor names and view their details and reviews

Screen 8: Professor Reviews

After clicking on the Plus sign, as a user or alumni, I will be able to write professor reviews and give ratings.



Screen 9: Write a Review

After writing the review with no word limit and rating the professor, and clicking on the submit button, the reviews will be submitted.

Detailed Design & Features Description

Design Principles

- Simplicity and Clarity
- Accessibility
- Community-Driven Content
- Privacy and Security
- Continuous Improvement
- Scalability and Performance
- Data-Driven Design
- Backward functionality

Features/information architecture

For Students:

Feature	Detail	Dependencies	Priority
Login/Sign Up	Users can create a new account or log in with their existing credentials. Email verification with student email to verify account	Server-side authentication and authorization. Database to store user information Email/phone number verification	P0
Course Search and Exploration	Users can search for courses based on subject codes, course names, or apply filters. Access detailed course information, including syllabus and prerequisites.	Integration with university course catalog/database. Search and filtering functionality	PO
Professor Search and Details	Users can search for professors by name and view their profiles, including biographies and research interests.	Integration with university faculty database. Search functionality	PO
Course Reviews and Ratings	Users can read verified student reviews and ratings for courses, and filter reviews based on specific criteria (difficulty, workload, grading, etc.).	User authentication for submitting reviews. Review moderation and verification mechanisms. Rating and filtering functionality	PO
Professor Reviews and Ratings	Users can read verified student reviews and ratings for professors, and filter reviews based on specific criteria (teaching style, engagement, etc.)	User authentication for submitting reviews. Review moderation and verification mechanisms. Rating and filtering functionality	PO

Personalized Recommendations	Users can receive tailored course and professor recommendations based on their interests, learning styles, and academic goals.	Machine learning algorithms for recommendations. Integration with user profile data	P1
Study Resources and Tips	Users can access study tips, notes, and resources shared by students who have previously taken the course. Users can also contribute their own materials.	User authentication for contributing content. Content moderation and organization mechanisms	P1
Notification and Reminders	Users can receive notifications and reminders about important deadlines, course registration periods, and new reviews. Users can also set personal reminders.	Push notification functionality. Integration with university academic calendar	P1
Community Engagement	Users can join subject- specific forums or discussion boards to connect with peers and share experiences. Users can also participate in Q&A sessions or webinars hosted by alumni or faculty members.	Forum and discussion board functionality. Webinar and live session integration	P2
Gamification Elements	Users can earn badges, points, or rewards for actively contributing reviews, resources, or engaging with the community.	Gamification system development. Integration with user profiles. Rewards management	С
User Dashboard	Personalized course schedule, alerts	Real-time data fetching and notification system	vNext

<u>For Alumni</u>

Feature	Detail	Dependencies	Priority
Contribute Reviews and Insights	Alumni can share detailed reviews and insights about courses, professors, and academic experiences. They can also provide guidance on industry trends and career paths.	User authentication for alumni. Review and content submission mechanisms	PO
Alumni Spotlights	Alumni can be featured in alumni spotlights, sharing their personal stories and achievements to inspire and guide current students.	Content management system for alumni spotlights. Integration with university alumni database	P2
Mentorship and Networking	Alumni can connect with current students for mentorship opportunities or networking events. They can offer guidance and support to students navigating academic and career-related challenges.	Mentorship program management Event coordination and scheduling	P2
Alumni-Exclusive Content	Alumni can access exclusive content, resources, and events tailored specifically for Northeastern alumni, fostering continuous learning and professional development.	Content management system for alumni-exclusive content. Integration with university alumni database	P2
Alumni Career Resources	Alumni can access career resources, job boards, and industry insights tailored specifically for their fields and experiences.	Integration with job boards and career resources. Content management system for career resources	С

Version 1: Minimum Viable Product (MVP)

Objective: Establish core functionalities that address the basic needs of students in selecting courses and professors.

- **User Registration**: Enable students to create personal accounts to manage their views and access personalized course recommendations.
- **Basic Search and Filter**: Implement a simple search engine to help students find courses and professors based on department, course level, and keywords.
- **Course Descriptions:** Provide detailed descriptions of each course including prerequisites, credits, syllabus, and expected workload.
- **Professor Reviews**: Allow students to read and submit reviews for professors, focusing on teaching style, effectiveness, and approachability.

vNext

Version Next: Enhance interactivity and personalization to foster a more engaged user community.

- Advanced Search and Recommendations: Introduce a more sophisticated search algorithm that considers student majors, past course feedback, and academic interests to suggest personalized course and professor options.
- **Peer Interaction and Forums**: Add discussion forums where students can ask questions and share experiences and tips related to courses and professors.
- **Alumni Networking**: Integrate a feature to schedule appointments or communicate with alumni directly through the app (direct 1-1 connections), alumni who have taken the same courses or majors, providing career advice and mentoring.
- **Achievement Badges**: Introduce a gamification system where students earn badges for contributing reviews, participating in discussions, or achieving academic milestones.

v longterm

Version Long Term: Utilize data analytics and community features to create a comprehensive academic planning tool.

- **Data Analytics Dashboard**: Provide analytics on course popularity, professor ratings, and course demand trends to help students make informed decisions.
- Advanced Notifications and Alerts: Implement a system to alert students about course enrollment openings, changes in professor assignments, and upcoming registration deadlines.

- Professional Development Workshops: Offer registration and reminders for workshops that complement academic courses, such as resume building, interview skills, and other career-preparation activities.
- Website under review and talks: Build a website for the students and the community.

Roadmap / Timing

Milestone	Timing	Notes
Internal Demo	July 2024	Validate core functions like data integration, search, review system, and user logins. Success check: Are these seamless before proceeding?
Alpha Testing	August 2024	Target: Transfer students & majors with complex choices. Focus: Evaluate course comparison tools, search clarity, finding relevant reviews. Success check: Do these genuinely aid decision-making?
Beta Launch	September - November 2024	Target: All students + targeted alumni outreach.Focus: Alumni review volume/quality, impact on decisions.Success check: Is alumni engagement robust?Are reviews influential?
Pre-Launch Prep	December 2024	Final optimizations and marketing prep for full launch aligned to Spring course registration.
Full Northeastern Launch	January 2025 (before Spring semester)	Emphasis: Ease of use, breadth of insights. Success check: Scalability, technical stability, strong adoption growth.
Post-Launch Optimization	February - April 2025	Based on usage analytics, make enhancements. Time updates to major change periods like orientation.

academic calendars.	Strategic Expansions	May 2025 onwards	Explore partnerships to roll out to 2-3 additional universities. Time launches aligned to their academic calendars.
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A few notable updates:

- Milestones are timed to major academic events like transfers, course registration periods to drive maximum visibility.
- The full Northeastern launch is scheduled for January 2025, positioning it as a trusted resource right before the peak Spring course selection rush.
- Post-launch, optimization and expansions are aligned to further capitalize on periods like orientation, major declarations across the academic year.

Important Note: We remain agile! This roadmap is responsive, adapting based on user feedback, technical realities, and market shifts.

Alternatives Considered:

- <u>Launching with Everything</u>: Risky, increases development time, and limits the ability to pivot based on early feedback.
- <u>Student-Focused Only</u>: Misses the key differentiator of alumni insights and lessens the potential for community building.

Why This Plan is Best:

- Addresses Core Needs First: Focuses on essential search and review features to solve the immediate need for reliable information.
- **Evidence-Driven Development**: Prioritizes feedback to tailor the platform to student and alumni needs effectively.
- <u>Community Foundation:</u> Early alumni involvement creates a sense of ownership and attracts more students

Metrics

User Acquisition and Engagement:

- 1. Signups: To track signups from different student groups (freshmen, transfer students, etc.) to understand early adopter trends.
- 2. Signups Triggered by Specific Needs: To monitor signups linked to searches for "course difficulty" or "professor reviews" to understand user motivations.

Content Quality and User-Generated Content:

- 1. Number of Courses Reviewed in the Semester: This shows the platform's growth in course coverage.
- 2. Number of Reviews Mentioning Specific Unmet Needs: To track reviews that address "efficient course comparison," "up-to-date information," or "personalized guidance" to see if the platform fulfils user needs.
- 3. Review Length: To monitor the average length of reviews to understand the depth of information provided.

User Satisfaction and Action:

- 1. Number of Reviews added per semester: This metric tracks the growth of user-generated content on the platform.
- 2. **Number of times reviews received a helpful mark per semester:** To measure user feedback on the quality and usefulness of existing reviews.
- 3. Net Promoter Score (NPS): To measure customer satisfaction and loyalty.
- 4. Number of Course Comparisons: To track how many times users utilize the comparison feature to evaluate different courses.

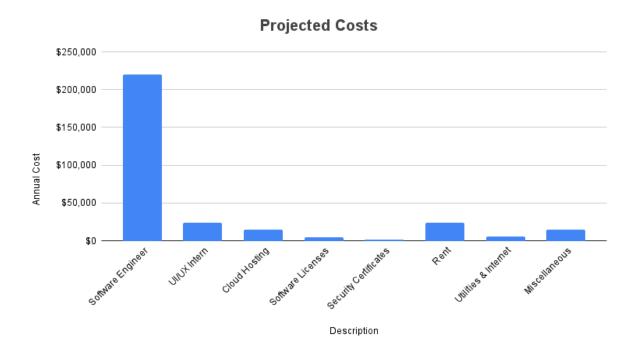
International

Subject Spotlight's potential extends beyond the US, offering the possibility for global student communities to share insights on courses and professors. However, international expansion presents complexities due to diverse educational systems and cultural expectations. Our initial focus remains on solidifying the platform within the US. Future internationalization would necessitate tailored versions of the app to accommodate variations in course structures, terminology, and review styles across countries. Careful consideration of differing privacy regulations would also be crucial for success.

Projected Costs

Ideally, we envision a development team of two software engineers (with salaries around \$90,000 plus overhead) and a UI/UX intern (\$4,000/month) completing our iOS and Android application within a realistic timeframe of 7-8 months. Factoring in engineering salaries, intern costs, and a development buffer, we estimate development costs at approximately \$240,000 for the first year. Additionally, infrastructure expenses (cloud hosting, software licenses, security, office space, utilities) are projected at \$52,000. We also anticipate allocating roughly \$18,000 as a contingency fund for unexpected expenses. This brings our estimated total costs for the first year to around \$311,000. It's important to note that marketing and user acquisition costs will be an additional factor in the overall budget, as will ongoing scaling costs if user growth is significant.

Category	Description	Annual Cost
Personnel	Software Engineer (2)	\$220,000
	UI/UX Intern	\$24,000
Infrastructure & Technology	Cloud Hosting	\$15,000
	Software Licenses	\$5,000
	Security Certificates	\$2,000
Office Space	Rent	\$24,000
	Utilities & Internet	\$6,000
Miscellaneous	Miscellaneous	\$15,000
Total Estimated Cost		\$311,000



Operational Needs

Requirement	Operational Needs
Course Information Management	Data Sourcing: Secure reliable, updated course information from the university or via dedicated data entry. Quality Control: Review procedures to ensure accuracy before publishing on the platform.
Review and Feedback Systems	Moderation: Automated tools and/or human oversight to flag inappropriate content and address disputes. User Support: Channels for technical help, issue reporting, and general feedback
Community Growth and Engagement	Moderation: Automated tools and/or human oversight to flag inappropriate content and address disputes. User Support: Channels for technical help, issue reporting, and general feedback.

Platform Evolution	Initial Promotion: Strategic launch campaign leveraging student organizations and university channels. Sustained Engagement: Incentives, features, or communications to
	encourage active user participation.

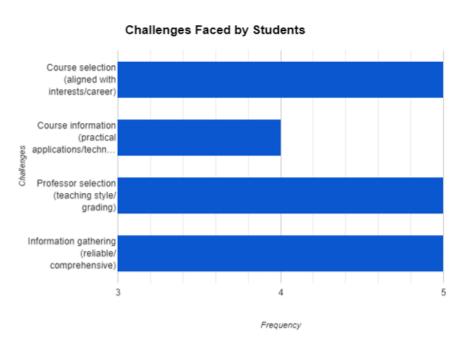
Addressing Caveats/risks

Risk	Description	Priority	Solution
Quality of Information	The app may present incomplete, subjective, or outdated information about professors and courses	High	Combine data sources (university, student reviews, advisor profiles), transparently disclose limitations, and implement systems for flagging potential inaccuracies by users.
Lack of Customization	Generic recommendations might not address individual student needs, preferences, and background.	Medium	Create detailed user profiles, integrate with university systems to understand academic progress, and tailor recommendations based on individual goals and learning styles.
Security Risks with Data Handling	Sensitive student data (grades, schedules) could be vulnerable if privacy regulations are not followed.	High	Employ data encryption, minimize data storage, adhere strictly to privacy regulations, and clearly
Dependency on External Services	Reliance on university login systems or other external services could disrupt functionality if issues arise.	Medium	Initial Promotion: Strategic launch campaign leveraging student organizations and university channels. Sustained Engagement: Incentives, features, or communications to encourage

			active user participation.
Limited Transparency for Users	Lack of understanding about the app's algorithms, biases, or limitations might lead to uninformed decisions.	Medium	Clearly explain how recommendations are generated, acknowledge potential biases, outline steps to mitigate them, and encourage users to combine app insights with their own research.

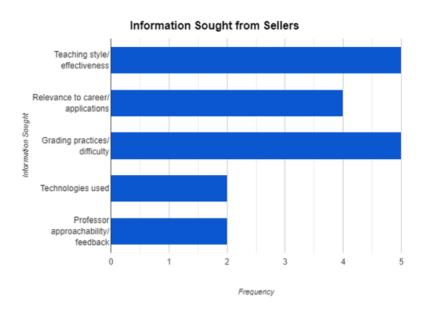
Appendix: Applicant survey results

According to our survey we interviewed students from Northeastern University (Boston campus) and categorized the students and alumni, into "buyers" (students seeking course and professor insights) and "sellers" (alumni and seniors offering their experiences). Key points for buyers include challenges in course and professor selection, reliance on peer advice, and interest in a review platform for sharing experiences. Sellers frequently share insights into teaching styles, course relevance, and grading systems, emphasizing practical knowledge and industry alignment. Both groups show a high engagement in information sharing, underlining the value of peer insights in academic decisions.

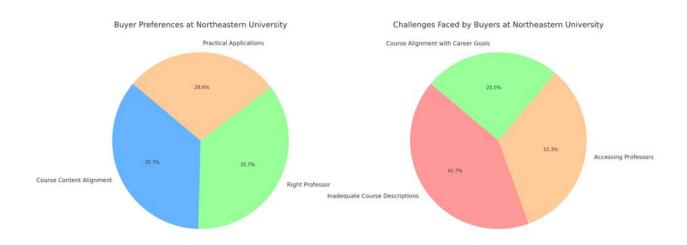


Students actively exchange insights on teaching styles, course value, grading systems, and the practical skills offered by courses, with teaching methods being universally discussed. About 80% of students seek clarity on grading and course benefits, while 60% are interested in the practical knowledge and qualifications gained through their studies. Additionally, 40% emphasize the importance of course relevance to future employment and industry trends. The majority, 80%, frequently inquire about grading patterns and course worth, with 60% focusing on teaching effectiveness and course relevance, and 40% on practical applications.

When it comes to sharing reviews, 90% of students are willing to contribute, particularly if anonymity is guaranteed, although 10% have concerns about privacy and potential fallout. This active participation underscores the significance of peer insights in educational choices and highlights the role of digital platforms in facilitating real-time academic feedback.



The diagrams below illustrate the preferences and challenges faced by the buyer segment at Northeastern University.



Buyer Preferences: The first diagram highlights the key preferences, showing equal emphasis on course content alignment with interests and finding the right professor, with a significant interest also in understanding the practical applications of courses.

Challenges Faced by Buyers: The second diagram showcases the challenges, with the majority of buyers facing issues with inadequate course descriptions, followed by difficulties in accessing professors, and concerns about the alignment of courses with career goals.

References:

- 1. https://facts.northeastern.edu/#community
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