

Structured Pathways for Student Success: A Strategic Approach to Course Optimization and Academic Excellence

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1. Introduction: Addressing the Challenges of Course Selection

Each year, nearly 40% of college students in the U.S. fail to graduate within six years, often due to course misalignment and scheduling inefficiencies [1]. Many of these students, despite being capable, find themselves trapped in an endless loop of prerequisite confusion, last-minute overrides, and unclear academic advising. Navigating course selection in U.S. universities can be a daunting challenge for students. A study by the Education Advisory Board [2] found that students who take random or excess credits are 12% less likely to graduate on time compared to those following a structured pathway.

Consider the case of *Alex (an imaginary student)*, an engineering student who, due to unclear advising and excessive elective choices, unknowingly delayed taking a critical prerequisite course by a semester. This single scheduling misstep led to an entire year of extended study, increased tuition costs, and lost job opportunities. Unfortunately, Alex's experience is not unique—thousands of students face similar setbacks due to the lack of a streamlined academic structure. To address these challenges, ***a structured semester-wise course pathway with designated elective slots*** is proposed. This hybrid model balances flexibility with academic rigor, ensuring timely degree completion while allowing students to explore personalized interests. By providing a clear roadmap, institutions can reduce advising burdens, improve retention rates, and foster a more efficient learning environment.

2. Key Benefits of a Structured Course Pathway Model

Reducing Advising Burden and Student Confusion

A clearly defined semester-wise course sequence minimizes dependence on faculty advisors for course selection. Faculty can focus on academic mentoring and career guidance rather than scheduling logistics.

Ensuring Timely Graduation and Student Retention

A structured roadmap prevents unnecessary course delays, prerequisite issues, and misaligned selections. Higher on-time graduation rates contribute to better student success metrics and institutional performance.

Eliminating Prerequisite Complexities and Administrative Burden

Managing prerequisite approvals, overrides, and last-minute exceptions is a persistent challenge that consumes valuable institutional resources. A structured course pathway significantly reduces these inefficiencies by ensuring students follow a predefined sequence, eliminating unnecessary administrative hurdles and delays. Instead of students struggling with misaligned prerequisites and faculty dealing with constant course override requests, a structured pathway streamlines academic progression. It guarantees that students complete foundational courses before advancing, improving efficiency while maintaining academic rigor.

Strengthening Academic Rigor and Knowledge Retention

Courses are taken in the correct sequence, ensuring students develop skills progressively without gaps in foundational knowledge. This approach fosters discipline-focused learning while allowing students to explore electives within structured slots.

Preserving Student Autonomy Through Elective Options

Each semester includes designated elective slots, ensuring academic flexibility without disrupting degree progression. Students can customize their learning experience without compromising on core academic structure.

3. Perspectives on HyFlex Mode: Balancing Flexibility and Structure

The HyFlex course model, short for Hybrid-Flexible, allows students to choose between in-person, synchronous online, or asynchronous learning options within the same course. For example, at San Francisco State University, HyFlex courses have been used effectively in graduate education programs, where students who cannot attend in person due to work or travel constraints can still engage with the class synchronously or asynchronously. While this flexibility benefits highly motivated learners, many students struggle with self-regulation, leading to lower engagement and retention rates.

Flexibility alone does not guarantee academic success—structured learning environments provide necessary guidance and accountability. For example, professional training programs in fields such as healthcare and aviation emphasize structured coursework and hands-on practice to ensure skill mastery. Similarly, a well-structured academic pathway keeps students on track, reinforcing discipline and knowledge retention while still allowing for strategic flexibility. While structured course pathways provide clear direction, they can be designed with built-in flexibility. For example, elective slots within the structured framework allow students to explore interdisciplinary courses while still ensuring timely graduation. This balance ensures that students have both autonomy and guidance.

At the same time, economic realities must be considered. Many full-time students work during the day to support their education, which has been cited as a reason for increasing course flexibility. However, research shows that extensive work commitments significantly contribute to student attrition, with 42% of dropouts citing financial stress as a primary factor [3].

A more balanced approach is needed—one that preserves the benefits of structured learning while accommodating students with financial or scheduling constraints. **Universities can integrate targeted Hy-Flex scheduling for working students while maintaining structured progression for full-time learners.** This ensures that students can fully engage with their education while maintaining financial stability. The table 1 below gives a comprehensive comparison of HyFlex, Hybrid and traditional models

Table1: Comparison of HyFlex, Hybrid, and Traditional Course Delivery Models

Delivery Model	Definition	Flexibility	Student Engagement	Faculty Workload	Example Use Cases
HyFlex	A hybrid-flexible model that allows students to choose between in-	High – Students can switch between	Varies – Self-motivated students benefit, but less	High – Faculty must manage multiple modes simultaneously,	Graduate programs where students have work/travel

Delivery Model	Definition	Flexibility	Student Engagement	Faculty Workload	Example Use Cases
	person, synchronous online, or asynchronous online participation for each class session.	modes as needed.	structured learners may struggle.	prepare materials for all formats, and ensure equitable assessment.	commitments, or institutions catering to geographically diverse learners.
Hybrid	A structured model where students attend a mix of in-person and online sessions based on a predefined schedule.	Moderate – Some flexibility, but students must follow set in-person and online schedules.	Typically, strong – Faculty can plan structured engagement, balancing online and face-to-face interactions.	Moderate – Faculty need to prepare for both modalities but do not need to accommodate individual switching.	Engineering courses with hands-on labs (in-person) and theoretical lectures (online).
Traditional	A fully in-person course model where students attend physical classes on campus at set times.	Low – Fixed schedule with no remote options.	High – Direct, real-time interaction with faculty and peers.	Low to Moderate – Faculty focus solely on in-person delivery without additional online content preparation.	Lab-intensive programs, medical training, and courses requiring fieldwork.

3.1 Addressing Transfer Students and Mid-Year Enrollments

A common concern regarding structured course pathways is the ability to accommodate transfer students and students who enroll outside the traditional fall semester intake. While it is important to support these students, data suggests that the majority of students enroll in universities during the fall semester, with spring and mid-year enrollments constituting a much smaller fraction. Designing the entire academic structure around the minority can disrupt the experience of the majority.

Rather than compromising structured pathways, universities can provide targeted solutions for non-traditional entrants. The HyFlex model can be strategically leveraged to offer essential courses in a flexible format for transfer students and mid-year enrollees, allowing them to integrate into structured pathways without disrupting the standardized academic schedule. This approach ensures that:

- The majority of students benefit from structured academic pathways that enhance retention and graduation rates.
- Transfer and mid-year students receive flexible options to catch up on necessary coursework without delaying their academic progression.

- Faculty resources are optimized, preventing unnecessary overburdening while maintaining academic consistency.

The dual-approach model integrates structured pathways for the majority of students while offering flexible entry points for non-traditional learners. For instance, institutions can design an accelerated track for transfer students, where essential prerequisite courses are delivered in a compressed format, allowing them to merge seamlessly into structured pathways.

4. Strengthening Student Success Through Balanced Academic and Employment Commitments

In today's evolving higher education landscape, universities continuously strive to balance academic rigor with student accessibility. A key challenge, particularly in state and small public universities, is ensuring that students who pursue full-time degrees can fully engage in their academic journey while also managing financial responsibilities. While flexibility is essential, allowing students to simultaneously enroll in full-time coursework and hold full-time employment presents significant challenges to retention and degree completion rates. Research indicates that over 64% of U.S. college students are employed, with 40% working full-time, and financial constraints are cited as a primary reason for student dropouts [3]. Given these realities, institutions can consider a more structured and intentional academic framework to support student success.

A practical framework to address this includes ensuring that students self-identify as full-time or part-time learners at the time of enrollment, aligning their academic load with their employment commitments. Students who enroll full-time should be encouraged to limit employment to evenings, nights, or weekends to maintain their focus on structured coursework. Those with full-time work responsibilities should be offered part-time academic pathways through HyFlex and evening courses, allowing them to progress at a sustainable pace.

By fostering a structured approach, universities can enhance student success and retention by ensuring realistic academic commitments. Preventing students from overextending themselves reduces unnecessary stress and dropout risks. Improving institutional planning and faculty resource allocation minimizes scheduling disruptions due to inconsistent attendance. Ensuring both full-time and part-time degrees hold equal credibility allows graduates to compete fairly in the job market. This balanced academic-employment framework aligns with student success initiatives while maintaining the integrity of structured course pathways, ensuring students receive the best possible education and career outcomes.

5. Fostering Faculty Engagement in Student Recruitment and Retention

A critical yet often overlooked factor in student retention is faculty engagement in the admissions process. In many institutions, recruitment efforts are handled primarily by admissions staff, leading to a gap between prospective students' expectations and the actual academic experience. Integrating department chairs into the admissions cycle can significantly improve student retention by ensuring that applicants receive accurate program insights from faculty experts. A successful example of this approach can be seen at Purdue University's Polytechnic Institute [6], where faculty members actively participate in recruitment events, admissions interviews, and curriculum discussions with prospective students. This involvement has resulted in higher enrollment yields, stronger student commitment to programs, and reduced attrition in the first two years. By allowing

faculty to engage directly with incoming students, institutions can improve program alignment, student satisfaction, and long-term retention rates.

At many universities, including ours, student success coordinators play a role in organizing orientation programs and providing initial guidance for freshmen. While these efforts are valuable, the current structure may benefit from a more integrated and faculty-driven approach to student mentorship and long-term success planning.

Currently, student success coordinators primarily assist students during their first semester, after which the responsibility of mentoring and academic advising transitions entirely to faculty. While this approach introduces students to university resources, it may not foster the sustained faculty-student engagement necessary for long-term academic and professional growth. Additionally, faculty are often called upon to support orientation events and student assistance efforts, raising the question of whether a more streamlined and faculty-led model could provide stronger continuity and better alignment with student needs. A potential enhancement to this model would be designating a faculty member as the student success coordinator within each department. This would provide students with a consistent point of contact throughout their academic journey, ensuring deeper faculty-student connections and stronger mentorship pathways. A faculty-led approach would also enhance academic advising, career guidance, and long-term student retention efforts, addressing challenges such as student engagement and degree progression more effectively.

Integrating faculty-driven mentorship programs has been shown to significantly enhance student retention rates. For instance, Utah State University [7] implemented a statewide faculty-to-student mentoring program that led to a persistence rate of 78.57% among participants from fall 2021 to fall 2022, compared to 65.22% for a control group. This represents a 13.35 percentage point increase attributed to the mentoring program. Similarly, Oregon State University [8] piloted a faculty-student mentor program targeting underrepresented, first-generation, and Pell-eligible first-year students. Data from other universities suggest that such programs can reduce dropout rates by as much as half, indicating the potential effectiveness of faculty-led mentorship in improving retention.

These examples illustrate the positive impact of transitioning from traditional student success coordinator models to faculty-led mentorship, resulting in improved student retention and success. Hence, a faculty-driven mentorship model requires careful workload management to ensure sustainability. Institutions can adopt a tiered mentoring structure, where senior students or trained advisors handle initial guidance, reducing the burden on faculty. Additionally, mentoring can be formally recognized in faculty workload distribution and tenure considerations.

This proposal is not intended to diminish the contributions of current success coordinators but rather to explore ways to optimize mentorship and student support by aligning it more closely with faculty expertise and program goals. By fostering a collaborative framework where faculty take a more active role in student success coordination, universities can strengthen retention, enhance academic support, and ensure that students receive the personalized guidance they need beyond their first semester.

6. Enhancing Course Scheduling Efficiency and Resource Optimization

Effective course scheduling is critical for student success, faculty workload management, and institutional efficiency. However, inefficient scheduling practices—such as offering low-enrollment courses in multiple semesters, poor prerequisite sequencing, and last-minute cancellations—create avoidable disruptions that impact both students and faculty.

Case Study 1: The Impact of Course Scheduling on Student Graduation Rates

A study conducted by the Community College Research Center (CCRC) at Columbia University [4] found that poorly scheduled courses are a key factor in delayed graduation rates, with 37% of students reporting that unavailable or misaligned courses prolonged their degree completion. Similarly, research by the California State University System [5] found that students taking courses "out of sequence" due to poor scheduling faced an average delay of 1.3 semesters in graduation. For example, at a regional public university in the Midwest, an upper-level mechanical engineering course was only offered once a year, causing students who missed enrollment due to prerequisite issues to be delayed by an entire academic year. This led to a 22% increase in requests for prerequisite overrides and course substitutions, placing additional burdens on faculty and administrators while diminishing student retention.

Case Study 2: The Cost of Inefficient Scheduling on Institutional Budgets

A 2021 report by the Education Advisory Board (EAB) [2] found that universities spend approximately \$2 million annually on redundant course offerings due to inefficient scheduling. At one large state university, faculty workload reports showed that low-enrollment courses accounted for nearly 15% of instructional costs, despite alternative scheduling solutions being available. By consolidating similar courses and optimizing prerequisites, the institution saved \$1.5 million in faculty and operational costs while improving student completion rates by 11%.

6.1 Optimized Scheduling Recommendations

Optimizing course scheduling can lead to significant improvements in resource utilization and student success. A pertinent example is the University of Wisconsin-Milwaukee [9], which undertook a comprehensive initiative to develop a more student-centric course schedule. By implementing a new scheduling policy, UWM aimed to enhance course availability and alignment with student needs. This strategic approach not only improved the student experience but also optimized the use of institutional resources.

Similarly, the American College of Greece [10] employed a mathematical modeling approach to optimize course schedules, considering various constraints such as course prerequisites, faculty availability, and classroom capacities. This optimization led to more efficient course offerings, better resource allocation, and improved student satisfaction and completion rates.

To address these challenges, institutions can implement data-driven course scheduling strategies:

Key Recommendations for Course Scheduling Optimization:

1. **Predictive Analytics for Enrollment Demand:** Utilize historical enrollment data to forecast demand for courses, ensuring that high-need courses are offered in optimal sequences.
2. **Strategic Use of Hybrid and Online Modalities:** Leverage online and hybrid formats for prerequisite-heavy courses to expand availability without overburdening faculty.

3. **Dynamic Scheduling Adjustments:** Implement real-time course scheduling adjustments based on mid-term enrollment trends to prevent underutilization of faculty resources.
4. **Block Scheduling for Core Courses:** Establish fixed scheduling blocks for essential prerequisite courses, reducing conflicts and ensuring smoother academic progression.

By implementing these scheduling refinements, universities can maximize institutional efficiency while ensuring that students graduate on time.

To optimize course scheduling, institutions should:

- Use predictive analytics to identify high-demand courses and prevent scheduling bottlenecks.
- Implement block scheduling for foundational courses to reduce prerequisite conflicts.
- Offer critical courses in hybrid or online formats to increase accessibility.
- Align faculty workload with student enrollment trends to prevent resource underutilization.

7. Conclusion: Strengthening Student Success Through Structured Pathways

Implementing structured course pathways is not about limiting student choice—it is about providing a clear, strategic roadmap that enhances graduation rates, reduces advising burdens, and optimizes institutional resources. By ensuring a well-sequenced curriculum, students can progress through their degrees efficiently, avoiding unnecessary delays and prerequisite misalignments.

At the same time, integrating faculty-driven mentorship, improving course scheduling efficiency, and strategically leveraging HyFlex models for non-traditional students ensures that universities balance structure with flexibility. Institutions that adopt this approach have already demonstrated higher student retention, improved faculty workload distribution, and reduced administrative inefficiencies. Universities that fail to adopt structured academic pathways risk not only declining retention rates but also inefficient resource allocation and increased administrative burdens. Now is the time for institutions to shift toward a more structured, faculty-driven approach that prioritizes student success, fiscal responsibility, and academic excellence.

By making these refinements—preserving student autonomy, addressing faculty workload concerns, and optimizing course scheduling—universities can build a sustainable, student-centered academic environment.

7.1 Next Steps for Institutional Leaders

To implement a structured course pathway model effectively, universities should:

- ***Standardize semester-wise course sequencing*** to ensure students take courses in a logical, timely manner.
- ***Strengthen faculty involvement in student recruitment and mentoring*** to enhance long-term engagement.
- ***Reevaluate student success roles*** to integrate faculty mentorship and create sustained academic support beyond the first semester.
- ***Optimize scheduling strategies*** based on student demand data to improve resource allocation and graduation timelines.
- ***Leverage strategic flexibility*** through targeted HyFlex offerings for transfer and working students without compromising structured learning.

By taking these proactive steps, institutions can significantly improve student outcomes, reduce inefficiencies, and foster a more sustainable academic environment. A well-structured curriculum benefits students, faculty, and the institution as a whole, ensuring higher completion rates, academic excellence, and long-term institutional success.

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