

Entrepreneurship as a Core Competency: Building Institutional Culture and Capacity in Higher Education

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Abstract: Entrepreneurship is increasingly regarded as a core competency in higher education, not only for business students but for future engineers, scientists, and civic leaders. At the Lebanese American University (LAU), the Strategic Committee on Entrepreneurship & Innovation has developed a university-wide framework to institutionalize entrepreneurial thinking, action, and capacity-building across schools. This paper shares insights from this ongoing initiative, highlighting the key pillars of cultural transformation: cross-departmental coordination, incentive structures for faculty and students, integration with liberal education, and long-term alignment with national and regional development goals. The initiative positions entrepreneurship as a university-wide strategy rather than a siloed track, with implications for curriculum, faculty development, student services, and external engagement. The paper discusses lessons learned, implementation challenges, and strategies for embedding entrepreneurship into the institutional DNA of a comprehensive university.

1. Introduction

Entrepreneurship is increasingly recognized as a strategic imperative in higher education, not merely as a business discipline but as a cross-cutting institutional capability that prepares graduates to navigate uncertainty, generate value, and contribute to societal development. As labor markets evolve and innovation cycles accelerate, universities are under growing pressure to cultivate entrepreneurial competencies across disciplines, particularly in engineering, where technical innovation intersects with real-world implementation ([1],[2]). However, embedding entrepreneurship institution-wide presents structural and cultural challenges. In many universities, entrepreneurial activities emerge organically within individual schools, often within business programs, resulting in fragmented initiatives, duplicated efforts, and limited cross-disciplinary collaboration. Moving from isolated entrepreneurship education to entrepreneurship as an institutional competency requires coordinated governance, curriculum alignment, partnership reframing, and cultural transformation.

Prior research in engineering education highlights the value of experiential learning, multidisciplinary teamwork, and industry engagement in developing entrepreneurial competencies ([3],[4]). However, much of this work focuses on course- or program-level interventions, offering limited insight into how entrepreneurship can be embedded institutionally across schools. As a result, universities often struggle with inconsistent student pathways, unclear governance, and weak alignment between academic programs and innovation ecosystems.

In this study, entrepreneurship is defined not solely as venture creation, but as a core competency encompassing opportunity recognition, interdisciplinary collaboration, innovation under uncertainty, stakeholder engagement, and impact-oriented value creation.

Within engineering education, this competency manifests through problem framing, prototyping, applied design, and translation of technical solutions into viable societal or market applications. Recognizing the disciplinary nuances of entrepreneurship was central to the development of a university-wide framework. This paper documents an institutional transformation initiative led by a Strategic Committee on Entrepreneurship and Innovation over an 18-month structured alignment phase. The initiative sought to move entrepreneurship from a peripheral activity to an embedded cultural and structural feature of the university. Unlike course-level interventions, the effort focused on institutional architecture, governance structures, curriculum integration mechanisms, partnership coordination, and applied innovation pathways. Submitted as an Engagement in Practice contribution, this paper does not test hypotheses but rather presents a replicable institutional model grounded in implementation experience. Specifically, it contributes 1) a hybrid governance framework for cross-school entrepreneurial coordination, 2) A curriculum integration strategy that embeds entrepreneurship without requiring new mandatory credit hours, 3) a partnership reframing mechanism aligning industry engagement with institutional priorities, 4) early institutional indicators demonstrating measurable shifts in collaboration and applied innovation activity. By articulating mechanisms rather than aspirations, this study aims to offer transferable guidance for institutions seeking to build entrepreneurship as a sustained cultural competency rather than a standalone program.

2. Conceptual Foundations and Institutional Change

Embedding entrepreneurship as a core competency requires more than programmatic additions; it demands institutional change. Universities are complex, loosely coupled systems characterized by decentralized authority, disciplinary autonomy, and deeply embedded cultural norms [5]. Efforts to introduce cross-cutting competencies, such as entrepreneurship, must therefore be designed not merely as curricular innovations but as structural and cultural transformations.

2.1 Entrepreneurship as an Institutional Competency

The concept of the entrepreneurial university has evolved over the past two decades to describe institutions that actively integrate teaching, research, and societal engagement in support of innovation ecosystems ([2],[6]). While early interpretations emphasized technology transfer and commercialization, contemporary perspectives highlight broader entrepreneurial capacities: interdisciplinary collaboration, opportunity recognition, value co-creation, and impact-driven problem solving. In engineering contexts, entrepreneurship extends beyond venture launch to include design thinking, iterative prototyping, systems integration, and stakeholder validation [1]. However, when entrepreneurship remains siloed within business schools or innovation centers, its institutional influence remains limited. To become a core competency, entrepreneurship must be reflected in governance structures, learning outcomes, partnership models, and institutional narratives.

This study conceptualizes entrepreneurship as a *distributed institutional capability* rather than a centralized program. That framing guided the design of mechanisms aimed at aligning

diverse schools under shared innovation principles without compromising disciplinary autonomy.

2.2 Organizational Change in Higher Education

Institutional transformation in higher education is widely recognized as complex and politically negotiated. Kezar [5] emphasizes that successful change initiatives combine top-down leadership commitment with bottom-up engagement and distributed ownership. Similarly, Kotter's model [7] of organizational change highlights the importance of establishing urgency, forming guiding coalitions, generating short-term wins, and institutionalizing new norms. Drawing on these insights, the initiative described in this paper adopted a hybrid strategy:

- Strategic endorsement from academic leadership, providing legitimacy and institutional backing.
- A cross-school strategic committee, functioning as a guiding coalition.
- Distributed subcommittees aligned with operational pillars, enabling faculty participation.
- Pilot implementations, generating early visible outcomes to reinforce credibility.

Rather than imposing uniform mandates, the committee prioritized alignment and coordination. This approach mitigated resistance commonly associated with curriculum restructuring and preserved local autonomy within schools.

2.3 Ecosystem-Based Institutional Governance

Universities increasingly operate within entrepreneurial ecosystems involving industry, government, and civil society actors [8]. The Triple Helix framework [9] suggests that innovation flourishes when institutional boundaries become more porous and collaborative. However, ecosystem participation requires internal coherence. Fragmented industry partnerships, duplicated innovation efforts, and uncoordinated outreach weaken institutional positioning. Therefore, entrepreneurship integration was framed not only as curriculum enhancement but as ecosystem rationalization. The governance model that emerged can be described as hybrid and integrative:

- Central coordination ensured strategic coherence.
- School-level implementation preserved flexibility.
- Partnership engagement was consolidated through structured channels.
- Applied innovation pathways were formalized.

By situating the initiative within organizational change theory and ecosystem governance literature, this study moves beyond descriptive reporting and positions the framework within broader scholarly discussions on institutional transformation.

3. Methodological Framing: An Engagement in Practice Study

3.1 Institutional Context and Timeline

The institutional initiative described in this study unfolded over an 18-month structured alignment period spanning two academic years. It was initiated through a formal mandate to establish a cross-school Strategic Committee on Entrepreneurship and Innovation, tasked with examining existing fragmentation in entrepreneurship-related activities and proposing a coordinated institutional framework. The implementation process progressed through three interrelated phases. The initial phase focused on institutional mapping and diagnostic analysis. During this stage, the committee conducted an inventory of entrepreneurship-related courses, programs, and experiential activities across schools, alongside an audit of industry partnerships and innovation initiatives. This diagnostic effort revealed overlapping efforts, uneven integration of entrepreneurial learning outcomes, and limited cross-school coordination. The second phase centered on framework design and strategic alignment. Four thematic subcommittees were formed corresponding to the institutional pillars later formalized in the governance model. Faculty workshops were organized to align expectations around entrepreneurship as a shared competency, and discussions with department chairs focused on how integration could occur without adding mandatory credit hours or disrupting accreditation requirements. The final phase involved pilot implementation and operationalization. During this stage, entrepreneurship milestones were embedded within selected courses, partnership engagement processes were formalized, and coordination mechanisms between schools were activated. This phased progression reflects established principles of institutional change in higher education, where diagnostic clarity, distributed ownership, and incremental implementation are critical for sustainable transformation [5].

3.2 Governance Structure and Operational Model

The Strategic Committee functioned as the central coordinating body of the initiative and served as a cross-school guiding coalition. It included faculty representatives from engineering, business, and other relevant disciplines, as well as administrative liaisons responsible for academic coordination. Rather than operating as a top-down authority, the committee facilitated structured dialogue, alignment, and distributed participation across schools. To translate strategic objectives into operational outcomes, four subcommittees were established, each aligned with a thematic pillar: curriculum integration, ecosystem partnerships, applied innovation and incubation, and cultural transformation. These subcommittees developed concrete deliverables, including curriculum alignment matrices, partnership mapping frameworks, innovation pathway models, and communication strategies. Importantly, governance emphasized coordination rather than centralization. Schools retained curricular autonomy, while shared principles and milestone structures created institutional coherence. This hybrid governance approach allowed for contextual adaptation within each school while ensuring alignment with broader institutional objectives. By balancing strategic oversight with decentralized implementation, the model mitigated resistance and fostered collective ownership of the entrepreneurship agenda.

4. Institutional Framework for Entrepreneurship Integration

The resulting framework positions entrepreneurship as a university-wide capability supported by four interdependent pillars (Figure 1).

4.1 Curriculum and Academic Integration

One of the most critical design decisions was to avoid introducing new mandatory credit hours. Rather than creating standalone entrepreneurship requirements which would have required lengthy curricular approval processes the committee adopted an embedded integration strategy. Entrepreneurship-related learning outcomes were infused into existing engineering capstone and project-based courses through structured milestone requirements. These milestones included problem validation exercises, stakeholder analysis, opportunity framing, business model articulation, and impact assessment aligned with institutional priorities. Faculty workshops supported instructors in adapting existing course structures to incorporate these components without compromising technical rigor or accreditation requirements. Over the alignment period, entrepreneurship-related elements were integrated into multiple project-based courses across participating departments. This approach ensured scalability and minimized institutional resistance, as it built upon existing academic structures rather than replacing them. Importantly, this embedded model allowed entrepreneurship to be experienced not as an additional burden, but as a value-enhancing dimension of engineering design work.

4.2 Cross-School Collaboration and Governance

A foundational objective of the initiative was to overcome the fragmentation of entrepreneurship-related activities across schools. Prior to implementation, entrepreneurial initiatives existed within individual programs, often driven by motivated faculty members or localized partnerships. While productive in isolation, these efforts lacked institutional coherence and cross-disciplinary integration. The Strategic Committee therefore prioritized coordination mechanisms designed to align institutional direction without disrupting school-level autonomy. Regular cross-school meetings created structured spaces for dialogue, allowing faculty to share course designs, project experiences, and partnership contacts. Over the 18-month implementation period, more than a dozen formal coordination meetings were held, alongside faculty workshops dedicated to curriculum alignment. This coordination resulted in a shared institutional vocabulary around entrepreneurship as a competency rather than a program. Schools retained control over curricular design, yet operated within a unified framework that emphasized opportunity recognition, stakeholder engagement, interdisciplinary collaboration, and impact-oriented innovation. The shift from isolated initiatives to coordinated strategy represents a key institutional outcome of the model.

4.3 Ecosystem and External Partnerships

Prior to the initiative, industry and community partnerships were largely school-specific and relationship-driven. While productive, these engagements were not systematically mapped or coordinated across the institution. The committee therefore introduced a partnership reframing process aimed at ecosystem alignment. The first step involved developing an institutional partnership inventory, documenting active collaborations, areas of expertise, and potential overlap. This mapping exercise revealed opportunities for cross-school

collaboration and reduced duplication of outreach efforts. Second, the initiative formalized a shared engagement pathway. Rather than allowing external partners to interact with isolated departments independently, a coordinated entry point was established through committee oversight. While schools retained the autonomy to manage their collaborations, partnership visibility and strategic alignment improved significantly. This reframing enhanced institutional coherence and strengthened the university's positioning within its regional innovation ecosystem. By aligning partnership activity with curricular and applied innovation objectives, the initiative connected educational experiences to broader institutional strategy.

4.4 Incubation and Applied Innovation

To move beyond classroom integration, the initiative sought to formalize pathways from academic projects to applied innovation and venture exploration. Prior to implementation, promising student projects occasionally progressed informally toward incubation, but no structured referral or support mechanism existed. The committee therefore developed a staged innovation pathway model. Project teams demonstrating technical feasibility and stakeholder validation were referred to existing incubation units and mentorship networks within the institution. Faculty were encouraged to identify high-potential projects during capstone evaluations and recommend them for further development. While the initiative did not introduce a new internal grant competition, it formalized a referral mechanism connecting academic projects to external funding opportunities and mentorship structures. This shift institutionalized what had previously been ad hoc transitions, thereby strengthening continuity between curricular experiences and venture exploration.

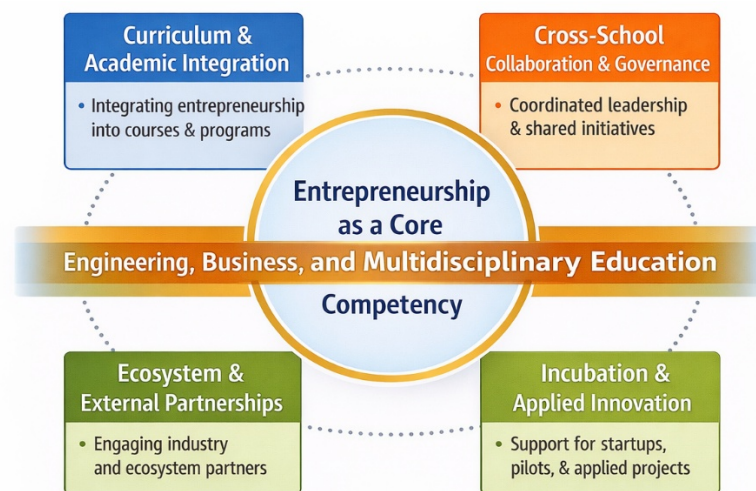


Figure 1. Institutional framework for embedding entrepreneurship as a core competency across schools. The framework positions entrepreneurship as a university-wide capability supported by four interdependent pillars: curriculum integration, cross-school governance, ecosystem engagement, and applied innovation. Engineering education is embedded across all pillars through experiential learning, design projects, and multidisciplinary collaboration.

4.5 Governance and Coordination Logic

The implementation model operated through a hybrid governance structure balancing centralized coordination with decentralized execution. At the strategic level, academic

leadership endorsed the initiative and provided legitimacy. The Strategic Committee functioned as the coordinating body, while subcommittees addressed operational dimensions. At the school level, faculty maintained curricular authority and adapted integration mechanisms to disciplinary contexts. This layered structure prevented over-centralization while ensuring alignment. The hybrid model reflects established insights from higher education change literature: sustainable transformation requires distributed ownership combined with visible leadership support [5]. By embedding entrepreneurship within governance processes rather than attaching it to a single unit, the initiative increased resilience and long-term viability.

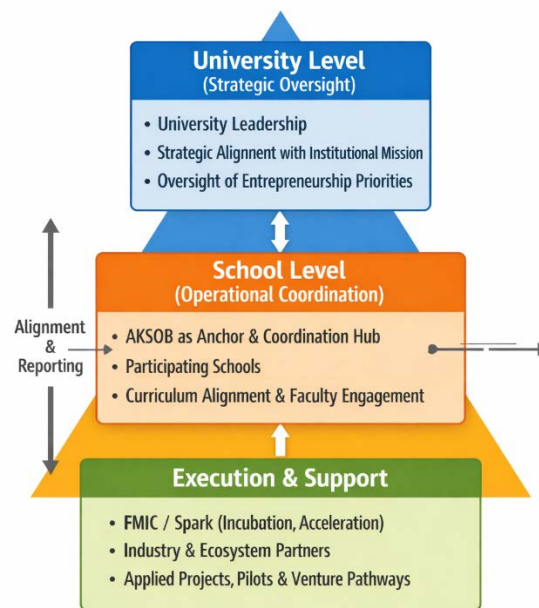


Figure 2. Hybrid governance model supporting entrepreneurship integration across schools. The model balances top-down strategic oversight with bottom-up academic participation. AKSOB serves as an anchor for coordination while existing innovation units and ecosystem partners provide execution and support, avoiding duplication and preserving disciplinary autonomy.

5. Implementation Process and Early Outcomes

The institutional transformation described in this study was not intended as an immediate large-scale restructuring, but rather as a coordinated shift in alignment, governance, and applied innovation activity. Within the 18-month implementation period, several measurable indicators suggest directional progress toward embedding entrepreneurship as a core institutional competency.

5.1 Cross-School Engagement and Faculty Participation

One of the earliest indicators of institutional change was increased cross-school collaboration. Prior to the initiative, entrepreneurship-related activities were largely contained within individual schools. During the implementation phase, faculty participation expanded beyond traditional boundaries through structured workshops, committee meetings, and subcommittee engagement. More than a dozen formal cross-school coordination meetings were conducted during the first academic year, supplemented by targeted curriculum

alignment workshops. Faculty from engineering and business collaborated in designing shared milestones and discussing integration strategies. This level of sustained cross-school interaction represented a structural shift from parallel activity toward coordinated institutional engagement. The establishment of thematic subcommittees further distributed ownership, expanding participation beyond the original committee membership. Faculty who had previously engaged with entrepreneurship in isolated ways became part of a broader institutional conversation, reinforcing cultural alignment.

5.2 Curriculum Alignment Indicators

The embedded integration strategy resulted in measurable curricular adjustments without the introduction of new mandatory credit hours. Entrepreneurship-related learning components were incorporated into selected project-based and capstone courses across participating departments. Rather than adding standalone courses, the initiative introduced structured milestones focused on problem validation, stakeholder analysis, opportunity framing, and impact assessment. This approach enabled entrepreneurship to become visible within course syllabi, grading rubrics, and final project presentations. Over the implementation period, multiple departments adopted variations of the embedded model. While curricular autonomy was preserved, shared milestone language and evaluation criteria increased coherence across programs. This alignment reflects a shift from informal entrepreneurial exposure to structured competency development.

5.3 Partnership Coordination and Ecosystem Positioning

The partnership reframing process yielded clearer visibility into institutional engagement patterns. The development of a centralized partnership inventory reduced duplication and revealed opportunities for cross-school collaboration. External stakeholders increasingly engaged with the university through coordinated channels rather than isolated departmental contacts. Although partnership activity had existed prior to the initiative, the institutionalization of coordination mechanisms strengthened the university's strategic positioning within its innovation ecosystem. Faculty reported improved clarity regarding partnership pathways and referral processes, reducing ambiguity around industry engagement. This structural coordination enhances long-term sustainability by institutionalizing relationships rather than relying solely on individual faculty networks.

5.4 Applied Innovation Activity

Perhaps the most visible early impact emerged in the formalization of applied innovation pathways. Prior to the initiative, promising student projects occasionally progressed toward incubation informally. During the implementation phase, referral mechanisms became structured and intentional. Project teams demonstrating feasibility and stakeholder validation were systematically connected to institutional incubation units and mentorship networks. Faculty were encouraged to identify high-potential teams and guide them toward continued development beyond course completion. Although the initiative remains in early stages, the formalization of these pathways has reduced the disconnect between academic projects and applied innovation opportunities. This continuity between classroom-based

work and venture exploration represents a substantive cultural shift toward entrepreneurship as an institutional norm.

5.5 Cultural Indicators of Change

Beyond structural and procedural adjustments, qualitative cultural indicators suggest emerging institutional alignment. Faculty discourse increasingly frames entrepreneurship as a shared responsibility rather than a business-school domain. Engineering instructors report greater comfort incorporating stakeholder and market considerations into design discussions. Cross-school collaboration is no longer perceived as exceptional but increasingly normalized. These cultural shifts, while less easily quantified, reflect the gradual institutionalization of entrepreneurship as a competency embedded within academic identity.

6. Challenges, Tensions, and Lessons Learned

The institutional experience described in this study highlights several important lessons for universities seeking to embed entrepreneurship as a core competency. First, sustainable transformation requires balancing centralized coordination with school-level autonomy. Rather than introducing new mandatory entrepreneurship courses, which would have required complex curricular restructuring, the embedded integration strategy allowed schools to incorporate entrepreneurial milestones within existing capstone and project-based structures. This approach reduced resistance while preserving disciplinary integrity. Second, the formation of a cross-school guiding coalition proved essential. The Strategic Committee provided legitimacy and structured dialogue across engineering and business faculties, helping shift entrepreneurship from a localized initiative to a shared institutional priority. Consistent with higher education change literature [5], distributed participation strengthened ownership and reduced perceptions of top-down imposition. Third, partnership coordination must enhance, not replace, faculty initiative. While centralized mapping improved visibility and reduced duplication, maintaining decentralized relationship management preserved authenticity and responsiveness within disciplinary contexts.

The framework presented here is particularly transferable to institutions where entrepreneurship activities exist but remain fragmented across schools. Under such conditions, alignment mechanisms, governance clarity, and embedded integration strategies can yield measurable institutional shifts without requiring large-scale structural disruption. For engineering education specifically, the study demonstrates that entrepreneurship can be framed as an extension of design thinking and applied problem-solving rather than a departure from technical rigor. When embedded strategically, entrepreneurship becomes connective tissue linking engineering curricula, industry collaboration, and societal impact.

7. Discussion: Implications for Engineering Education

The findings from the LAU case reinforce existing scholarship that conceptualizes entrepreneurship as a transferable institutional competency rather than a discipline-bound activity. Prior research in engineering and management education consistently shows that entrepreneurial capability develops most effectively through experiential, interdisciplinary, and institutionally supported initiatives, rather than through isolated courses or

extracurricular programming [10] [11]. The LAU initiative aligns with this perspective by positioning entrepreneurship as a university-wide strategic priority rather than as a business school specialization. A central insight emerging from this case concerns the importance of institutional coordination. While many universities host multiple entrepreneurship-related centers and initiatives, the literature frequently identifies fragmentation and lack of governance clarity as barriers to sustained impact [12]. The governance and collaboration framework developed at LAU directly addresses this challenge by clarifying roles across schools and units while preserving disciplinary autonomy. This hybrid coordination model reflects recommendations from engineering education research that advocate for structures balancing centralized strategic alignment with decentralized execution [11].

From a curricular standpoint, the work of the Curriculum and Academic Integration subcommittee responds to calls in the literature to embed entrepreneurship longitudinally across programs rather than confining it to capstone experiences [3]. By emphasizing benchmarking, alignment, and experiential integration within existing structures, the LAU model reflects best practices identified in ASEE case studies demonstrating improved student engagement and learning outcomes when entrepreneurial mindset development is scaffolded across the curriculum [13]. The Ecosystem and External Partnerships dimension further underscores the role of universities as strategic actors within broader entrepreneurial ecosystems. Prior research highlights universities' function as talent pipelines, conveners, and innovation anchors, particularly in emerging and transitional economies [10]. The LAU framework operationalizes this role through structured partnership coordination, competitions, and industry-linked projects, thereby strengthening the relevance, visibility, and sustainability of student and faculty innovation efforts.

Finally, the incubation and applied innovation component illustrates a broader shift in entrepreneurship education from ideation toward venture readiness and structured impact pathways. Rather than duplicating existing incubation services, the proposed pre-incubation model complements university-wide accelerators by emphasizing academic integration, business modelling, and staged venture development. This layered approach aligns with contemporary engineering entrepreneurship frameworks that stress institutional complementarity and progressive venture maturation [11]. Overall, the LAU case contributes to the literature by demonstrating how entrepreneurship can be embedded into the institutional fabric of a comprehensive university through governance alignment, curricular coherence, ecosystem engagement, and applied innovation pathways. Although the initiative remains in evolution, the framework offers a structured and transferable model for institutions seeking to move beyond fragmented entrepreneurship activities toward sustained cultural transformation.

8. Conclusion and Future Work

This paper documented an institutional initiative designed to reposition entrepreneurship as a core competency across schools within a higher education context. Rather than introducing isolated programs or additional credit requirements, the initiative focused on structural alignment, governance coordination, curriculum embedding, partnership reframing, and

applied innovation pathways. Through an 18-month implementation process, the institution transitioned from fragmented entrepreneurship-related activities to a more coherent, cross-school framework. The hybrid governance model balanced strategic oversight with disciplinary autonomy, while the embedded integration strategy allowed entrepreneurship to be incorporated into existing engineering and project-based curricula without disrupting accreditation structures. Early institutional indicators suggest increased cross-school collaboration, clearer partnership coordination, and more structured pathways linking academic projects to applied innovation.

Importantly, the findings reinforce that entrepreneurship in engineering education need not be confined to venture creation or business modeling. When conceptualized as opportunity recognition, stakeholder engagement, and impact-oriented design, entrepreneurship complements and strengthens technical education.

As universities navigate growing demands for innovation, employability, and societal relevance, institutional transformation must extend beyond individual courses or programs. The framework presented here offers a structured, transferable model for embedding entrepreneurship into academic culture while preserving disciplinary integrity. Sustained progress will depend on continued leadership support, faculty engagement, and ecosystem coordination—factors that remain central to the long-term institutionalization of entrepreneurship as a shared competency.

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