IDE 401
Senior Innovation II:
Value Proposition

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Overview

This course supports students in working on their senior projects by transforming their ideas, designs, or research into innovative solutions. In IDE 401, students will focus on the foundational aspects of the innovation process, including identifying and articulating entrepreneurial value, developing value propositions, and understanding product/market fit. Throughout the course, students will develop and present a business pitch, laying the groundwork for the more comprehensive business plan and project deliverables that will be completed in IDE 402. The skills and knowledge gained in IDE 401 will prepare students for the challenges of innovation, leading up to the Ansary Entrepreneurship Competition at the end of the IDE 402 experience.

Introduction to Course

In this course, students will explore the process of turning innovative ideas —whether they stem from technical designs, research, or creative concepts —into viable products, services, or solutions. Emphasis is placed on understanding and articulating the entrepreneurial value of these projects. Students will engage in exercises designed

to identify and prioritize the needs of customers or stakeholders, translating these insights into actionable project requirements. By analyzing market trends and societal needs, students will learn how to position their innovations to create meaningful impact. Throughout the course, students will develop their ability to define, manage, and advance their projects, while also crafting compelling business ideas and opportunities that resonate with various audiences. The course aims to equip students with the mindset and skills necessary to navigate the complexities of the innovation process, from conception to market readiness.

Learning Outcomes

After taking this course, students will be able to:

- Distinguish between Invention and Innovation, and identify the inventive and innovative aspects of their project, recognizing how each contributes to the project's potential impact.
- Develop a compelling and thorough value proposition, clearly outlining the market opportunities and benefits their project offers to target audiences.
- Analyze and articulate product/market fit, ensuring that their project aligns with customer needs and market demands, and positioning it for success.
- Confidently present their project and its progress to a diverse range of stakeholders, effectively communicating its value, impact, and potential for further development.
- Create a detailed and actionable project charter, providing a clear roadmap for the project's execution, management, and alignment with broader goals.

Pedagogy

This course is designed to be both informative and highly interactive. Each session will begin with a focused lecture that introduces key concepts and topics, providing students with the foundational knowledge needed for the day's work. Following the lecture, the class will shift into a wor kshop format, where teams will actively collaborate on tasks and assignments directly related to their projects. This hands -on approach allows students to immediately apply what they've learned, fostering a deeper understanding through practical experience .

During the workshop sessions, the instructor will move around the room, engaging with each team to offer guidance, answer questions, and brainstorm ideas. This close interaction not only helps to address specific challenges but also builds rapport and encourages a supportive learning environment. The classroom atmosphere is intended to be high-energy and productive, with students working together to advance their projects while benefiting from the instructor's expertise and the collaborative spirit of their peers. By the end of the course, students will have had the opportunity to present their projects, receiving constructive feedback that will help them refine their work as they move forward.

Career-Defining Learning and High-Stakes Competition

The IDE 401 and 402 courses are designed to equip students with essential skills and knowledge that will prepare them for successful careers in their respective fields. As the capstone of this learning journey, students will have the opportunity to showcase their innovations by competing in the prestigious Ansary Entrepreneurship Competition, held during the Innovation Expo Day at the end of the academic year. Competing teams will vie for significant cash prizes —$10,000 for the first-place team, $5,000 for the second place, and $2,500 for the third place. Beyond the financial rewards, excelling in this competition is a notable achievement that will enhance your resume and demonstrate your ability to innovate and lead in your chosen field.

How does IDE 401 prepare all disciplines to compete?

- **Tailored Value Proposition Development:**
  - Students learn to create compelling value propositions that highlight the unique strengths of their projects, regardless of discipline.
- **Market Segmentation and Strategy:**
  - The course teaches students how to identify and target the most suitable market segments, making their innovations relevant and competitive across different fields.
- **Entrepreneurial Mindset and Innovation:**
  - The course fosters an entrepreneurial mindset that is adaptable to any field, encouraging creative problem-solving and innovation that can stand out in the competition.
- **Comprehensive Project Management:**

- ○ Students develop robust project management skills, ensuring that their projects are well-planned, executed, and presented, regardless of the technical background.
- **Effective Stakeholder Communication:**
  - ○ Emphasis is placed on clear and persuasive communication, enabling students to effectively convey the value of their projects to a variety of stakeholders, including competition judges.
- **Patent and Intellectual Property Awareness:**
  - ○ Students gain knowledge of patent searches and intellectual property, which can give them a competitive edge by protecting and strategically positioning their innovations.

Required Text(s)

No textbook is required. All materials used in this course are provided on Canvas.

Recommended Readings

William D. Bygrave, ed. *The Portable MBA in Entrepreneurship*, 4th Edition. (New York: John Wiley & Sons, 2009).

Assignments

The course assignments consist of several deliverables:

1. **Class Participation**
   Participation in all cases and discussions is essential to enhance the learning experience. Attendance in class sessions is a key component of this grade. Everyone is expected to have read the assigned material and actively engage in the lecture discussion s.

2. **Meeting Documentation**
   All meetings must be formally documented. Proper documentation will ensure that each team member's contributions and project progress are accurately recorded.

3. **Patent Search**
   Conduct a thorough patent search using the patent database. This will help identify existing patents relevant to your project and determine where intellectual property opportunities may exist.

4. **Invention & Innovation**
   Project teams will list examples of inventions and innovations, analyzing where their projects fit within this spectrum. This will help clarify the inventive and innovative aspects of your work.

5. **Value Proposition Canvas**
   Project teams will create a value proposition canvas for their project, clearly outlining the benefits and market opportunities their project presents.

6. **Customer -Driven Market Segmentation**
   Project teams will assess their product's strengths to best choose a market segment. Teams will also evaluate whether their product can compete effectively and generate revenue within that segment.

7. **Project Presentation**
   Each student will present the current status of their senior design project, highlighting progress, challenges, and future steps.

8. **Project Charter**
   Project teams must develop a formal, comprehensive project charter document for their senior design project. This document will serve as a roadmap, outlining objectives, scope, and management plans for the project.

ChatGPT Integration

Integrating ChatGPT into the assignments in IDE 401 will significantly enhance students' learning experiences by fostering additional thinking, deeper learning, and better preparation for their careers. Here's how ChatGPT can be used effectively across the different assignments:

1. Class Participation

- **Enhancing Discussions:** Students can use ChatGPT to generate prompts or questions that stimulate class discussions, helping them explore topics from different perspectives. This can lead to more insightful and engaging discussions.
- **Preparation:** Before class, students can use ChatGPT to summarize complex readings or generate key points and questions, making them better prepared to participate actively.

2. Meeting Documentation

- **Summarization and Clarity:** After team meetings, students can use ChatGPT to help summarize key points, decisions, and action items. This ensures clarity and that nothing is overlooked.
- **Reflection:** ChatGPT can also assist in generating reflective questions that help teams consider the effectiveness of their meetings and improve future collaboration.

3. Patent Search

- **Research Assistance:** ChatGPT can assist in understanding complex legal language or summarizing patent information. Students can use it to generate lists of related patents or potential areas where their project could encounter intellectual property challenges.
- **Idea Generation:** Students can use ChatGPT to brainstorm potential patentable aspects of their project or to explore innovative angles that might differentiate their work from existing patents.

4. Invention & Innovation

- **Exploring Concepts:** Students can use ChatGPT to explore the difference between invention and innovation through examples, helping them better understand where their project fits on this spectrum.
- **Comparison and Analysis:** ChatGPT can generate comparisons between similar inventions and innovations, prompting teams to think critically about what makes their project unique and how it can be improved.

5. Value Proposition Canvas

- **Developing Value Propositions:** ChatGPT can assist students in crafting and refining their value propositions by suggesting different angles or helping articulate the benefits and market potential of their project.
- **Customer Persona Development:** Students can use ChatGPT to generate detailed customer personas, helping them better understand their target audience and tailor their value proposition accordingly.

6. Customer -Driven Market Segmentation

- **Market Research:** ChatGPT can help students explore different market segments by generating lists of potential customer demographics, industries, or applications for their project.
- **Scenario Analysis:** Students can use ChatGPT to simulate different market scenarios, helping them think through the implications of targeting different segments and refining their strategy accordingly.

7. Project Presentation

- **Presentation Crafting:** ChatGPT can assist in drafting and refining presentation scripts, ensuring that students communicate their ideas clearly and effectively.
- **Pitch Practice:** Students can use ChatGPT to simulate Q&A sessions, generating potential questions that they might face from judges or stakeholders and preparing thoughtful responses.

8. Project Charter

- **Document Structuring:** ChatGPT can help students organize their project charter by suggesting structures, headings, and sections that ensure all critical aspects are covered.

- **Goal Setting and Timeline Development:** Students can use ChatGPT to brainstorm potential project milestones and timelines, ensuring that their project charter is comprehensive and realistic.

How ChatGPT Fosters Additional Thinking and Deeper Learning:

- **Diverse Perspectives:** By generating diverse viewpoints and questions, ChatGPT encourages students to think more broadly and critically about their projects.
- **Enhanced Creativity:** ChatGPT's ability to generate ideas and explore "what-if" scenarios can push students to think creatively and consider innovative solutions they might not have otherwise.
- **Self-Reflection:** ChatGPT can prompt self-reflection and deeper analysis, helping students internalize what they've learned and apply it more effectively.

Career Preparation through Effective Use of ChatGPT:

- **Real-World Problem Solving:** By practicing with ChatGPT, students develop the ability to quickly gather and analyze information, a key skill in today's fast-paced work environment.
- **Enhanced Communication:** Using ChatGPT to refine their writing and presentation skills ensures that students can articulate their ideas clearly and persuasively, a crucial ability in any career.
- **Continuous Learning:** Learning to leverage AI tools like ChatGPT prepares students for careers in which they will need to continually adapt and learn new technologies to stay competitive.

Letter Grade Scheme

A	A-	B+	B	B-	C+	C	C-	F
1000 – 950	949 – 900	899 – 867	866 – 834	833 – 800	799 – 767	766 – 734	733 – 700	699 – 0

... the instructor reserves discretion to significantly grade down for a) poor writing b) poor team participation c) delayed submission

Attendance Policy

Attendance is a crucial component of this course due to its workshop -based format, where team collaboration and participation are vital for success. Each student's presence is essential not only for their own learning but also for the success and morale of their project team. To ensure students remain engaged and accountable to their teams, the following attendance policy will be enforced:

Attendance Impact on Final Grade:

- **Unexcused Absences:** For every unexcused absence, a student's final course grade will be reduced by one full letter grade. This means:
    - 1 unexcused absence: Final grade drops by one letter (e.g., A to B)
    - 2 unexcused absences: Final grade drops by two letters (e.g., A to C)
    - 3 or more unexcused absences: Automatic course failure
- **Excused Absences:** Excused absences must be documented and approved by the instructor in advance whenever possible. Examples of valid reasons for an excused absence include medical emergencies, family emergencies, religious observances, institutional responsibilities, legal obligations, or pre-approved academic or professional opportunities. It is the student's responsibility to communicate with the instructor and provide appropriate documentation.

Accountability to Teammates:

- **Impact on Team:** By being absent, you not only miss out on valuable learning experiences but also hinder your team's progress. Your teammates rely on your contributions to move the project forward, and your absence can lead to delays, lower team morale, and reduced overal l project quality.
- **Team Dynamics:** Regular attendance is essential for maintaining effective team dynamics. Being present shows commitment to your team and respect for your shared goals. Chronic absenteeism undermines the collaborative

process and can negatively impact both your grade and the team's success in the course.

Solo Work for Missed Classes:

- **Make-Up Assignments:** Students who miss a class, whether the absence is excused or unexcused, will be assigned solo work to make up for the missed class time. This work will be designed to ensure that the student can independently cover the material and contribute effectively to their team upon their return.

Instructor Discretion:

Instructors reserve the right to determine the validity of excused absences and to make necessary grade adjustments based on attendance. Frequent absences, even if excused, may still impact a student's ability to succeed in the course and could lead to further academic consequences. Instructors may also require that any missed work due to an excused absence be completed within a reasonable timeframe.

Ethical Conduct

Enrollment into the undergraduate class of Stevens Institute of Technology signifies a student's commitment to the Honor System. It is the responsibility of each student to become acquainted with and to uphold the ideals set forth in the Honor System Constitution. Specific student responsibilities include:

- Maintaining honesty and fair play in all aspects of academic life at Stevens.
- Writing and signing the pledge, in full, on all submitted academic work.
- Reporting any suspected violations to an Honor Board member or to the Dean of Student Development.
- Cooperating with the Honor Board during investigations and hearings.

Pledge of the Honor System

The pledge signifies that the work submitted by a student is indeed his/her own. There is one designated pledge to be used for tests, homework assignments, lab reports, and computer projects. The pledge shall be written in full and signed by the student on

all submitted academic work. Any references used (including texts, tutors, classmates, etc.) should be listed below the written pledge.

"I pledge my honor that I have abided by the Stevens Honor System."

Please note that assignments in this class may be submitted to www.turnitin.com

Links to an external site.

, a web-based anti-plagiarism system, for an evaluation of their originality.

Schedule

The lecture topics could be changed in accordance to the needs of the project teams. All readings will be submitted in class or are available online.