



# ENTR 330-102: Entrepreneurial Strategy

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When emailing regarding this course, please include ENTR330 in the subject.  
Office Hours: by appointment before or after class or via Zoom

## Course Description

Integrates knowledge of the different aspects of business learned in previous course work. In addition, provides an understanding of the decisions that guide the overall operations of a business organization and how the organization interacts with its markets, competitors, and suppliers. For the student who is considering starting or managing a small business. Combines classroom instruction in business strategy along with case analysis of small firms.

## Course Outcomes

1. Evaluate sustainable business opportunities with societal significance.
2. Articulate and defend business concepts and strategies.
3. Secure the resources necessary to bring a technological innovation to market.

## Prerequisites

Prerequisite: ENTR 210.

## Course Structure

### Methodology

This course teaches students how to fund the development and commercialization of technological innovation with societal significance. It is intended for the student considering a leadership role in a startup or in a division within an existing enterprise.

The course focuses on identifying commercially sustainable opportunities for innovation with societal significance, refining and validating business models for technological innovation, and securing the resources required to generate value from the innovation, including funding, collaborators, intellectual property protection, and suppliers.

Students with innovations from other activities, such as capstone projects, I-Corps, or ENTR210 "Introduction to Entrepreneurship," are welcome to continue using their innovations in this course. Similarly, this course welcomes any student with an existing business based on a technological innovation, or managing innovation in a corporate setting, to use that innovation in this course and learn techniques to grow the business.

The main deliverable of this course is a complete proposal to any of the Federal agencies participating in the Small Business Innovation Research (SBIR) program. The end of this syllabus lists the participating agencies, which includes the Department of Health and Human Services, the Environmental Protection

Agency, NASA, the Department of Education, the Department of Energy, the Department of Transportation, and the National Science Foundation. This course uses the SBIR framework to achieve two important goals:

1. Students will learn how to generate and validate sustainable value propositions that are based on technological innovation and that have the potential to solve significant societal problems.
2. Students will learn procedures for raising money that they can apply either in the job market (making them more attractive to employers) or in their own new ventures.

The course intends to help students develop a range of analytical, communication, interpersonal, and technology skills. Upon completion of the course, students should have the following skills:

- Quantify the value of technological innovations.
- Articulate and defend business concepts and strategies, verbally and in writing.
- Operate outside one's comfort zone and engage stakeholders.
- Secure resources necessary to bring a technological innovation to market.
- Integrate people, business structures and processes.
- Assess the strengths and weaknesses of individuals in an innovation ecosystem, including those of the student herself/himself.

## Innovation Selection, Commercialization Strategy Validation, and Proposal Creation

Each student will propose a technological solution to a societally significant need. The solution must meet the requirements for significance, innovation, and commercial potential as defined by a Federal agency participating in the SBIR program. This course will first review these requirements, and teach students how to use them to formulate business models and the technological solutions themselves.

Each student will develop a sustainable strategy for the innovation that includes experiments to reduce overall technical and commercialization risk, such as demonstration of unproven functionality, prototyping a minimum viable product, and interacting with collaborators, endorsers, and potential customers. Each student is then required to develop a SBIR Phase I Proposal, with technical, budget, and commercialization sections.

## Types of Assignments

This course has three types of assignments.

1. Proposal pieces: throughout the semester, each student will be writing and revising pieces of the proposal s/he will submit at the end of the semester.
2. Discussion assignments. We will all learn from each other through peer-to-peer discussions and reviews, both in class and via Canvas. All students can see all posts in discussions. Verbal and written participation in discussions is a significant part of the final grade.
3. Journal assignments. Entrepreneurship is a mindset. Journal assignments are "metacognitive questions" intended to help a student assess her/his own mindset (e.g., make the student think of her/himself in the third person). Only the instructor can see a student's posts to her/his journal, who will hold these posts in confidence. So long as the student is thoughtful, there is no wrong answer.

## Certificates

In addition to the academic credits, students will receive two certificates. One is from the United States Patent and Trademark Office (USPTO) for the successful completion of the USPTO Startup Certificate Training Course on the protection of intellectual property. The second is from the Collaborative Institutional Training Initiative (CITI Program) for the successful completion of the Human Subjects and Responsible Conduct of Research courses.

## Peer Review

Students will learn the criteria used by Federal agencies when evaluating an SBIR proposal. Each student will then review the work of other students. Peer review builds upon the diversity of students and innovations in the class to give students the opportunity to learn from each other, incorporate lessons learned in their own work, and broaden their educational experience in the course.

## Activities and Resources at the NJIT Van Houten Library

Students must be proficient in the use of research tools. The NJIT Van Houten Library offers these resources including a [Business Research Guide](#), a [Tutorials Guide](#), and [Research Guides](#) that are relevant to this course. Particularly important are the research guides on [citing your sources](#) and on [making oral presentations](#).

## Textbook

This course does not require a textbook. All material is online, mostly from the [SBIR Government website](#) and in the shared [Google Folder](#). The slides we will be looking at in class can be found in this [shared folder](#).

## Activity Calendar

See Canvas for due dates.

Class Date	Module	Major Assignments
1/27/2025	Module 1 Intro to Innovation with Societal Significance	
2/3/2025	Module 2 Introduction to Bootstrapping and the SBIR	
	Module 3 Beyond R&D	
2/10/2025	Module 4 Strategic Partners	
	Module 5 Finding Codified Opportunities	SBIR Selection
2/17/2025	Module 6 Case Studies	
2/24/2025	Module 7 Business Models	BMC, Peer BMC Review
3/3/2025	Module 8 Setting Goals	Aims
	Module 10 Structuring your proposal	Proposal Skeleton
3/10/2025	Module 12 Cost Proposal	Draft Budget
3/17/2025	Spring Break	
3/24/2025	Module 11 Work Plan	
3/31/2025	VentureLink Tour	Draft Proposal with Budget
4/7/2025	Module 9 Human Subject Protection	Human Subjects Training
4/14/2025	Module 14 The Submission and Review process	Peer Proposal Review
4/21/2025	Module 13 Patents	USPTO Training
4/28/2025	Module 15 The Entrepreneur's Next Steps	
5/5/2025	Recap	
5/12/2025	(Exam week – no exam)	Final Proposal

## Course Modules

### Module 1 Introduction to Innovation with Societal Significance

#### **Introduction:**

We learn about ourselves, and why it is challenging to make a significant impact on society through innovation. Instructor-led video insights and the SBIR manual will ground you in this field. Then, through

a series of reflection prompts, you will be asked to engage in introspection in order to identify your entrepreneurial passions and roadblocks

**Learning Activities:**

Read (or Watch):

1. [Purpose of the SBIR](#), 2. [History of the SBIR](#)

**Assignments:**

1. Module 1: Group Discussion- Peer Introductions
2. Module 1: Journal Assignment

## Module 2 Introduction to Bootstrapping and the SBIR

**Introduction:**

We cover the different options for funding available to the tech entrepreneur, and when each is recommended. We then dive deeper into the SBIR program and how it differs from other sources of R&D funding. An instructor-led video will outline funding options available to entrepreneurs. You will also consult the SBIR tutorial developed by the US Small Business Administration (SBA) to build an understanding of the goals of the SBIR program. You will then engage with your peers to discuss how you prioritize these funding options.

**Learning Activities:**

Read (or Watch):

1. [Evaluation Criteria](#), 2. [Program Basics](#)

**Assignments:**

1. Module 2: Group Discussion (Initial Post and Response to Peers)

## Module 3 Beyond R&D

**Introduction:**

This module takes a step back to view the SBIR program as one step in the process of commercialization. We learn how commercialization distinguishes entrepreneurship from invention. An instructor-led video and the SBA SBIR tutorial will guide you through go-to-market strategies that entrepreneurs are expected to pursue to qualify for commercialization funding. In addition, you will be provided with sample commercialization plans to add to your toolkit. You will then describe the go-to-market strategy (or strategies) you are considering for your innovation.

**Learning Activities:**

Read [Phase I Commercialization Plans](#), Sample Commercialization Plans in [NJIT SBIR](#) , [DOD Acquisition Basics](#)

**Assignments:**

1. Module 3: Reflection Assignment

## Module 4 Strategic Partners

**Introduction:**

We learn how to complete our skill set through collaboration. An instructor-led video and the SBA SBIR tutorial will cover the comprehensive spectrum of subject matter expertise expected of a technology venture pursuing societally significant entrepreneurship. With this knowledge, you will then engage in introspection and identify your own strengths and weaknesses. Based on this reflection, you will identify the partners you will need and refine your value proposition to them (as opposed to pitching to potential customers).

**Learning Activities:**

Read (or Watch):

1. [Building a Winning Team](#), 2. [Using Consultants & Subcontractors](#), 3. [Finding Partners](#), 4. [Partnering with a University](#)

**Assignments:**

1. Module 4: Group Discussion (Initial Post and Response to Peers)
2. Module 4: Journal Assignment
3. Letters of Collaboration

## Module 5 Finding Codified Opportunities

**Introduction:**

We learn how to find and then navigate an ocean of opportunities for technological innovations with societal significance that are aligned with our strengths and interests. The instructor-led videos and SBA SBIR tutorial will provide strategies for honing in on opportunities aligned with your interests, innovation, and preferences for commercialization. You will identify and contrast two opportunities from different agencies.

**Learning Activities:**

Read (or Watch):

1. [Agency Introductions](#), 2. [Agency Solicitations](#), 3. [Finding Topics](#), 4. [Broad vs Specific Solicitations](#)

**Assignments:**

1. Module 5: Repository Discussion-SBIR Selection
2. SBIR Selection

## Module 6 Case Studies

**Introduction:**

We learn how others have done it. Instructor-led videos and learning materials will explain how others like you have successfully used the SBIR process. You will then do a deep dive into a successful awardee in a topic area similar to yours and identify areas that you can leverage in your own practice. A key takeaway from this module is that the SBIR program is of value not only to the entrepreneur, but also to the entrepreneurial employee.

**Learning Activities:**

1. Go to [SBIR Award Data website](#) and find the SBIR winner for a topic similar to those you identified in Module 5.
2. Research the activities and accomplishments of that small business.

**Assignments:**

1. Module 6: Reflection
2. Module 6: Journal Assignment

## Module 7 Business Models

**Introduction:**

We learn how to draft a business model using the business model canvas (BMC). Videos from the instructor and from Steve Blank (father of the lean startup movement) will show you the structure of the BMC, how to populate the BMC components with your hypotheses of how a successful business model would operate, validate the hypotheses, and revise (i.e., “pivot”) the BMC components. You will then roll up your sleeves and create a BMC for the commercialization of your innovation. Because your BMC is a set of mostly unproven hypotheses, you will learn how to be critical of it.

**Learning Activities:**

Watch Lesson 3 of [How to Build a Startup \(Udacity\)](#)

**Assignments:**

1. Module 7: Group Discussion (Initial Post and Response to Peers)
2. Business Model Canvas
3. Module 7: Repository Discussion-BMC
4. Peer BMC Review

## Module 8 Setting Goals

### **Introduction:**

We learn how to set realistic and useful goals for SBIR proposals. This is our first discussion of grantsmanship. An instructor-led video and learning material will guide you through the process of defining your aims, which have to be non-obvious and quantified (otherwise they are not R&D) and also be realistic and within your resources (the amount of money and partners you seek). Once you have outlined your aims, you will engage in peer reviews to achieve unbiased and independent feedback on the alignment of aims, BMC, and agency topic. Nothing is more indicative of successful funding than this alignment.

### **Assignments:**

1. Aims
2. Module 8: Repository Discussion-Aims
3. Module 8: Repository Discussion-Peer BMC Review
4. Mid-Semester Survey

## Module 9 Human Subject Protection

### **Introduction:**

The commercialization of innovation with societal significance often involves people who also represent a vulnerable or underrepresented user community. In this module, we learn how to ensure these people are protected from harm. Through an instructor-led video, the SBA SBIR tutorial, and undertaking a self-paced online course in human subject research, you will be provided with the grounding principles of ethical research. You will also receive a certification for having passed human subjects protection training (a prerequisite for many SBIR awards). You will then apply this knowledge to your business idea to validate and justify its human subject exemption status.

### **Learning Activities:**

Read (or Watch): 1. [Protecting Animal & Human Subjects](#), 2. [Research Protocols at NJIT](#)

### **Assignments:**

1. Human Subjects Training and Certificate
2. Module 9: Human Subjects Decision Tool
3. Module 9: Journal Assignment

## Module 10 Structuring your proposal

### **Introduction:**

We come face-to-face with the minutia of grantsmanship. Our experience drafting a BMC taught us to express our ideas clearly and efficiently. The same goes for your proposal. An instructor-led video will be paired with proposal templates and some advanced Microsoft Word techniques to set you up for success. You will leverage these resources to start fleshing out the key sections required by the funding agency you picked in Module 7.

### **Learning Activities:**

Read (or Watch): “Links to SBIR topics and instructions” and “Guidance for SBIR Skeletons” in [NJIT SBIR](#)

### **Assignments:**

1. Module 10: Proposal Skeleton

## Module 11 Work Plan

### **Introduction:**

We learn and apply principles of project management. An instructor-led video and learning material will guide you through the process of breaking down the work plan into justified and measurable steps tied

to the accomplishing the proposal aims 8. In your hands-on activity, you will then draft a work plan for the aims you drafted in Module, and create a low-fidelity prototype to communicate your innovation.

**Learning Activities:**

Read (or Watch): [Develop a Proposal Preparation Schedule](#) and [When the Agency Defines the Problem](#)

**Assignments:**

1. Module 11: Group Discussion (Initial Post and Response to Peers)
2. Module 11: Draft Work Plan

## Module 12 Cost Proposal

**Introduction:**

We learn principles of project costing and small business accounting. An instructor-led video, the SBA SBIR tutorial, and the federal agencies' proposal solicitations, along with optional third-party references, will guide you through the process of costing your work plan, distinguishing direct expenses from indirect expenses, calculating your overhead rate and profit, and avoiding accounting errors that could land you in legal and financial trouble. You will implement these steps for the second milestone of this course, which is your proposal budget.

**Learning Activities:**

Read (or Watch): [Small Business Accounting & Finance](#). Also, [Jameson CPA](#) is a good reference.

**Assignments:**

1. Module 12: Draft Proposal and Budget
2. Module 12: Reflection

## Module 13 Patents

**Introduction:**

We address some misconceptions among entrepreneurs about patents. Are they an impervious shield that protects our intellectual property? Can you add the cost of patenting and licensing to your budget in Module 12? Is your idea patentable? Through instructor-led videos, the SBA SBIR tutorial, and the USPTO website you will evaluate different strategies for protecting and monetizing your intellectual property, and that of a peer in this course.

**Learning Activities:**

Read (or Watch): [Patents – Strategies and Costs](#) and [Patent Basics-Read the Essentials](#)

**Assignments:**

1. Module 13: USPTO Training and Certificate
2. Module 13: Group Discussion (Initial Post and Response to Peers)

## Module 14 The Submission and Review process

**Introduction:**

We discuss the actual submission process, and what to expect afterwards including the dreaded evaluation report. Instructor-led videos will outline the actual steps to submit an SBIR proposal (as opposed to preparing it). An SBA SBIR tutorial will also provide guidance on how to register a company, a prerequisite to proposal submission. In addition to learning how to submit your own proposal for review, you will also review the proposal of a peer using the evaluation rubric of the agency s/he is targeting. The end goal of this module is to improve your writing through a better understanding of your evaluator.

**Learning Activities:**

Read (or Watch): [Registering your Company](#)

**Assignments:**

1. Module 14: Repository Discussion-Peer Proposal Review Assignment
2. Peer Proposal Review

### 3. Module 14: Journal Assignment

## Module 15 The Entrepreneur's Next Steps

### **Introduction:**

We discuss an ecosystem that has been formed to help you in your entrepreneurial journey. You will consult guides to identify local resources that support the commercialization of your innovation. Finally, we will turn toward introspection again, reflect on our journey, and document any advice we would give an entrepreneur who has not taken this course.

### **Learning Activities:**

Read (or Watch): [State service providers](#)

Look up [assistance centers near you](#).

### **Assignments:**

1. Module 15: Repository Discussion- Final Proposal and Budget
2. Module 15 Journal Assignment

## Grading, Scale, and Type of Assignment

Assignment	Weight on total grade (out of 100):	LO1	LO2	LO3
SBIR Selection	5	X		
BMC	5		X	
Peer BMC Review	5		X	
Human Subjects and Responsible Conduct of Research CITI Certificate	5			X
Startup USPTO (Patents, Trademarks, Copyrights, Trade Secrets) Certificate	5	X		
Aims	10			X
Letters of Collaboration	5			X
Draft Proposal & Budget	5	X	X	X
Final Proposal	15	X	X	X
Final Budget	5			X
Peer Proposal Review	10		X	
Discussion Forums	10		X	
Journal Entries	5			X
Participation	10	X	X	X

LO1: Evaluate sustainable business opportunities with societal significance.

LO2: Articulate and defend business concepts and strategies.

LO3: Secure the resources necessary to bring a technological innovation to market.

Grade	Score
A	$90\% \leq \text{weighted sum}$
B+	$85\% \leq \text{weighted sum} < 90\%$
B	$80\% \leq \text{weighted sum} < 85\%$
C+	$75\% \leq \text{weighted sum} < 80\%$
C	$70\% \leq \text{weighted sum} < 75\%$
D	$60\% \leq \text{weighted sum} < 70\%$
F	$\text{weighted sum} < 60\%$



## Agencies That Invest in Entrepreneurs through the SBIR Program, and Which Will Be Covered in ENTR330



Small Business  
Administration



Department of  
Agriculture



Department of  
Commerce



Department of Defense



Department of Education



Department of Energy



Department of Health  
and Human Services



Department of Homeland  
Security



Department of  
Transportation



Environmental Protection  
Agency



National Aeronautics and  
Space Administration



National Science  
Foundation

## Institutes within the National Institutes of Health



- National Cancer Institute
- National Eye Institute
- National Heart, Lung, and Blood Institute
- National Human Genome Research Institute
- National Institute on Aging
- National Institute on Alcohol Abuse and Alcoholism
- National Institute of Allergy and Infectious Diseases
- National Institute of Arthritis and Musculoskeletal and Skin Diseases
- National Institute of Biomedical Imaging and Bioengineering
- Eunice Kennedy Shriver National Institute of Child Health and Human Development
- National Institute on Deafness and Other Communication Disorders
- National Institute of Dental and Craniofacial Research
- National Institute of Diabetes and Digestive and Kidney Diseases
- National Institute on Drug Abuse
- National Institute of Environmental Health Sciences
- National Institute of General Medical Sciences
- National Institute of Mental Health
- National Institute on Minority Health and Health Disparities
- National Institute of Neurological Disorders and Stroke
- National Institute of Nursing Research
- National Library of Medicine

## Centers within the Centers for Disease Control and Prevention



- Center for Global Health
- National Center on Birth Defects and Developmental Disabilities
- National Center for Chronic Disease Prevention and Health Promotion
- National Center for Emerging and Zoonotic Infectious Diseases
- National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention
- National Center for Immunization and Respiratory Diseases
- National Center for Injury Prevention and Control
- National Institute for Occupational Safety and Health
- National Center for Environmental Health
- Center for Preparedness and Response

## Departments within the Department of Defense



## Academic Integrity

*"Academic Integrity is the cornerstone of higher education and is central to the ideals of this course and the university. Cheating is strictly prohibited and devalues the degree that you are working on. As a member of the NJIT community, it is your responsibility to protect your educational investment by knowing and following the [NJIT academic code of integrity policy](#).*

*Please note that it is my professional obligation and responsibility to report any academic misconduct to the Dean of Students Office. Any student found in violation of the code by cheating, plagiarizing or using any online service or software inappropriately will result in disciplinary action. This may include a failing grade of F, and/or suspension or dismissal from the university. If you have any questions about the code of Academic Integrity, please contact the Dean of Students Office at [dos@njit.edu](mailto:dos@njit.edu)*

A link to Turnitin is provided in Canvas with which students can test the authenticity of their work. Any proposal that is more than 25% copied requires a written explanation to the instructor. For this class, an acceptable explanation can be self-plagiarism when repurposing a previous report, business plan, or proposal.

## **Additional Information and Resources**

### **[Canvas Accessibility Statement](#)**

### **Requesting Accommodations**

If you need accommodations due to a disability please contact the [Office of Accessibility Resources and Services](#), Kupfrian Hall 201 to discuss your specific needs. A Letter of Accommodation Eligibility from the office authorizing student accommodations is required.