



## MEM-419: TECHNICAL ENTREPRENEURSHIP

Northwestern

**COURSE** MEM-419: Technical Entrepreneurship

**TEXT** *Disciplined Entrepreneurship*, Bill Aulet

**TIME** Tuesdays, 6:30-9PM

**LOCATION** North Garage, Krebs Room 1440

**FACULTY** Prof. David Zaretsky  
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**PROGRAM WEBSITE** <https://www.mccormick.northwestern.edu/engineering-management/curriculum/descriptions/419.html>

**PROGRAM OFFICES** Master of Engineering Management  
McCormick School of Engineering / Northwestern University  
North Campus Parking Garage  
2311 N. Campus Drive, Office Suite 1400 (first floor), Evanston, IL 60208  
Phone: 847-491-2281

**COURSE OVERVIEW** This course is a unique opportunity for passionate students and future entrepreneurs to journey through the formation of a commercial technology startup. The goal of this class is to evolve an idea into a complete business model. The course is designed to expose students to all aspects of creating a technology start-up, covering a wide range of topics across all phases in the development of a business.

Throughout the term, students will work in a team to build a plan for a new enterprise using a proven framework, the Disciplined Entrepreneurship process. Students will develop

and evaluate their technology as a commercial product, identify target commercial market(s), and develop business and financial plans to launch the business.

This course is designed for anyone who wants to understand firsthand the process of launching a new venture, or those simply curious about learning entrepreneurship. Whether you are looking to launch a startup, or planning to join one in the near future, this course will give you a solid understanding of what it takes to launch a new venture and a common language for future entrepreneurial endeavors.

- COURSE GOALS** In this course you will gain an in-depth understanding of how to
- Launch a lean startup
  - Build a management team and manage responsibilities
  - Develop a business model for a product or service
  - Identify key customer market segments
  - Understand technology requirements & risks
  - Build a pro-forma financial model
  - Develop a pitch deck for investors
  - Provide the starting point for students to launch a start-up

- DELIVERABLES** At the completion of this course, you will have completed the following requirements:
- Technology / Product Concept
  - Executive business summary
  - Investor pitch deck
  - Pro-forma financial model
  - Market research & competitive analysis

- GRADING** Grading is team-based, and is composed of the following:
- Weekly Assignments (5): 75%
  - Final Pitch & Deliverables: 25%

**CLASS FORMAT** The course is intended to balance entrepreneurship skills as well as technical skills necessary to launch a lean startup and technology. Students will also be expected to make regular presentations of their business development to the class. Each week, class will generally be composed of lecture, team updates, and team meetings.

- CLASS SCHEDULE**
- Week 1:
- Introduction to Entrepreneurship
  - Develop Teams & Identify Technology or Commercial Product
  - Market Segmentation
  - Primary & Secondary Market Research
- Week 2:
- Identify Beach Head Market
  - Customer Persona Development
  - Total Addressable Market (TAM)
- Week 3:
- High-level product specs
  - Quantified Value Proposition
  - Product Life Cycle
- Week 4:
- Competitive Positioning

- Customer Acquisition Process
- Customer Decision Making Unit (DMU)
- Sales Funnel & Processes

Week 5:

- Unit Economics
- Cost of Consumer Acquisition (COCA)
- Customer Lifetime Value (LTV)
- Pro-Forma Financial Model

Week 6:

- Business Pitch Deck
- Minimum Viable Product (MVP)
- Product Roadmap
- Introduction to Agile

Week 7:

- Business Model Canvas
- Testing Business Ideas

Week 8:

- Final Presentations

**ACADEMIC INTEGRITY** Students in this course are required to comply with the policies found in the booklet, "Academic Integrity at Northwestern University: A Basic Guide". All papers submitted for credit in this course must be submitted electronically unless otherwise instructed by the professor. Your written work may be tested for plagiarized content. For details regarding academic integrity at Northwestern, please view or download the [guide](#).

**DISABILITY ACCOMMODATIONS** Northwestern University is committed to providing the most accessible learning environment as possible for students with disabilities. Should you anticipate or experience disability-related barriers in the academic setting, please contact AccessibleNU to move forward with the university's established accommodation process (e: [accessiblenu@northwestern.edu](mailto:accessiblenu@northwestern.edu); p: 847-467-5530). If you already have established accommodations with AccessibleNU, please let me know as soon as possible, preferably within the first two weeks of the term, so we can work together to implement your disability accommodations. Disability information, including academic accommodations, is confidential under the Family Educational Rights and Privacy Act.

**EXCEPTIONS TO CLASS MODALITY** Class sessions for this course will occur in person. Individual students will not be granted permission to attend remotely except as the result of an Americans with Disabilities Act (ADA) accommodation as determined by AccessibleNU.

Maintaining the health of the community remains our priority. If you are experiencing any symptoms of COVID do not attend class and update your Symptom Tracker application right away to connect with Northwestern's Case Management Team for guidance on next steps. Also contact the instructor as soon as possible to arrange to complete coursework.

Students who experience a personal emergency should contact the instructor as soon as possible to arrange to complete coursework. Should public health recommendations prevent in person class from being held on a given day, the instructor or the university will notify students.

**CLASS RECORDINGS** This class or portions of this class will be recorded by the instructor for educational purpose and available to the class during the quarter. Your instructor will communicate

how you can access the recordings. Portions of the course that contain images, questions or commentary/discussion by students will be edited out of any recordings that are saved beyond the current term.

**PROHIBITION OF CLASS RECORDINGS BY STUDENTS**

Unauthorized student recording of classroom or other academic activities (including advising sessions or office hours) is prohibited. Unauthorized recording is unethical and may also be a violation of University policy and state law. Students requesting the use of assistive technology as an accommodation should contact AccessibleNU. Unauthorized use of classroom recordings – including distributing or posting them – is also prohibited. Under the University’s Copyright Policy, faculty own the copyright to instructional materials – including those resources created specifically for the purposes of instruction, such as syllabi, lectures and lecture notes, and presentations. Students cannot copy, reproduce, display, or distribute these materials. Students who engage in unauthorized recording, unauthorized use of a recording, or unauthorized distribution of instructional materials will be referred to the appropriate University office for follow-up.

**COVID-19 CLASSROOM EXPECTATIONS**

Students, faculty, and staff must comply with University expectations regarding appropriate classroom behavior, including those outlined below and in the COVID-19 Code of Conduct. With respect to classroom procedures, this includes:

- Policies regarding masking and social distancing evolve as the public health situation changes. Students are responsible for understanding and complying with current masking, testing, Symptom Tracking, and social distancing requirements.
- In some classes, masking and/or social distancing may be required as a result of an Americans with Disabilities Act (ADA) accommodation for the instructor or a student in the class even when not generally required on campus. In such cases, the instructor will notify the class.
- No food is allowed inside classrooms. Drinks are permitted, but please keep your face covering on and use a straw.
- Faculty may assign seats to help facilitate contact tracing in the event a student tests positive for COVID-19. Students must sit in their assigned seats.

If a student fails to comply with the COVID-19 Code of Conduct or other University expectations related to COVID-19, the instructor may ask the student to leave the class. The instructor is asked to report the incident to the Office of Community Standards for additional follow-up.

**COVID-19 TESTING COMPLIANCE**

To protect the health of our community, Northwestern University requires unvaccinated students who are in on-campus programs to be tested for COVID-19 twice per week. Students who fail to comply with current or future COVID-19 testing protocols will be referred to the Office of Community standards to face disciplinary action, including escalation up to restriction from campus and suspension.

**SUPPORT FOR WELLNESS & MENTAL HEALTH**

Northwestern University is committed to supporting the wellness of our students. Student Affairs has multiple resources to support student wellness and mental health. If you are feeling distressed or overwhelmed, please reach out for help. Students can access confidential resources through the Counseling and Psychological Services (CAPS), Religious and Spiritual Life (RSL) and the Center for Awareness, Response and Education (CARE). Additional information on the resources mentioned above can be found here:

- <https://www.northwestern.edu/counseling/>
- <https://www.northwestern.edu/religious-life/>
- <https://www.northwestern.edu/care/>