



**ENTP 7301 – Fall 2025**  
**Technology, Innovation, And Entrepreneurship**

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Office: JSOM 4.222  
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**Class Schedule for Fall 2025**

Monday, 10 AM - 12:45 PM  
Room: JSOM 14.501

**Office Hours**

Tuesday, 2:30-3:50 PM, Room JSOM 4.222

Students are welcome to visit office hours *without an appointment* to discuss course details (e.g., logistics, material, assignments, exams). If the above time does not work for you or if you have a specific matter to discuss, please email me to schedule an appointment.

**Course Description**

This course is a doctoral seminar designed to provide an introduction to research on technology, innovation, and entrepreneurship. The first four weeks are designed to introduce a broad survey of theoretical foundations from disciplinary fields (e.g., economics and sociology) and classics from innovation literature to conduct research in technology, innovation, and entrepreneurship, whereas the remainder of the course will focus on phenomenon-based topics in contemporary research.

**Course Objectives**

This course will aim to help students achieve the following objectives. First, students will understand theoretical underpinnings from disciplinary fields that provide a foundation for technology, innovation, and entrepreneurship research. Second, students will be exposed to a series of current research topics applying foundational works to the area of technology, innovation, and entrepreneurship.

**Course Evaluation**

Course grades will be based on the following four components:

**1. Class Participation (25%)**

Class participation will be evaluated as a function of the following:

- **Readings:**
  - All students are expected to complete the assigned readings and actively engage in class discussions. Each student will be designated to lead a focused 5-minute discussion on

a specific assigned article, addressing the paper's important theoretical or empirical contributions, reasons for its scholarly influence, and potential limitations or shortcomings that could be addressed in future research. These presentations are intended to facilitate broader class discussion and require no visual aids such as slides.

- Beyond individual presentations, students are expected to demonstrate comprehensive familiarity with all assigned readings through thoughtful participation in class discussions. Participation grades will reflect the consistency and quality of contributions, with higher grades awarded to students who make meaningful, well-reasoned interventions. The quality of participation will be assessed based on the clarity and coherence of arguments, effective application of theoretical frameworks from the literature, and the ability to support claims with evidence drawn from the assigned academic readings.
- **Attendance:**
  - Though not individually graded, attendance is your obligation, and you are responsible for all the work, including tests and written work, of all class meetings. No right or privilege exists that permits you to be absent from any class meetings except for excused absences for authorized University activities or Religious Holy Days. Regular absence from class will severely impact your class participation score.
  - Arriving to class past the start time will be marked as late. Excessive late attendance to class will result in a reduction of participation points.

## 2. Research Proposal, Paper & Presentation (50%):

- **Preliminary Research Proposal (5%):** Students will submit a preliminary research proposal (~3-5 pages double-spaced) that provides a high-level overview of their intended research. The proposal should clearly explain the research question, demonstrate why it is theoretically important and practically relevant to the field of innovation, identify potential data sources for the empirical study, and articulate the expected contributions of the research. This proposal should serve as practice for writing a dissertation proposal and should focus on a legitimate research question that could conceivably contribute to your dissertation work rather than being a standalone exercise.
- **Research Article (35%):** Students will develop their proposal into a more detailed research proposal (10-12 pages double-spaced excluding references, tables, and figures) that resembles the front section of an empirical paper, composed of an introduction, theory, and hypotheses, and an empirical study proposal. The article should have the foundation of a legitimate research paper addressing an open question in innovation, demonstrate rigorous academic writing, and contribute meaningfully to the field. The article should also include a detailed overview of your empirical approach, including data sources, industry context, variable operationalizations, estimation models, identification strategies, and potential robustness and mechanism tests.
- **Research Presentation (10%):** At the end of the semester, students will deliver a 10-minute research presentation of their article, followed by a 5-minute Q&A session. The presentation

should effectively communicate your research question, theoretical framework, proposed methodology, and expected contributions. Students will submit their slides alongside their research article.

### 3. Weekly Memos (25%)

- Students will prepare two memos (3-5 pages each) relating to the readings for any two sessions of their choosing from the course schedule. The purpose of the memos is to help you engage deeply with the readings and respond with critical analysis, questions, and new ideas. Each memo should focus exclusively on the readings assigned for that particular session and should be submitted via email before the beginning of the session. Formats may vary, but memos should include:
  - **Key insights and contributions:** Identify the most compelling ideas, concepts, or arguments from the readings that sparked new understanding or provided valuable theoretical or empirical contributions to the field.
  - **Critical evaluation:** Raise questions, concerns, or disagreements with the authors' approaches, methodologies, or conclusions, demonstrating your analytical engagement with the material.
  - **Theoretical connections:** Draw linkages between different readings within the session (or with those in other sessions), noting complementary insights, contradictions, or tensions between various approaches or findings.
  - **Future research directions:** Propose how you would extend, modify, or build upon the work presented in the readings to advance knowledge in the field.

Memos will be evaluated using a four-point scale: Fail, Low Pass, Pass, High Pass.

### Final Course Grades

Final grades for the course will be based on the following scale: 93-100% (A), 90-92.99 (A-), 87-89.99 (B+), 83-86.99 (B), 80-82.99 (B-), 77-79.99 (C+), 73-76.99 (C), 70-72.99 (C-), and so forth. I reserve the right to make changes to this distribution based on overall class performance at the end of the semester.

### Other Class Policies

#### 1. The Use of Generative AI Tools in the Classroom:

- Students may use generative AI platforms (e.g., ChatGPT, Claude, Grammarly, or similar) for complementary research tasks but **not for the final writing of assignments**. Permitted uses include: brainstorming research ideas, conducting preliminary literature reviews, understanding unclear concepts (particularly in econometrics, causal inference, and statistics), reviewing grammar and syntax, checking citation formatting, explaining methodological approaches, assisting with data organization strategies, helping interpret statistical outputs, generating potential research questions for consideration, and providing coding or programming syntax assistance.

- It is important to note that generative AI may occasionally generate incorrect or misleading information or produce offensive or biased content. As such, do not rely on them without doing your own independent research and verification. You will be responsible (and graded accordingly) for any material that is AI-generated that you include in your submissions.
2. **The Use of Smart Devices in the Classroom:** The use of electronic devices can disrupt learning for everyone in the classroom. Devices must be turned off and put away, except in cases of personal emergency. Laptops and tablets can be used for note-taking and referring to the case, contingent on them not becoming a distraction to the class. In the event that appropriate use is not followed, the student's participation points will be reduced.
  3. **University Course Policies:** Information contained in the following link constitutes additional University's policies and procedures. Please go to the UT Dallas Syllabus Policies webpage for these policies (<https://go.utdallas.edu/syllabus-policies>).
  4. **Honor Code:** As members of the UT Dallas community, all students are expected to uphold the Comet Creed: *"As a Comet, I pledge honesty, integrity, and service in all that I do."* Severe implications will exist for plagiarism in any capacity, unethical academic behavior, or violations of UT Dallas' official [student code of conduct](#). In the event of a violation of the honor code, I will follow UT Dallas' official reporting process for investigation.
  5. **Accommodations for Students with Disabilities:** The University of Texas at Dallas is committed to providing reasonable accommodations for all persons with disabilities. The syllabus is available in alternate formats upon request. If you are seeking classroom accommodations under the Americans with Disabilities Act (2008), you are required to register with the AccessAbility Resource Center (ARC), located in the Administration Building, Suite 2.224. Their phone number is 972-883-2098, email: [studentaccess@utdallas.edu](mailto:studentaccess@utdallas.edu), and the website is <https://accessability.utdallas.edu/>. To receive academic accommodations for this class, please register and request services by completing the Request for Services form with the proper documentation and meeting with the Director of ARC at the beginning of the semester.
  6. **Syllabus:** I reserve the right to make any changes to the syllabus, including project due dates, test dates, and course policies. These changes will be announced as early as possible.

**Course Schedule**

Session	Dates	Topics
1	8/27	Introduction to Innovation Research
2	9/3	Perspectives on the Rate & Direction of Inventive Activity
3	9/10	Knowledge Recombination & Science in Innovation
4	9/17	Models of Technology & Industry Evolution
5	9/24	Incumbent Adaptation to Technological Change
6	10/1	Markets for Technology & Division of Innovative Labor <b>Due: Preliminary Research Proposals</b>
7	10/8	Organizational Structure & Innovation
	10/15	<b>No Class</b>
8	10/22	Entrepreneurship & Innovation
9	10/29	The Geography of Innovation
10	11/5	Immigration & Innovation
11	11/12	Digitization
12	11/19	Artificial Intelligence
	11/26	<b>No Class (Thanksgiving Break)</b>
13	12/3	Research Presentations <b>Due: Research Article &amp; Presentation Slides</b>

## Weekly Readings

All required readings are accessible online through the [search tool](#) provided by Eugene McDermott Library at the University of Texas at Dallas. Each week's reading list includes both required readings for class discussion, as well as “Additional Readings” that are optional and provided for students' further interest.

### 1. Introduction to Innovation Research

- “Capitalism, Socialism and Democracy” (Chapter 7)  
Schumpeter | Book chapter
- “Fifty years of empirical studies of innovative activity and performance” (Chapter 4)  
Cohen (2010) | *Handbook of the Economics of Innovation*
- “Innovation: Market failures and public policies”  
Bryan & Williams (2021) | *Handbook of Industrial Organization*

### 2. Perspectives on the Rate & Direction of Inventive Activity

- “The burden of knowledge and the 'death of the renaissance man': Is innovation getting harder?”  
Jones (2009) | *The Review of Economic Studies*
- “Technology push and demand pull perspectives in innovation studies: Current findings and future research directions”  
Di Stefano, Gambardella & Verona (2012) | *Research Policy*
- “Who becomes an inventor in America? The importance of exposure to innovation”  
Bell, Chetty, Jaravel, Petkova & Van Reenen (2019) | *Quarterly Journal of Economics*
- “Are ideas getting harder to find?”  
Bloom, Jones, Van Reenen & Webb (2020) | *American Economic Review*
- “Papers and patents are becoming less disruptive over time”  
Park, Leahey & Funk (2023) | *Nature*

#### *Additional Readings (Optional)*

- “Why has economic growth slowed when innovation appears to be accelerating?”  
Gordon (2018) | *NBER Working Paper*

### 3. Knowledge Recombination & Science in Innovation

- “Technological interdependence in the American economy”  
Rosenberg (1979) | *Technology and Culture*
- “The dual frontier: Patented inventions and prior scientific advance”  
Ahmadpoor & Jones (2017) | *Science*
- “The decline of science in corporate R&D”  
Arora, Belenzon & Pataconi (2018) | *Strategic Management Journal*
- “Recombinant uncertainty in technological search”  
Fleming (2001) | *Management Science*
- “The double-edged sword of recombination in breakthrough innovation”  
Kaplan & Vakili (2015) | *Strategic Management Journal*

*Additional Readings (Optional)*

- Why Do Firms Do Basic Research (with their own money?)  
Rosenberg (1990) | *Research Policy*
- “The changing structure of American innovation: Some cautionary remarks for economic growth”  
Arora, Belenzon, Pataconi & Suh (2020) | *Innovation Policy and the Economy*
- “Atypical combinations and scientific impact”  
Uzzi, Mukherjee, Stringer & Jones (2013) | *Science*
- “Scientific novelty and technological impact”  
Veugelers & Wang (2019) | *Research Policy*
- “Profiting from enabling technologies?”  
Gambardella, Heaton, Novelli & Teece (2021) | *Strategy Science*

**4. Models of Technology & Industry Evolution**

- “Patterns of industrial innovation”  
Abernathy & Utterback (1978) | *Technology Review*
- “Time paths in the diffusion of product innovations”  
Gort & Klepper (1982) | *The Economic Journal*
- “Uncertainty and technological change”  
Rosenberg (1996) | *The Economic Impact of Knowledge*
- “Technology and industry evolution”  
Agarwal & Tripsas (2008) | *The Handbook of Technology and Innovation Management*
- “Competing technologies and industry evolution: The benefits of making mistakes in the flat panel display industry”  
Eggers (2014) | *Strategic Management Journal*

*Additional Readings (Optional)*

- “A dynamic model of process and product innovation”  
Utterback & Abernathy (1975) | *Omega*
- “Technological discontinuities and organizational environments”  
Tushman & Anderson (1986) | *Administrative Science Quarterly*
- “Dominant designs and the survival of firms”  
Suárez & Utterback (1995) | *Strategic Management Journal*
- “Entry, exit, growth, and innovation over the product life cycle”  
Klepper (1996) | *The American Economic Review*
- “The evolution of markets and entry, exit and survival of firms”  
Agarwal & Gort (1996) | *The Review of Economics and Statistics*
- “The slow pace of rapid technological change: gradualism and punctuation in technological change”  
Levinthal (1998) | *Industrial and Corporate Change*
- “Dominance by birthright: Entry of prior radio producers and competitive ramifications in the U.S. television receiver industry”  
Klepper & Simons (2000) | *Strategic Management Journal*

## 5. Incumbent Adaptation to Technological Change

- “Architectural innovation: The reconfiguration of existing product technologies and the failure of established firms”  
Henderson & Clark (1990) | *Administrative Science Quarterly*
- “Absorptive capacity: A new perspective on learning and innovation”  
Cohen & Levinthal (1990) | *Administrative Science Quarterly*
- “Customer power, strategic investment, and the failure of leading firms”  
Christensen & Bower (1996) | *Strategic Management Journal*
- “Capabilities, cognition, and inertia: Evidence from digital imaging”  
Tripsas & Gavetti (2005) | *Strategic Management Journal*
- “Complementary assets as pipes and prisms: Innovation incentives and trajectory choices”  
Wu, Wan & Levinthal (2014) | *Strategic Management Journal*
- “Incumbent adaptation to technological change: The past, present, and future of research on heterogeneous incumbent response”  
Eggers & Park (2018) | *Academy of Management Annals*

## 6. Intellectual Property & Markets for Technology

- “Profiting from technological innovation: Implications for integration, collaboration, licensing and public policy”  
Teece (1986) | *Research Policy*
- “The product market and the market for 'ideas': Commercialization strategies for technology entrepreneurs”  
Gans & Stern (2003) | *Research Policy*
- “Don't fence me in: Fragmented markets for technology and the patent acquisition strategies of firms.”  
Ziedonis (2004) | *Management Science*
- “Ideas for rent: An overview of markets for technology”  
Arora & Gambardella (2010) | *Industrial and Corporate Change*
- “Do patent assets have a second life when startups fail? An analysis of the redeployment likelihood and mode of transfer”  
Serrano & Ziedonis (2025) | *Strategic Management Journal*

### *Additional Readings (Optional)*

- “The changing technology of technical change: General and abstract knowledge and the division of innovative labour”  
Arora & Gambardella (1994) | *Research Policy*
- “How do patent laws influence innovation? Evidence from nineteenth-century world's fairs”  
Moser (2005) | *American Economic Review*
- “Patent protection, complementary assets, and firms' incentives for technology licensing.”  
Arora & Ceccagnoli (2006) | *Management Science*
- “The impact of uncertain intellectual property rights on the market for ideas”  
Gans, Hsu & Stern (2008) | *Management Science*

- “Intellectual property rights and innovation: Evidence from the human genome”  
Williams (2013) | *Journal of Political Economy*
- “Patent publication and the market for ideas”  
Hegde & Luo (2018) | *Management Science*
- “What is a patent worth? Evidence from the US patent 'lottery'”  
Farre-Mensa, Hegde & Ljungqvist (2020) | *Journal of Finance*
- “Science and the market for technology”  
Arora, Belenzon & Suh (2021) | *Management Science*
- “When do firms trade patents?”  
Kwon, Park & Deng (2022) | *Organization Science*

## 7. Organizational Structure & Innovation

- “An efficient frontier in organization design: Organizational structure as a determinant of exploration and exploitation”  
Csaszar (2013) | *Organization Science*
- “The influence of hierarchy on idea generation and selection in the innovation process”  
Keum & See (2017) | *Organization Science*
- “Cognitive and structural antecedents of innovation: A large-sample study”  
Lee & Csaszar (2020) | *Strategy Science*
- “Mind the gaps: How organization design shapes the sourcing of inventions”  
Eklund & Kapoor (2022) | *Organization Science*
- “Organizing for adaptation: Does managerial hierarchy help or hinder product adaptation in startups?”  
Hall, Shermon, Allen & Howell (2025) | *Working Paper*

### *Additional Readings (Optional)*

- “Two faces of search: Alternative generation and alternative evaluation”  
Knudsen & Levinthal (2007) | *Organization Science*
- “Organizing for innovation: A contingency view on innovative team configuration”  
Vakili & Kaplan (2021) | *Strategic Management Journal*
- “The myth of the flat start-up: Reconsidering the organizational structure of start-ups”  
Lee (2022) | *Strategic Management Journal*

## 8. Entrepreneurship & Innovation

- “When innovations meet institutions: Edison and the design of the electric light”  
Hargadon & Douglas (2001) | *Administrative Science Quarterly*
- “Entrepreneurial action and the role of uncertainty in the theory of the entrepreneur”  
McMullen & Shepherd (2006) | *Academy of Management Review*
- “Spawned with a silver spoon? Entrepreneurial performance and innovation in the medical device industry”  
Chatterji (2009) | *Strategic Management Journal*
- “Zooming in or zooming out: Entrants' product portfolios in the nascent drone industry.”  
Shermon & Moeen (2022) | *Strategic Management Journal*

- “Free range startups? Market scope, academic founders, and the role of general knowledge in AI”  
Chattopadhyay, Honoré & Won (2025) | *Strategic Management Journal*

## 9. The Geography of Innovation

- “R&D spillovers and the geography of innovation and production”  
Audretsch & Feldman (1996) | *American Economic Review*
- “Roads and innovation”  
Agrawal, Galasso & Oettl (2017) | *Review of Economics and Statistics*
- “Microgeography and the direction of inventive activity”  
Catalini (2017) | *Management Science*
- “Innovation on wings: Nonstop flights and firm innovation in the global context”  
Bahar, Choudhury, Kim & Koo (2023) | *Management Science*
- “Proximate (co-) working: Knowledge spillovers and social interactions”  
Roche, Oettl & Catalini (2024) | *Management Science*

### *Additional Readings (Optional)*

- “The search for R&D spillovers”  
Griliches (1992) | *The Scandinavian Journal of Economics*
- “The economics of maps”  
Nagaraj & Stern (2020) | *Journal of Economic Perspectives*
- “The private impact of public data: Landsat satellite maps increased gold discoveries and encouraged entry”  
Nagaraj (2022) | *Management Science*

## 10. Immigration and Innovation

- “The supply side of innovation: H-1B visa reforms and US ethnic invention”  
Kerr & Lincoln (2010) | *Journal of Labor Economics*
- “Which immigrants are most innovative and entrepreneurial? Distinctions by entry visa”  
Hunt (2011) | *Journal of Labor Economics*
- “Immigration and ideas: what did Russian scientists 'bring' to the United States?”  
Ganguli (2015) | *Journal of Labor Economics*
- “The ethnic migrant inventor effect: Codification and recombination of knowledge across borders”  
Choudhury & Kim (2019) | *Strategic Management Journal*
- “Does employing skilled immigrants enhance competitive performance? Evidence from European football clubs”  
Glennon, Morales, Carnahan & Hernandez (2025) | *Management Science*

### *Additional Readings (Optional)*

- Mata, J., & Alves, C. (2018). The survival of firms founded by immigrants: Institutional distance between home and host country, and experience in the host country. *Strategic Management Journal*, 39(11), 2965-2991.

- Immigration and Entrepreneurship in the United States  
Azoulay, Jones, Kim & Miranda (2022) | *American Economic Review: Insights*
- The Contribution Of High-Skilled Immigrants To Innovation In The United States  
Bernstein, Diamond, Jiranaphawiboon, McQuade & Pousada (2022) | *NBER Working Paper*

## 11. Digitization

- “Digital entrepreneurship: Toward a digital technology perspective of entrepreneurship.”  
Nambisan (2017) | *Entrepreneurship Theory and Practice*
- “Does copyright affect reuse? Evidence from Google Books and Wikipedia”  
Nagaraj (2018) | *Management Science*
- “What is different about digital strategy? From quantitative to qualitative change”  
Adner, Puranam & Zhu (2019) | *Strategy Science*
- “Changing the channel: Digitization and the rise of 'middle tail' strategies”  
Benner & Waldfoegel (2023) | *Strategic Management Journal*
- “Hyperspecialization and hyperscaling: A resource-based theory of the digital firm”  
Giustiziero, Kretschmer, Somaya & Wu (2023) | *Strategic Management Journal*

### *Additional Readings (Optional)*

- “Open source collaboration in digital entrepreneurship”  
Lin & Maruping (2022) | *Organization Science*
- Digitization, prediction, and market efficiency: Evidence from book publishing deals.  
Peukert & Reimers (2022) | *Management Science*

## 12. Artificial Intelligence & Innovation

- “Artificial intelligence, firm growth, and product innovation”  
Babina, Fedyk, He & Hodson (2023) | *Journal of Financial Economics*
- “Artificial intelligence and the changing sources of competitive advantage.”  
Krakowski, Luger & Raisch (2023) | *Strategic Management Journal*
- “Training with AI: Evidence from chess computers”  
Gaessler & Piezunka (2023) | *Strategic Management Journal*
- “Artificial intelligence and strategic decision-making: Evidence from entrepreneurs and investors”  
Csaszar, Ketkar & Kim (2024) | *Strategy Science*
- “Generative artificial intelligence and evaluating strategic decisions”  
Doshi, Bell, Mirzayev & Vanneste (2025) | *Strategic Management Journal*

### *Additional Readings (Optional)*

- “Robots and jobs: Evidence from US labor markets.”  
Acemoglu & Restrepo (2020) | *Journal of Political Economy*
- “Artificial intelligence and management: The automation–augmentation paradox.” |  
Raisch & Krakowski (2021) | *Academy of Management Review*
- “The robot revolution: Managerial and employment consequences for firms.”  
Dixon, Hong & Wu (2021) | *Management Science*

- “How does artificial intelligence improve human decision-making? Evidence from the AI-powered Go program”  
Choi, Kang, Kim & Kim (2025) | *Strategic Management Journal*

### Optional Book Readings

The following is a list of classic and contemporary books that dive deeper into various phenomena related to innovation and research design that student may find useful as they develop their research trajectories.

#### *Technology & Innovation*

- Rosenberg, N. (1982). *Inside the Black Box: Technology and Economics*. Cambridge University Press.
- Mowery, D. C., & Rosenberg, N. (1999). *Paths of innovation: Technological change in 20th-century America*. Cambridge University Press.
- Arthur, W. B. (2009). *The nature of technology: What it is and how it evolves*. Simon and Schuster.
- Galasso, A. (2024). *The Management of Innovation: Managing and Creating Technology Capital*. University of Toronto Press.

#### *Econometrics & Research Design*

- Angrist, J. D., & Pischke, J. S. (2009). *Mostly harmless econometrics: An empiricist's companion*. Princeton University Press.
- Pearl, J., & Mackenzie, D. (2018). *The book of why: the new science of cause and effect*. Basic books.
- Edmans, A. (2024). *May contain lies: How stories, statistics, and studies exploit our biases—And what we can do about it*. University of California Press.