INFO7374 - BUSINESS PROCESS ENGINEERING SYLLABUS II

FALL 2025

Course Information
Course Title: Business Process Engineering II
Course Number: 7374
Term and Year: Fall 2025
Credit Hour: 4
CRN: INFO7374.17720.202610
Course Format: On Ground

Instructor Information
Full Name: Shannon Pettiford
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Office Hours: By appointment via email

Instructor Biography
Shannon Pettiford, M.S., PMP, PMI-ACP is a seasoned professional with expertise in program and project management, business process improvement, and operations management. His career spans decades, managing global projects and programs are focused on digital marketing, information technology, human resources, finance, and strategic initiatives. He is a member of the Project Management Institute (PMI.org) and holds the Project Management Professional (PMP), Agile Certified Practitioner (PMI-ACP), and Certified Scrum Master (CSM) certifications. He obtained his undergraduate degree in Computer Science from East Tennessee State University and earned his master's degree in Project Management from Northeastern University, with a concentration in program and portfolio management. His continued research focuses on risk management, business process development, strategic initiatives, and business relationship management. Mr. Pettiford's career spans various positions in the information technology field as a web developer, software programmer, systems analyst, and business analyst. His experience working in cross-functioning roles in Fortune 500 organizations provides him with keen insights and lessons learned in finance, information technology, marketing, and logistics. He works full-time at Boston Consulting Group as an IT Program Manager focused on office expansions, M&A, business acquisitions, and business engagement models globally. With a successful track record in program and project management, Mr. Pettiford delivers on organizational performance improvement, cost reduction methodologies, and business transformation. Mr. Pettiford also teaches graduate-level courses in project management at Northeastern University, the University of Kansas, and the Harvard Extension School.Please insert a brief instructor biography here.

Course Prerequisites
Please review the academic catalog to identify any course prerequisites

Course Description
This course provides a comprehensive, interdisciplinary approach to designing, managing, and delivering successful products in a rapidly changing business environment. Students will develop practical skills in product management, supply chain strategy, and modern delivery methodologies, while learning how to integrate these disciplines into coherent business operations.

Students will explore the role of the product manager, conduct market analysis, build product roadmaps, prioritize features, and measure success with key metrics. They will also analyze global supply chain strategies, assess the impact of emerging technologies such as AI, and develop resilience strategies for geopolitical disruptions. The course further examines Agile, Lean, CI/CD, and DevOps practices to accelerate delivery cycles and drive innovation.

Throughout the course, students will apply process-led thinking—identifying inefficiencies, mapping workflows, and aligning technology adoption with optimized processes—ensuring sustainable, long-term improvement rather than short-term fixes.

Learning Outcomes

1. Apply product management principles to define product visions, create strategic roadmaps, and prioritize features that align with customer needs and business goals.

2. Analyze and optimize supply chain strategies by assessing technology integration, risk factors, and geopolitical impacts to improve resilience and efficiency.

3. Implement modern delivery practices including Agile, Lean, CI/CD, and DevOps to enhance speed, quality, and adaptability in product and service delivery.

4. Evaluate performance using data-driven metrics such as KPIs, retention, and engagement to inform decision-making and continuous improvement.

5. Integrate process-led thinking to identify inefficiencies, redesign workflows, and ensure technology adoption supports sustainable, long-term business value.

Required Tools and Course Textbooks

The following texts are REQUIRED:

- "Inspired: How to Create Tech Products Customers Love" by Marty Cagan (Second Edition) ISBN-13: 978-1119387503

- The Lean, Smart, Digital Supply Chain: How to Enable a Lean and Agile Global Supply Chain with the Help of Technology by Paul Myerson (Published May 2025)

The following texts are OPTIONAL:

Title: The Design Thinking Playbook: Mindful Digital Transformation of Teams, Products, Services, Businesses and Ecosystems (Design Thinking Series)

Authors: Michael Lewrick , Patrick Link Date: May 22, 2018

ISBN-13: 978-1119467472

Title: Mapping Experiences: A Complete Guide to Customer Alignment Through Journeys, Blueprints, and Diagrams Author: James Kalbach

Date: Feb 9, 2021

ISBN-13: 978-1492076636

Software & Related Equipment
- Adobe Reader
- MS Word (or equivalent)
- MS Excel (or equivalent)
- MS PowerPoint (or equivalent)

Course Schedule/Topics Covered

Week	Topic	Weekly Module Contents	The Lean, Smart, Digital Supply Chain: How to Enable a Lean…	"Inspired: How to Create Tech Products Customers Love"…
1	Introduction to Product Management	Role of Product Manager; Role and responsibilities; Product Lifecycle and Strategy (Intro, Growth, Maturity, Decline); Identifying Customer Needs; Case discussion (Google, Apple);	Chapters 1 & 2	Chapters 1 & 2

Week	Topic	Weekly Module Contents	The Lean, Smart, Digital Supply Chain: How to Enable a Lean...	"Inspired: How to Create Tech Products Customers Love"...
		Icebreaker; Team brainstorming		
2	Market Analysis & Product Vision	Competitive Analysis; Market sizing; Competitor benchmarking; Developing Product Vision and Roadmaps; Workshop on product vision and roadmap	Chapter 3	Chapter 4, 5, 14, 24, 25
3	Product Development & Prioritization	Agile vs Waterfall; Prioritizing Features (MoSCoW, RICE, Kano); User story creation; Backlog ranking; Scrum simulation	Chapters 4 & 5	Chapter 18, 20, 22, 23
4	Product Metrics & Case Study	KPIs (North Star, retention, churn, engagement); GA4 overview; Case study on metrics; Translating goals to KPIs	Chapters 15 & 16	Chapter 28, 31
5	Team Assignment Presentation (PM)	Team presentations; Feedback & discussion	-	Chapters 1,2,22,23,28
6	Introduction to Supply Chain Management	SCM fundamentals; Objectives; Strategy and design; Procurement, production, distribution; Strategy alignment	Chapters 1, 2, 6	-
7	IT Logistics Part 1	IT in logistics (WMS, TMS, RFID, IoT, Blockchain); Smart	Chapters 7,8	Chapters 7

Week	Topic	Weekly Module Contents	The Lean, Smart, Digital Supply Chain: How to Enable a Lean...	"Inspired: How to Create Tech Products Customers Love"...
		warehousing; Real-time tracking; Last-mile innovations		
8	Disruptive Forces in Logistics	General AI vs Narrow AI; Multimodal models; RL; Reasoning agents; AI in autonomous logistics; Predictive analytics; Governance and ethics	Chapters 5,6,16,17	Chapters 8
9	Team Assignment Presentation (SCM)	Team presentations; SCM strategy case; Feedback	-	
10	Agile & Lean Principles I	Agile values, principles, ceremonies; Scrum/Kanban; Lean thinking; Waste elimination; Continuous improvement	Chapters 4, 13	Chapters 7, 32,33
11	Agile & Lean Principles II	CI/CD; DevOps culture; Automation; MVP delivery pipelines	Chapter 14	Chapters 7, 34
12	Case Study Analysis & Research I	Agile PM in complex environments; Industry case studies (software, healthcare, manufacturing)	-	
13	Case Study Analysis & Guest Lectures II	Integrating supply chain & product strategies; Guest industry experts		-
14	Final Review & Wrap-up	Comprehensive review;	-	-

Week	Topic	Weekly Module Contents	The Lean, Smart, Digital Supply Chain: How to Enable a Lean...	"Inspired: How to Create Tech Products Customers Love"...
		Reflections; Future trends (Agile-lean hybrids, AI in delivery ops, digital twins)		
15	Final Presentation	Team project integrating Agile/Product/SCM principles	-	-

Assignment Grading

Assignment type	Percentage
Attendance	*2.5%*
Participation	*2.5%*
Quiz	*15%*
Project	*35%*
Exam	*40%*
Final Survey	*5%*
Total	**100%**

Grading Scale

95-100% A	87-89.9% B+	77-79.9% C+	69.9% or below F
	84-86.9% B	74-76.9% C	
90-94.9% A-	80-83.9%B-	70-73.9% C-	

Attendance/Late Work Policy

Students registered in MGEN courses (INFO, CSYE, and DAMG) are allowed **a maximum of 2 absences per course, with 3 or more absences resulting in an automatic 'F' for that course.** Students are expected to inform their instructors of any absences in advance of the class; if a student is sick long-term or experiences a medical issue that prevents class attendance, it is strongly encouraged that they speak with their Academic Advisor (coe-mgen-gradadvising@northeastern.edu) to learn more about the Medical Leave of Absence. Should a student anticipate being unable to attend 3 or more classes, they should discuss their situation with their Academic Advisor to explore other types of leave in accordance with the University's academic and global entry expectations. International students should review the Office of Global Services webpage to understand their visa compliance requirements.

Teaching Assistants (TAs) or Instructional Assistants (IAs) will be present at each class to collect student attendance.

For further details, refer to the College of Engineering's Attendance Policy (https://catalog.northeastern.edu/graduate/engineering/academic-policies-

procedures/attendance-policy/) and the MGEN Frequently Asked Questions (https://coe.northeastern.edu/academics-experiential-learning/academic-departments/mgen/frequently-asked-questions/).

Late Work Policy

Standard Deadlines: Assignments must be submitted by the deadlines specified in the syllabus or as posted on Canvas.

Late Submissions: Late submissions will incur the following penalties unless prior approval is obtained:

- Up to 24 hours late: 10% deduction.

- 24–48 hours late: 20% deduction.

- More than 48 hours late: No credit (0 points).

Extension Requests: Students must request an extension within **48 hours** before the deadline via email. Requests submitted after this timeframe will only be considered under exceptional circumstances (e.g., medical emergencies).

End-of-Course Evaluation Surveys
Your feedback regarding your educational experience in this class is particularly important to the College of Engineering. Your comments will make a difference in the future planning and presentation of our curriculum.

At the end of this course, please take the time to complete the evaluation survey at **https://neu.evaluationkit.com**. Your survey responses are **completely anonymous and confidential**. For courses 6 weeks in length or shorter, surveys will be open one week prior to the end of the courses; for courses greater than 6 weeks in length, surveys will be open for two weeks. An email will be sent to your Northeastern University Mail account notifying you when surveys are available.

Academic Integrity

Students are expected to uphold academic integrity in all coursework. Plagiarism, cheating, or dishonesty will result in disciplinary action, which may include failure of the assignment or the course. For details, refer to Northeastern University's Academic Integrity Policy (https://catalog.northeastern.edu/handbook/policies-regulations/academic-integrity/) and the Code of Student Conduct (Code of Student Conduct < Northeastern University Academic Catalog).
A faculty member who suspects a student in their class, or working under their direction, of violating the Academic Integrity Policy can choose to file an official report with the Office of Student Conduct and Conflict Resolution.

Code of Student Conduct

Students are expected to adhere to the full Code of Student Conduct, which encompasses not only academic integrity but also behavioral expectations.

Violations may lead to disciplinary actions as outlined in the university's Code of Student Conduct (https://catalog.northeastern.edu/handbook/code-student-conduct/).

Grade Appeals

The Grade Appeal Committee for the Multidisciplinary Graduate Engineering unit (MGEN) is comprised of both faculty and staff and is led by members appointed by MGEN's Executive Director. The primary purpose of this committee is to investigate any discrepancies associated with final grades issued in MGEN-supervised courses. It serves the following programs within the Multidisciplinary Graduate Engineering unit: Information Systems, Information Systems-Bridge, Software Engineering Systems, Data Architecture & Management, Telecommunications, and Cyber Physical Systems. The MGEN Grade Appeal Committee convenes monthly to review appeals that have been submitted.

Students may appeal grades within one month (or 4 weeks) within the academic determination. Appeals must be submitted in writing with a clear explanation for reconsideration. For details, refer to the Appeals Policy (https://catalog.northeastern.edu/graduate/engineering/academic-policies-procedures/appeals-policy/) and the Appeal Process as outlined on the MGEN FAQ Webpage (https://coe.northeastern.edu/academics-experiential-learning/academic-departments/mgen/frequently-asked-questions/) for more details.

Incomplete Grades

An 'Incomplete' grade may only be granted under exceptional circumstances, peruniversity policy. To request an incomplete grade, students must consult with the instructor, OGS (for international students only), and formalize the agreement as outlined in Northeastern's Incomplete Grade Policy (Requesting and Clearing An Incomplete Grade < Northeastern University Academic Catalog). If the missing assignment(s) have not been submitted to the instructor within 30 days from the end of the term in which the course was offered, or the agreed upon due date, the grade entered will reflect the student's grade in the course for the work completed and the missing assignments receiving no credit toward the final grade.

MGEN Student Feedback

Students who would like to provide the MGEN unit with anonymous feedback on this particular course, Teaching Assistants, Instructional Assistants, professors, or to provide general feedback regarding their program, may do so using this survey: https://neu.co1.qualtrics.com/jfe/form/SV_cTIAbH7ZRaaw0Ki

University Health and Counseling Services

As a student enrolled in this course, you are fully responsible for assignments, work, and course materials as outlined in this syllabus and in the classroom. Over the course of the semester if you experience any health issues, please contact UHCS.

For more information, visit https://www.northeastern.edu/uhcs.

Student Accommodations
Northeastern University and the Disability Resource Center (DRC) are committed to providing disability services that enable students who qualify under Section 504 of the Rehabilitation Act and the Americans with Disabilities Act Amendments Act (ADAAA) to participate fully in the activities of the university. To receive accommodations through the DRC, students must provide appropriate documentation that demonstrates a current substantially limiting disability.

For more information, visit https://drc.sites.northeastern.edu.

Library Services
The Northeastern University Library is at the hub of campus intellectual life. Resources include over 900,000 print volumes, 206,500 e-books, and 70,225 electronic journals.

For more information and for education specific resources, visit https://library.northeastern.edu
Network Campus Library Services: Northeastern University Library Global Campus Portals

24/7 Canvas Technical Help
For immediate technical support for Canvas, call 617-373-4357 or email help@northeastern.edu

Canvas Student Resources: https://canvas.northeastern.edu/student-resources/

For assistance with my Northeastern e-mail, and basic technical support:
Visit ITS at https://its.northeastern.edu
Email: help@northeastern.edu
ITS Customer Service Desk: 617-373-4357

Diversity and Inclusion
Northeastern University is committed to equal opportunity, affirmative action, diversity, and social justice while building a climate of inclusion on and beyond campus. In the classroom, members of the University community work to cultivate an inclusive environment that denounces discrimination through innovation, collaboration, and an awareness of global perspectives on social justice.

Please visit http://www.northeastern.edu/oidi/ for complete information on Diversity and Inclusion

Title IX
Title IX of the Education Amendments of 1972 protects individuals from sex or gender-based discrimination, including discrimination based on gender-identity, in educational programs and activities that receive federal financial assistance. Northeastern's Title IX Policy prohibits Prohibited Offenses, which are defined as sexual harassment, sexual assault, relationship or domestic violence, and stalking. The Title IX Policy applies to the entire community, including male, female, transgender students, faculty, and staff. In case of an emergency, please call 911.

*Please visit **https://www.northeastern.edu/ouec** for a complete list of reporting options and resources both on- and off-campus.*