SEIS 666

Digital Transformation 2.0

with Generative AI

SPRING 2026 COURSE BIBLE

"From PowerPoint to Knowledge Graphs: A Course in Real-Time Transformation"

Daniel Yarmoluk

University of St. Thomas — Opus College of Business

School of Engineering & Information Sciences

Spring 2026

Table of Contents

Part I Digital Transformation — The Historical Record (2016–2024)

Part II The Intelligent Textbook

Part IIISpring 2026 — What We Actually Did (Week by Week)

Part IV The Speed Methodology

Part V Key Concepts — The New Vocabulary

Part VI Where We Go From Here (Weeks 6–14)

AppendixResource Links

PART I

Digital Transformation
The Historical Record

2016–2024: What we used to teach. Still foundational. Now historical context.

The materials below represent the original SEIS 666 lecture sequence, developed between 2024 and 2025. They cover the canonical frameworks, models, and case studies that defined how organizations approached digital transformation before generative AI rewrote the rules. This foundation still matters — you cannot understand where we are going without knowing where we came from.

LECTURE 1

Introduction to Digital Transformation

The Digital Helix framework and the DNA of digitally transformed organizations. Why the best companies deliver 2x speed at 30% lower operating expenditure — and how they structure themselves to sustain it. This is the baseline: understand the mechanics before questioning the model.

LECTURE 2

Data Monetization, Value & Use Case Identification

How organizations identify digital transformation opportunities by working backward from value. The methods for finding, qualifying, and prioritizing data-driven use cases — a skill that remains essential even as the tools to execute them change completely.

LECTURE 3

Digital Maturity Models + Generative AI

Capability assessment and readiness frameworks: BCG Digital Maturity, McKinsey Superagency, and where generative AI fits within existing organizational models. The maturity curve has not changed — the speed at which you traverse it has.

LECTURE 4

AI and LLMs in Digital Transformation

GPT-4 technical foundations and how large language models change the digital transformation equation. Tokenization, attention mechanisms, context windows — the engineering that makes everything else possible. Understanding the machine is not optional.

LECTURE 5

Hands-on with ChatGPT and Generative AI

First-generation AI interaction: comparing platforms, understanding capabilities and limitations, building intuition through direct use. This was revolutionary in 2024. By 2026, it is table stakes.

LECTURE 6

Prompt Engineering

Zero-shot, few-shot, chain-of-thought, and system prompts. The art of communicating with language models. Still relevant as a foundational skill, but increasingly abstracted by agent architectures and structured context protocols.

LECTURES 8–9

Text-to-Image AI & Generative AI Centers of Excellence

Diffusion models, DALL-E, and the visual generation revolution — paired with the organizational question of how to stand up a Generative AI Center of Excellence (GAICoE). The technology has advanced; the governance challenge has only grown more urgent.

LECTURES 10–12

Use Cases, Ethics, and the Future of Work

Real-world DT case studies, responsible AI frameworks, and workforce transformation. The ethical questions raised in these lectures have not been answered — they have multiplied. VUCA is no longer a framework. It is the weather.

Key Frameworks Referenced: VUCA, AI Value Framework, BCG Digital Maturity Model, McKinsey Superagency Report, Digital Helix, GAICoE Operating Model.

Note: Full lecture slides from 2024–2025 are available on Canvas. These formed the foundation for what comes next.

PART II

The Intelligent Textbook

108,432 words. 33 MicroSims. Built with AI in 2 weeks.
The textbook IS the transformation.

Between January and February 2026, the entire course was rebuilt as an interactive, AI-generated intelligent textbook. It was authored using Claude Code — the same AI tooling the course teaches students to use. The medium is the message.

11	108K	33	200	2
CHAPTERS	WORDS	MICROSIMS	CONCEPT GRAPH	WEEKS TO BUILD

What Makes It Different

The chapters map to the original lecture sequence but go significantly deeper. Each chapter includes interactive MicroSims — browser-based simulations that let you manipulate the concepts, not just read about them. Adjust parameters. See outcomes change. Build intuition through interaction.

The 200-concept learning graph connects ideas across chapters, showing how digital maturity models relate to agent architectures, how prompt engineering evolves into structured context, and how organizational readiness maps to technical capability.

The Meta-Lesson

This textbook was built using the exact tools and methodologies it teaches. A single instructor, working with AI coding assistants, produced in two weeks what would have taken a team of authors and developers months. That is not a footnote. That is the thesis of the course.

Access: yarmoluk.github.io/Digital-Transformation-with-AI-Spring-2026/

PART III

Spring 2026
What We Actually Did

The week-by-week record. This is where the course went off-script.

WEEK 1 — FEBRUARY 6, 2026

Down the Rabbit Hole

- Threw out the prepared slides on the first day
- Asked the class a single question: *"Do you want PowerPoint or the rabbit hole?"*
- The class chose the rabbit hole. Workshop-style from day one.
- Established the operating principle: build, do not theorize

> *"I don't want to lecture from PowerPoint anymore."*

WEEK 2 — FEBRUARY 12, 2026

The Intelligent Textbook & MicroSims

- Revealed the AI-built textbook: 11 chapters, 108K words, 33 interactive MicroSims
- Live Claude Code demonstration — students watched real-time AI-assisted building for the first time
- Showed the 200-concept learning graph connecting ideas across the entire curriculum
- Established the baseline: this is what one person with AI tools can produce in two weeks

> *"This took me weeks last year. Now it takes minutes."*

WEEK 3 — FEBRUARY 19, 2026

From Transformation to Hyperspeed

- The 60-year arc of digital transformation in 15 minutes: mainframes to ERP to cloud to agents
- Live demo: built a working application in Claude Code during class
- Use Case Prioritization Framework: 2×2 matrix mapping impact against effort
- Hands-on workshop: students built AI use cases for their own organizations
- Key shift: from "what AI can do" to "what can I build with AI right now"

`Presentation: SEIS666_Week3_Feb19.html`

WEEK 4 — FEBRUARY 26, 2026

The Week Everything Changed

- Three events in 72 hours reshaped the entire industry landscape:

1. OpenAI launched **Frontier Alliance** — enterprise partnerships with McKinsey, BCG, Accenture, and Capgemini
2. Anthropic launched **Claude Cowork** with 13 enterprise plugins — agents that connect directly into business workflows
3. NIST launched the **AI Agent Standards Initiative** — the government moved to regulate what did not exist six months ago

- **The SaaSpocalypse:** $1 trillion erased from software stocks in a week as markets priced in the agent future
- Career discussion: Agent Architects, MCP developers, AI Security engineers — roles that did not exist in the 2024 syllabus
- Two competing worldviews: *"AI Eats Everything"* vs. *"AI Amplifies Everything"*
- The 12–18 month career window: why the next year and a half defines a generation of careers

`Presentation: SEIS-666-lecture-2026-02-26.html`

WEEK 5 — MARCH 12, 2026 (MAKEUP)

Then vs. Now

- Side-by-side comparison: the 2025 syllabus vs. the 2026 reality
- Every single lecture topic shifted from "knowing about AI" to "building with AI"
- **RAG vs. Knowledge Graphs:** why structure beats retrieval — same model, same prompt, different structure produces fundamentally different results
- Introduced the Graphify.md thesis: structured context as a product category
- The skills stack, updated: agent architecture > prompt engineering > AI awareness
- Key message: the world changed between syllabus and semester. We adapted. That is the skill.

`Presentation: SEIS666-Week5-Mar12-ThenVsNow.html`

PART IV

The Speed Methodology

14 operating principles for AI-assisted work.

The Speed Methodology is a framework for working with AI at the pace the technology enables, without sacrificing intelligence or rigor. The core thesis: speed with intelligence, not speed instead of intelligence.

These 14 principles emerged from the practice of building this course in real-time. They are not theoretical. Every one was tested under production conditions — building lectures, creating the textbook, developing MicroSims, and adapting to three industry-changing events in a single week.

Core Principles

01 **Ship, then refine.** The first version teaches you what the second version should be.

02 **Structure beats volume.** A knowledge graph with 50 nodes outperforms 50 pages of flat text.

03 **Context is the product.** The quality of AI output is determined by the quality of structured context you provide.

04 **Build the thing, not the plan for the thing.** Prototypes answer questions that documents never will.

05 **Automate the repeatable. Protect the creative.** Use AI for scaffolding. Use your brain for judgment.

06 **Velocity requires direction.** Moving fast without knowing where you are going is not speed. It is drift.

07 **Every interaction is a training loop.** You are teaching the AI how to work with you, and you are learning how to think with it.

08 **Compress, do not skip.** The 60-year arc in 15 minutes is compression. Skipping the 60-year arc is ignorance.

09 **Show the delta, not the output.** People attribute finished work to AI. Show them the before and after, and they see the graph.

10 **The tool changes. The judgment does not.** Platforms will rotate. Critical thinking is permanent infrastructure.

11 **Work in public.** Building in front of people creates accountability, trust, and feedback loops you cannot get any other way.

12 **Constraints are creative fuel.** Limitations force elegant solutions. Unlimited tokens produce unlimited mediocrity.

13 **Read the room, not the roadmap.** When three things change in 72 hours, the syllabus is a suggestion.

14 **The best documentation is the artifact.** This course bible is the methodology in practice.

Full document available: The complete Speed Methodology with expanded rationale and examples is available as a separate PDF (SEIS666-Speed-Methodology.pdf) on Canvas.

PART V

Key Concepts
The New Vocabulary

Terms we use in 2026 that did not exist in the 2024 syllabus.

Language changes when reality changes. The following terms have entered our working vocabulary since the course was last designed. Understanding them is not optional.

MCP (Model Context Protocol)

An open standard for how AI tools consume structured context. MCP defines the interface between an AI model and external data sources, tools, and services — enabling agents to interact with the world beyond their training data in a standardized way.

Agent Architecture

The design of multi-agent systems with tool use, state management, and failure modes. Agent architecture encompasses how AI agents coordinate tasks, maintain context across interactions, handle errors gracefully, and integrate with human workflows.

Knowledge Graphs

Structured representations of entities and relationships that enable reasoning. Unlike flat documents or vector databases, knowledge graphs preserve the connections between concepts — allowing AI systems to traverse relationships rather than match keywords.

SaaSpocalypse

The trillion-dollar selloff in software stocks triggered by the emergence of AI agents capable of replacing entire categories of SaaS products. When agents can perform the work that software automates, the value proposition of subscription software changes fundamentally.

Frontier Alliance

OpenAI's enterprise partnership program with major consulting firms including McKinsey, BCG, Accenture, and Capgemini. Represents the formalization of AI-consulting convergence and the acceleration of enterprise AI adoption through established delivery channels.

Claude Cowork

Anthropic's enterprise agent platform featuring a plugin ecosystem that connects AI agents directly into business tools and workflows. Launched with 13 enterprise integrations, signaling the shift from chatbot interfaces to embedded agent architectures.

RAG (Retrieval-Augmented Generation)

A technique for feeding documents to AI via vector similarity search. RAG converts documents into numerical embeddings and retrieves the most similar chunks at query time. Effective for broad document search, but limited by its inability to preserve structural relationships.

GraphRAG

An evolution of RAG that uses knowledge graphs instead of flat vector retrieval. By traversing entity relationships rather than matching embeddings, GraphRAG produces answers that reflect the structure of the domain — not just the proximity of text chunks.

Vibe Coding

Building software by describing intent to AI coding assistants rather than writing code line by line. The developer focuses on what the system should do; the AI handles implementation. Quality depends on the developer's ability to specify, review, and refine.

Agent Skills

Structured markdown files that transform a general-purpose AI into a domain specialist. Skills define context, constraints, output formats, and behavioral rules — converting generic capability into repeatable, high-quality domain performance.

MicroSims

Interactive browser-based simulations for learning concepts. Each MicroSim isolates a single idea and lets the learner manipulate parameters to see how outcomes change. Used throughout the Intelligent Textbook to replace passive reading with active exploration.

Digital Maturity Model

A framework for assessing an organization's readiness for AI and digital transformation. Measures capabilities across dimensions including data infrastructure, talent, governance, and culture. The model predates AI agents but remains essential for understanding starting position.

GAICoE (Generative AI Center of Excellence)

A cross-functional organizational unit responsible for AI strategy, governance, tooling standards, and capability development. The GAICoE bridges the gap between experimental AI use and enterprise-scale adoption, ensuring both innovation velocity and risk management.

PART VI

Where We Go From Here

Weeks 6–14: Nine weeks of building.

The first five weeks established the context. The remaining nine weeks are about application. The shift is complete: from learning about digital transformation to executing it.

What Lies Ahead

The remaining sessions will cover LLM APIs and integration patterns, multimodal AI capabilities, AI governance and responsible deployment, and advanced case studies. But the lectures are the scaffolding, not the structure. The real learning happens in the project.

The Major Project

Every student will complete a major project that applies the full stack of concepts from this course to a real domain. The project is not a paper. It is not a presentation about what AI could do. It is a working demonstration of what AI does — built by the student, in a domain they choose, using the tools and methodologies covered in this course.

Project details, requirements, and evaluation criteria are available in the separate Project Description document on Canvas.

The Operating Principle

The course began by choosing the rabbit hole over PowerPoint. That choice was not a gimmick. It was a commitment. The remaining nine weeks honor that commitment. We build. We ship. We learn by doing.

The pace will not slow down. The industry is not waiting, and neither are we. Every week between now and the end of the semester, something will change. Our job is not to predict what — it is to be ready when it does.

APPENDIX

Resource Links

Everything in one place.

Course Materials

Intelligent Textbook

11 chapters, 108K words, 33 MicroSims, 200-concept learning graph

Course Presentations

All weekly presentations available on Canvas (SEIS666_Week3_Feb19.html, SEIS-666-lecture-2026-02-26.html, SEIS666-Week5-Mar12-ThenVsNow.html)

Speed Methodology (PDF)

SEIS666-Speed-Methodology.pdf — 14 operating principles for AI-assisted work

2024–2025 Lecture Slides

Full historical lecture deck available on Canvas. Foundation for Part I of this document.

Office Hours & Contact

Calendly — Office Hours

calendly.com/daniel-yarmoluk/30min — Book a 30-minute slot

Key Industry References

McKinsey Superagency Report

The case for AI as organizational amplifier, not replacement

BCG Digital Maturity Model

Framework for assessing organizational readiness across digital dimensions

NIST AI Agent Standards Initiative

SEIS 666 — Spring 2026 — University of St. Thomas
Daniel Yarmoluk — Course Bible v1.0
Built with Claude Code. The medium is the message.