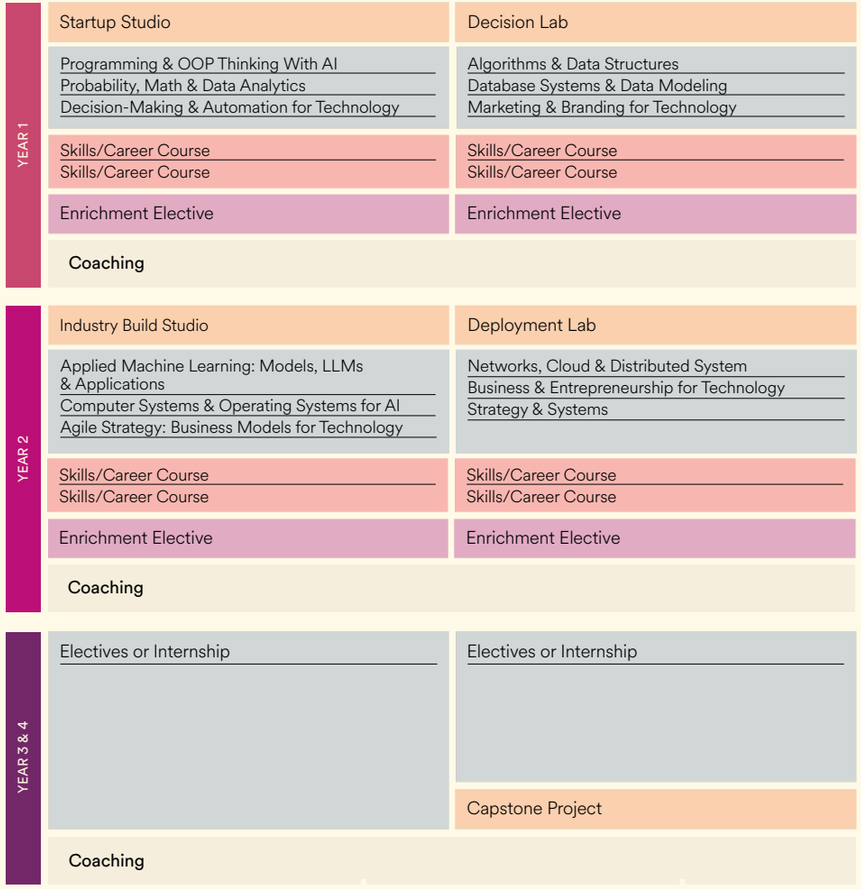
HULT
INTERNATIONAL
BUSINESS SCHOOL

Bachelor's in Computer Science for Business (CSB)

Course Guide

BOSTON

Sample Program Structure*



*Reflects the academic experience of an incoming first-year student. Individual timelines and courses may differ depending on transfer credits.

Core Challenges

Startup Studio
A hands-on, project-based studio where you'll learn how to turn an idea into a working minimum viable product (MVP). You will move from identifying a real problem to defining a target user, designing a solution, and building a functional prototype. This course emphasizes rapid experimentation, iteration, and learning through feedback rather than perfection. You will apply foundational skills from programming, logic, and statistics to make product decisions, design simple decision systems, and test assumptions using data. By the end of the studio, every student team will deliver a working MVP, a product story, and a demo-ready pitch that explains what you built, why it matters, and what you learned through iteration.

Sample of technologies used: Lovable, Replit
Skills taught: Product thinking, rapid prototyping, MVP development, experimentation and iteration, basic user testing, decision-making with data, teamwork, presentation and pitching

Decision Lab
A decision-making course designed to train you to think like a technical business leader. You will learn how to break down ambiguous business problems into structured decision frameworks using data, logic, and clear tradeoff analysis. The course emphasizes how real decisions are made in modern organizations where information is incomplete, constraints are real, and speed matters. You will practice defining success metrics, identifying assumptions, evaluating evidence, and comparing alternative solutions across dimensions such as cost, risk, feasibility, scalability, and user impact. You will learn to communicate decisions through structured reasoning, short memos, and whiteboarding-style explanations. The course builds foundational skills for product thinking, analytics, and technology strategy by teaching you how to connect technical options to business outcomes.

Sample of technologies used: SQL, Python
Skills taught: Decision frameworks, tradeoff analysis, KPI definition, structured reasoning, technical business communication, whiteboarding, stakeholder-ready recommendations.

Industry Build Studio

A project-based studio where you will learn how to deliver digital products in realistic team environments. You will learn to operate like a product and engineering team: scoping a problem, translating needs into requirements, building and shipping a working solution, and iterating based on feedback. The studio is designed to simulate real digital product delivery environments where speed, communication, and execution quality matter. You will apply full-stack development skills to build functional product features, cybersecurity principles to ensure secure design and responsible datahandling, and business analytics to define success metrics and evaluate impact. The emphasis is on delivering a usable product outcome—not just writing code—while learning how to manage tradeoffs, timelines, and stakeholder expectations. By the end of the studio, teams deliver a production-ready prototype, a technical handoff package, and a business-facing presentation that explains what was built, how it works, and how it creates measurable value.

Sample of technologies used: Full-stack web frameworks, SQL databases, API integrations, cloud deployment tools, analytics dashboards, security testing practices
Skills taught: Product delivery, agile execution, stakeholder collaboration, secure system design, applied analytics, team-based software development

Deployment Lab

A project-based, hands-on lab where you will learn how to take a working application and make it real-world ready. You'll move beyond building features and focus on the technical foundations that determine whether software can run securely, reliably, and at scale. The lab emphasizes the transition from “it works locally” to “it works for real users,” using industry practices for deployment, infrastructure, and operational readiness. You will work with a structured product build and be responsible for deploying the system in a cloud environment, configuring secure access, managing environments, and ensuring reliability through logging, monitoring, and performance testing. You'll apply systems-level thinking to identify bottlenecks, failure points, and tradeoffs between cost, speed, security, and scalability. By the end of the lab, you will deliver a deployed system, an infrastructure and security plan, and a technical handoff package that demonstrates readiness for professional engineering environments.

Sample of technologies used: Cloud platforms, deployment pipelines, APIs, authentication systems, logging/monitoring tools, performance testing
Skills taught: Deployment, infrastructure thinking, systems reasoning, security implementation, reliability, scalability planning, technical communication

Core Courses

Programming & OOP Thinking With AI

A hands-on programming course that builds strong coding fundamentals while teaching you how to think like a software designer. You will learn core programming concepts and then transition into object-oriented programming. Emphasis is placed on writing clean, readable code and making design decisions that scale beyond small scripts. You will also practice debugging, version control basics, and building small applications that connect technical choices to real-world use cases.

Languages used: Python
Skills taught: Programming fundamentals, object-oriented design, problem-solving, debugging, code readability, version control basics, applied software thinking

Probability, Math & Data Analytics

A math foundations course focused on the probability and statistics you need for decision-making, data reasoning, and machine learning. You will learn key concepts in algebra, probability, random variables, distributions, expectation, and variance. You will then move into statistical thinking: sampling, estimation, hypothesis testing, confidence intervals, correlation, regression, and model evaluation. The course emphasizes applied interpretation and decision-making rather than heavy proofs, preparing you to understand uncertainty, measure performance, and reason about ML outcomes in real business contexts.

Skills taught: Statistical reasoning, probability foundations, applied algebra for ML, uncertainty thinking, model evaluation, data-driven decision-making, whiteboarding

Decision-Making & Automation for Technology

This course develops the logical foundation behind computing. You will learn how to reason formally using propositional logic, predicate logic, truth tables, and proof techniques. The course introduces sets, relations, functions, and foundational structures such as graphs and trees. You will also explore how these ideas power algorithms, databases, and software systems. The goal is not abstract theory for its own sake, but practical reasoning skills that strengthen problem-solving and technical decision-making.

Skills taught: Logical reasoning, discrete math foundations, structured problem-solving, proof techniques, technical communication, whiteboarding

Algorithms & Data Structures

A core computer science course focused on how to design efficient solutions and reason about performance at scale. You will learn foundational data structures and the algorithms that operate on them. The course emphasizes computational thinking and tradeoffs: choosing the right structure for the right problem, understanding time and space complexity, and evaluating algorithmic efficiency using Big-O notation. You will build implementations, analyze real-world examples, and learn how these concepts directly power modern software systems and AI-enabled applications.

Languages used: Java, Python, Cursor, Claude Code
Skills taught: Algorithmic thinking, data structure selection, complexity analysis (Big-O), problem decomposition, scalable solution design, technical reasoning, implementation practice

Database Systems & Data Modeling

A foundational course on how modern organizations store, structure, and query data. You will learn relational database concepts, including tables, keys, constraints, normalization, and entity-relationship (ER) modeling. You will develop strong SQL skills, covering querying, joins, aggregations, subqueries, views, and basic performance considerations. Beyond writing SQL, the course teaches you how to design data models that support real business workflows and scalable applications. You will work with real-world datasets, build database schemas, and learn how databases connect to products, analytics, and AI systems.

Languages used: SQL
Skills taught: Data modeling, relational design, SQL querying, database normalization, schema thinking, systemic thinking, data integrity and constraints, analytics-ready database design

Marketing & Branding for Technology

A hands-on marketing strategy course where students design and build complete brand and growth plans for technology products. You will learn how modern markets work: customer segmentation, targeting, positioning, brand architecture, messaging, digital channels, and performance analytics. The course emphasizes building real go-to-market strategies—not just theoretical frameworks—by following an agile workflow with rapid testing, iteration, and feedback. You will develop core brand skills and growth skills and learn how to structure a cohesive brand system, collaborate in teams, and launch data-backed strategies on a defined timeline.

Frameworks and tools used: STP, brand positioning frameworks, A/B testing tools, analytics dashboards
Skills taught: Brand strategy, growth experimentation, performance marketing, analytics interpretation, agile campaign execution, product-to-market alignment

Applied Machine Learning: Models, LLMs & Applications

A hands-on course that teaches you how to build and evaluate real machine learning and LLM-powered applications, with an emphasis on practical deployment and business impact. You will learn core machine learning workflows—data preparation, feature engineering, model training, evaluation, and iteration—while also learning how modern AI systems are designed and integrated into products. The course introduces supervised and unsupervised learning, model selection, overfitting, and performance measurement. It then expands into applied AI systems: using large language models through APIs, prompt engineering, retrieval-augmented generation (RAG), agentic workflows, and responsible AI practices such as bias awareness, privacy, and safety constraints. You will complete projects that connect ML and LLM capabilities to real use cases, such as document intelligence, customer support automation, recommendation, forecasting, and decision support. The focus is on building systems that work reliably, are measurable, and can be justified to technical and non-technical stakeholders.

Sample of technologies used: Python, scikit-learn, basic deep learning tools, LLM APIs, vector databases, evaluation frameworks, cloud deployment tools
Skills taught: Applied ML, model evaluation, AI product thinking, LLM application design, RAG workflows, AI system integration, responsible AI implementation

Computer Systems & Operating Systems for AI

A foundational course that explains what happens “under the hood” when software runs. You will learn how computers execute programs, manage memory, and coordinate processes. The course introduces core operating system concepts, such as processes and threads, scheduling, memory management, file systems, and basic concurrency. You'll also explore how system-level constraints shape real software decisions—performance, reliability, resource limits, and security. The goal is to build practical systems intuition so you can reason about why applications behave the way they do, how bugs emerge, and how software scales from a laptop to real-world environments.

Languages used: Python
Skills taught: Systems thinking, debugging, performance reasoning, OS fundamentals, concurrency basics

Agile Strategy: Business Models for Technology

A project-based course focused on how modern software teams build and ship products in fast-moving environments. You will learn Agile principles and apply them through real delivery cycles: defining user stories, planning sprints, managing backlogs, writing acceptance criteria, and iterating based on feedback. The course emphasizes execution, collaboration, and building software that meets real user needs—not just writing code. You will practice the full Agile workflow from idea to delivery, including team roles (product owner, developer, QA), sprint ceremonies, estimation, and retrospectives. You'll learn how to break down complex problems into shippable increments, manage tradeoffs under time constraints, and communicate progress clearly to stakeholders. The course also introduces engineering practices that support high-quality delivery, such as version control workflows, testing fundamentals, code reviews, and documentation. By the end of the course, you'll be able to operate effectively on a real software team and deliver working features on a predictable cadence.

Sample of technologies used: Git/GitHub
Skills taught: Agile execution, sprint planning, user story writing, collaboration, delivery discipline, product-focused engineering

Networks, Cloud & Distributed Systems

A practical course focused on how modern software is deployed, connected, and scaled in real environments. You will learn the fundamentals of cloud computing and web infrastructure, including APIs, client-server architecture, networking basics, DNS, HTTP/HTTPS, and how applications communicate across services. You'll gain hands-on experience deploying full-stack applications, configuring environments, managing secrets, and understanding reliability and scalability concepts. The course also introduces key operational practices, such as logging, monitoring, and basic DevOps workflows. The emphasis is on enabling you to take something you built and actually run it in the real world—securely, reliably, and at scale.

Sample of technologies used: REST APIs, cloud platforms (AWS/Azure/GCP), GitHub workflows, container basics, deployment pipelines
Skills taught: API literacy, deployment, infrastructure thinking, networking fundamentals, cloud readiness

Business & Entrepreneurship for Technology

A practical course focused on how technology ventures are created, validated, and scaled. You will learn how to translate technical ideas into viable business opportunities by identifying customer needs, defining value propositions, and evaluating market potential. The course introduces core entrepreneurial concepts, including problem-solution fit, product–market fit, market sizing, competitive positioning, pricing strategy, and unit economics. You'll explore how technology decisions influence business outcomes, including cost structure, scalability, defensibility, and speed to market. Through case studies and applied exercises, you will learn how startups and technology-driven companies design business models, test assumptions, and make strategic decisions under uncertainty. By the end of the course, you will develop a venture concept supported by market analysis, a business model, and a clear argument for how the technology creates and captures value.

Sample of technologies used: Market research tools, financial modeling templates, analytics dashboards, prototyping tools
Skills taught: Venture opportunity evaluation, business model design, product–market fit thinking, market analysis, pricing and unit economics, strategic positioning, entrepreneurial decision-making, venture storytelling

Strategy & Systems

A strategy-focused course that teaches you how technology systems shape organizational performance and competitive advantage. You will learn how to evaluate technology not simply as tools, but as interconnected systems that influence decision-making, operations, scalability, and long-term strategic positioning. The course introduces systems thinking and strategic analysis frameworks to help you understand how software architectures, data infrastructure, platforms, and automation interact with business models and organizational processes. You will analyze real-world technology strategies, exploring questions such as build-vs-buy decisions, platform ecosystems, data advantage, vendor dependency, and the tradeoffs between speed, cost, flexibility, and long-term maintainability. Through case discussions and structured analysis, you'll learn how leaders design technology systems that support innovation while managing operational risk and complexity.

Sample of technologies used: Architecture modeling tools, strategy frameworks, system mapping tools, case-based analysis
Skills taught: Systems thinking, technology strategy, build-vs-buy analysis, platform and ecosystem reasoning, infrastructure tradeoff analysis, strategic decision making, executive-level communication

Skills/Career Courses

Collaboration

Collaboration is an essential competency in contemporary academic, professional, and organizational environments. This highly experiential course focuses on hands-on learning through interactive exercises, simulation work, and dynamic team projects. You will engage in a range of activities that develop practical skills in communication, teamwork, conflict resolution, and leadership. Emphasizing applied learning over theoretical study, the course will challenge you to navigate complex team dynamics, foster inclusive collaboration, and leverage collective intelligence to achieve common goals. By the conclusion of this course, you will have the practical tools and strategies necessary to excel in collaborative settings.

Communication (Oral)

This interactive course equips you with the confidence and skills to communicate effectively in professional and personal settings. Through hands-on activities, discussions, and real-world applications, you'll refine verbal and nonverbal communication, adapt messages for different audiences, and develop active listening and questioning techniques. You will also learn to overcome common barriers like nervousness and misunderstandings while practicing presentations, role-playing, and peer feedback. By the end of the course, you will be prepared to speak with clarity, confidence, and impact in meetings, interviews, and daily conversations.

Communication (Writing)

The skill of written communication is crucial for academic, professional, and personal success. This highly practical course focuses on developing clear, concise, and impactful writing. Through interactive exercises, peer feedback, and iterative revision, you'll refine your ability to craft compelling arguments, structure ideas effectively, and adapt your writing to diverse audiences and contexts. Emphasizing clarity over complexity, this course equips you with tools to enhance your writing process, strengthen your critical thinking, and build confidence in your written expression. By the end of the course, you will be proficient in producing coherent, persuasive, and purposeful writing.

Foundation of Career Success

This course introduces you to the foundational skills necessary for career exploration, professional development, and the job search process. You'll learn how to research industries, develop strong application materials, build a personal brand, and establish professional communication habits. Through hands-on exercises, you will create resumes, LinkedIn profiles, and a Professional Development Plan (PDP) to guide your early career growth.

Learning to Learn

The ability to learn effectively is a foundational skill that influences academic, professional, and personal success. This highly experiential course explores practical techniques for enhancing learning, retention, and critical thinking. Through interactive exercises, self-reflection, and applied practice, you will

develop personalized strategies to improve focus, motivation, and problem-solving. Emphasizing active learning over passive consumption, this course equips you with tools to adapt to new challenges, refine your cognitive skills, and foster a mindset of continuous growth. By the end of the course, you'll be empowered with strategies to become a more effective and autonomous learner.

Critical Thinking
In today's rapidly changing world, the ability to think critically is more essential than ever. With the constant influx of information, it's crucial to discern what's accurate and reliable. This course is designed to equip you with the skills to analyze information objectively, recognize biases, and make well-informed decisions. By understanding logical reasoning, evaluating evidence, and effectively using tools like artificial intelligence, you'll be better prepared to navigate the complexities of modern life. Developing these critical thinking skills not only enhances academic performance but also fosters personal growth and adaptability in an ever-evolving world.

Creative Thinking
Creative thinking is a vital skill for success in a rapidly changing world. This highly interactive course explores techniques for generating ideas, solving problems, and thinking beyond conventional boundaries. Through hands-on exercises and collaborative projects, you will develop your ability to approach problems with flexibility, curiosity, and originality. Emphasizing experimentation and adaptability, this course provides you with practical tools to cultivate creativity, challenge assumptions, and develop innovative solutions. By the end of the course, you will be equipped with strategies to enhance your creative potential and apply it across academic, professional, and personal contexts.

Advanced Career Strategies
This course builds on the fundamentals learned in Foundation of Career Success, focusing on advanced career research, strategic job searching, and professional branding. You will refine your resume and LinkedIn profile, strengthen your networking skills, and develop expertise in interviewing and negotiation. The course also emphasizes long-term career planning through an advanced Professional Development Plan (PDP).

Sample Electives

Analytics Track

Supervised Machine Learning
Pre-req: Deployment Lab

A hands-on course focused on building predictive models for real business and product problems. You will learn how supervised machine learning works end-to-end: defining a prediction task, preparing and cleaning data, engineering features, training models, and evaluating performance using appropriate metrics. The course emphasizes practical modeling decisions and the ability to explain model behavior and results clearly.

You will work with structured datasets to solve problems such as churn prediction, risk scoring, pricing, forecasting, and classification tasks. You'll learn how to compare baseline approaches to more advanced models, identify overfitting, tune hyperparameters, and interpret results responsibly. Throughout the course, you will be trained to think beyond accuracy by considering business impact, fairness, and real-world deployment constraints.

Sample of technologies used: Python, scikit-learn, pandas, Jupyter, SQL
Skills taught: Supervised learning workflows, regression and classification, feature engineering, model evaluation and metrics, cross-validation, bias/variance reasoning, interpretability, business framing of ML outcomes

Unsupervised Machine Learning
Pre-req: Deployment Lab

A practical course focused on discovering patterns, structure, and insights from unlabeled data. You will learn how unsupervised machine learning supports decision-making in real organizations—where the goal is often to understand customers, detect anomalies, reduce complexity, or uncover hidden structure rather than predict a labeled outcome.

You will explore clustering techniques (k-means, hierarchical clustering, DBSCAN), dimensionality reduction (PCA, t-SNE), and anomaly detection approaches. You'll learn how to evaluate unsupervised results using both quantitative and business-reasoning lenses, and how to translate abstract clusters into actionable segments. The course emphasizes interpretation, experimentation, and using unsupervised learning as a decision-support tool.

Sample of technologies used: Python, scikit-learn, pandas, Jupyter
Skills taught: Clustering and segmentation, dimensionality reduction, anomaly detection, evaluation without labels, interpretation and storytelling, applied experimentation, insight generation from messy data

Business Intelligence & Data Visualization
Pre-req: Deployment Lab

A decision-focused course that trains you to turn raw data into clear, stakeholder-ready insights. You will learn how to design dashboards, reports, and data stories that support business decisions. The course emphasizes the difference between “making charts” and building real business intelligence: defining the right metrics, ensuring data accuracy, designing for usability, and communicating insights with clarity.

You will learn how BI systems are structured end-to-end: data sources, transformation logic, KPI definitions, dashboard design, and governance. You'll practice building dashboards that answer real business questions, such as performance tracking, funnel analysis, retention, revenue drivers, and operational efficiency. The course also teaches you how to avoid common visualization pitfalls and misleading presentations.

Sample of technologies used: Tableau and/or Power BI, SQL, Excel, (optional Python for data prep)
Skills taught: Dashboard design, KPI development, SQL-based reporting, data visualization best practices, stakeholder communication, data storytelling, BI workflow thinking, decision-ready reporting

Advanced Machine Learning
Pre-req: Supervised Machine Learning, Unsupervised Machine Learning, Applied Machine Learning: Models, LLMs & Applications

An advanced, application-driven course designed for students who are ready to move beyond baseline models and build more powerful, production-relevant machine learning systems. You will learn advanced modeling techniques and how to select them strategically based on the problem, data constraints, and business goals.

The course covers ensemble methods (random forests, gradient boosting), model calibration, imbalanced classification, advanced feature engineering, and performance optimization. You will also explore modern ML workflows such as experiment tracking, model comparison, error analysis, and robustness testing. A key emphasis is on defensibility: you must be able to justify why a model was chosen, how it was evaluated, and what tradeoffs it introduces in real-world settings.

You will complete a major applied project where you'll build an end-to-end ML solution, evaluate it against baselines, and present results in a stakeholder-ready format, including model interpretation, risk assessment, and deployment considerations.

Sample of technologies used: Python, scikit-learn, XGBoost/LightGBM (optional), ML evaluation tooling, Jupyter, SQL
Skills taught: Advanced supervised learning, ensemble methods, model tuning and optimization, imbalanced learning, error analysis, robustness thinking, ML decision-making, stakeholder-ready ML communication

AI & Digital Product Track

AI Product Design
Pre-req: Deployment Lab

A product-focused course that teaches you how to design AI-enabled products that are usable, measurable, and grounded in real customer and business needs. You will learn how AI changes product design: uncertainty is built in, outputs are probabilistic, failure modes are different, and user trust becomes part of the system. The course emphasizes designing AI features that are not just technically impressive, but actually deliver value and can be responsibly shipped.

You will practice framing AI opportunities, defining user workflows, identifying where AI adds leverage (and where it does not), and designing interaction patterns for AI systems (copilots, assistants, smart defaults, recommendations). You'll learn how to define success metrics for AI features, design for transparency, and build feedback loops that improve product quality over time. The course connects product thinking to technical constraints such as latency, cost, reliability, privacy, and model limitations.

Sample of technologies used: Prototyping tools, LLM APIs (for prototyping), analytics tools, basic evaluation frameworks
Skills taught: AI product thinking, user-centered design for AI, workflow mapping, AI feature scoping, metric definition, trust and UX for probabilistic systems, product tradeoff analysis, stakeholder communication

LLM Applications & Agentic Workflows
Pre-req: Deployment Lab

A hands-on engineering course focused on building real applications using large language models, with an emphasis on system design, reliability, and workflow automation. You will learn how to move beyond “prompting” and build full LLM-powered products: structured inputs/outputs, tool calling, retrieval-augmented generation (RAG), memory, and multi-step agentic workflows.

You will build systems such as document intelligence tools, internal copilots, customer support automation, research assistants, and workflow agents that interact with APIs, databases, and web services. The course emphasizes practical engineering constraints: latency, cost, token limits, hallucinations, security risks, and failure recovery. You will learn how to design LLM systems that behave consistently and can be deployed responsibly in real organizations.

Sample of technologies used: Python, LLM APIs, vector databases, RAG frameworks, tool/function calling, workflow orchestration, cloud deployment tools
Skills taught: LLM application development, prompt and output structuring, RAG system design, agentic workflows, tool integration, reliability engineering for AI systems, deployment readiness, system debugging

AI Evaluation & Responsible Deployment
Pre-req: Deployment Lab

A decision-driven course focused on how to evaluate AI systems and deploy them responsibly in real-world environments. You will learn that building an AI system is only half the job. The harder challenge is proving it works, measuring it reliably, understanding risks, and shipping it with accountability.

You will learn evaluation methods for both classical ML and LLM-based systems, including offline testing, benchmark creation, human evaluation, red teaming, and continuous monitoring after deployment. The course emphasizes responsible deployment: fairness, bias, privacy, security, explainability, compliance awareness, and harm prevention. You will practice designing evaluation plans that align with business outcomes and defining what “good enough” means for real users under real constraints.

By the end of the course, you will produce an evaluation and deployment plan for an AI system, including metrics, testing strategy, risk assessment, monitoring approach, and governance recommendations.

Sample of technologies used: Evaluation frameworks, monitoring/logging tools, model testing pipelines, red teaming practices, documentation templates
Skills taught: AI evaluation design, metric selection, reliability testing, human-in-the-loop evaluation, risk assessment, responsible AI deployment, monitoring and governance, defensible decision-making

Intelligent Automation & Process Redesign
Pre-req: Deployment Lab

A practical course focused on redesigning business workflows using automation, AI, and modern systems thinking. You will learn how to identify high-impact process opportunities, map workflows, measure bottlenecks, and design automation solutions that improve speed, quality, and scalability. The course emphasizes that automation is not just about tools—it is about process redesign, change management, and building systems people will actually adopt.

You will learn how to combine traditional automation (scripts, APIs, rules engines, workflow orchestration) with AI capabilities such as document extraction, classification, and LLM-based reasoning. You'll practice choosing the right level of automation: when simple rule-based automation is best, when AI is justified, and when a human-in-the-loop approach is required.

By the end of the course, you will deliver an automation redesign proposal and a working prototype that demonstrates measurable operational improvement, along with documentation and implementation recommendations.

Sample of technologies used: Automation platforms, APIs, workflow orchestration tools, databases, LLM tools (as needed), cloud deployment tools
Skills taught: Process mapping, workflow redesign, automation strategy, requirements translation, systems thinking, human-in-the-loop design, implementation planning, operational impact measurement

Product & Entrepreneurship Track

Product Management for Technical Teams
Pre-req: Deployment Lab

A practical course designed to train you to operate as a product manager in technical, fast-moving environments. You will learn how to translate customer needs into clear product direction, align engineering work to measurable outcomes, and manage tradeoffs between scope, speed, quality, and long-term maintainability. The course emphasizes product execution: how real teams plan, prioritize, ship, and iterate.

You will practice writing product requirements, defining user stories, building roadmaps, and running sprint-level delivery processes with engineering teams. You'll learn how to make decisions with incomplete information, manage stakeholder expectations, and define success metrics that connect product work to business value. The course also covers how product managers collaborate with design, engineering, data, and leadership—especially when building AI-enabled and data-driven products.

Sample of technologies used: Product documentation tools, agile workflow tools, analytics dashboards, prototyping tools
Skills taught: Product requirements writing, prioritization frameworks, roadmap planning, user story development, stakeholder management, technical tradeoff thinking, product execution, outcome-based delivery

Venture Strategy & Business Models
Pre-req: Deployment Lab

A strategy-focused course that teaches you how to design, test, and defend a venture business model around a digital or AI-enabled product. You will learn how startups and modern product teams define value creation: who the customer is, what problem is being solved, how the product delivers value, and how the business captures that value sustainably.

You will work through frameworks for business model design, unit economics, pricing strategy, competitive positioning, and strategic differentiation. The course emphasizes validation: you must test assumptions, evaluate market logic, and support claims with evidence rather than intuition. You'll also learn how technical choices influence business outcomes—cost structure, scalability, defensibility, and speed to market.

By the end of the course, you will produce a complete venture strategy package, including a business model, pricing logic, go-to-market assumptions, and a defensible argument for why the venture can win.

Sample of technologies used: Market research tools, analytics for validation, pitch and modeling templates, prototyping tools
Skills taught: Business model design, unit economics, pricing strategy, competitive positioning, venture strategy, validation thinking, strategic storytelling, founder-level decision-making

Go-to-Market for Digital Products
Pre-req: Deployment Lab

A hands-on course focused on how digital products succeed in the real world: distribution, adoption, retention, and growth. You will learn how to design and execute a go-to-market (GTM) strategy for software and AI-enabled products, bridging product decisions with marketing, sales, partnerships, and customer success.

You will learn how to define target segments, craft positioning and messaging, select channels, design onboarding and activation flows, and measure growth performance through funnels and retention metrics. The course emphasizes experimentation and iteration: you will run small GTM tests, evaluate results, and refine strategy based on evidence. You'll also explore how GTM differs across B2B and B2C, and how AI products introduce new GTM challenges such as trust, compliance, and explainability.

By the end of the course, you will deliver a GTM plan including segmentation, messaging, channel strategy, success metrics, and a launch roadmap tied to product readiness.

Sample of technologies used: Analytics dashboards, CRM and funnel tools (conceptual), experimentation frameworks, marketing and messaging tools
Skills taught: Go-to-market strategy, segmentation, positioning, funnel design, growth metrics, launch planning, experimentation, stakeholder-ready GTM communication

Technology Strategy & Competitive Advantage
Pre-req: Deployment Lab

A strategy and decision-making course focused on how organizations use technology to build sustainable competitive advantages. You will learn how to evaluate technology not as "tools," but as strategic assets that shape cost structure, differentiation, speed, defensibility, and market power. The course emphasizes the ability to make clear, high-quality strategic recommendations in environments where technology choices have long-term consequences.

You will learn frameworks for analyzing competitive advantage and connect them to real technology decisions: architecture, build-vs-buy, AI adoption, data infrastructure, and automation strategy. You'll also learn how to assess strategic risk, including dependency on vendors, technical debt, security threats, and regulatory constraints.

By the end of the course, you will produce a technology strategy recommendation for a real company or product, including competitive analysis, strategic tradeoffs, investment priorities, and a defensible roadmap for execution.

Sample of technologies used: Strategy frameworks, architecture modeling tools, competitive analysis templates, case-based research
Skills taught: Technology strategy, competitive analysis, defensibility thinking, build-vs-buy decisions, platform and ecosystem reasoning, roadmap planning, executive-level communication, strategic tradeoff analysis

Social Media & Growth Track

Social Media Strategy & Brand Growth
Pre-req: Deployment Lab

A strategy-driven course focused on how brands grow through social platforms in a world shaped by algorithms, creators, and fast-moving culture. You will learn how to design a social media strategy that connects brand identity to measurable growth outcomes: awareness, engagement, community, conversion, and retention. The course emphasizes execution and decision-making—what to post, why it works, how to iterate, and how to prove impact.

You will learn how to define a brand voice, build a content strategy, and align creative output to audience behavior across platforms such as Instagram, TikTok, YouTube, LinkedIn, and emerging channels. You'll analyze real brand case studies, evaluate platform dynamics, and learn how to adapt strategy as algorithms and audience trends shift. By the end of the course, you will deliver a complete social strategy package including content pillars, platform strategy, publishing plan, and success metrics.

Sample of technologies used: Social media analytics tools, content planning systems, platform dashboards, creator research tools
Skills taught: Social strategy, brand storytelling, content planning, platform-specific strategy, community growth, KPI definition, creative iteration, stakeholder-ready strategy communication

Creator Economy & Platform Business Models
Pre-req: Deployment Lab

A strategy and business-model course focused on how creator platforms work and how value is created across ecosystems of creators, audiences, brands, and technology. You will learn how platforms like TikTok, YouTube, Instagram, Twitch, Patreon, Substack, and emerging AI-native platforms generate growth and revenue—and how creators build sustainable businesses within those systems.

You will explore platform business models, network effects, recommendation systems, and monetization design. The course also covers the strategic role of creators in modern marketing and product growth, including influencer economics, brand partnerships, community-driven growth, and creator-led distribution. You will learn how to analyze platforms as businesses and evaluate strategic risks, such as algorithm changes, platform dependency, and monetization volatility.

Sample of technologies used: Platform analysis frameworks, creator monetization case studies, ecosystem mapping tools
Skills taught: Platform business model thinking, creator monetization strategy, ecosystem analysis, network effects reasoning, platform incentives and tradeoffs, competitive analysis, strategic storytelling

Performance Marketing & Growth Experimentation
Pre-req: Deployment Lab

A hands-on course focused on how modern growth teams drive measurable outcomes through experimentation. You will learn how to design, run, and evaluate performance marketing and product growth tests across paid and organic channels. The course emphasizes disciplined experimentation: defining hypotheses, selecting metrics, running controlled tests, analyzing results, and iterating quickly.

You will learn growth fundamentals, including funnel design, customer acquisition cost (CAC), lifetime value (LTV), attribution, conversion rate optimization, and retention loops. You'll explore how growth strategy differs for B2B vs B2C and how social platforms shape acquisition dynamics. The course also introduces growth experimentation in AI-enabled products, where onboarding, trust, and perceived value often behave differently than traditional digital products.

By the end of the course, you will deliver a growth experimentation portfolio: a structured set of experiments, results analysis, and a growth roadmap tied to measurable business outcomes.

Sample of technologies used: Ads platforms (conceptual), analytics dashboards, A/B testing frameworks, funnel tracking tools, spreadsheet modeling
Skills taught: Growth experimentation, hypothesis design, funnel analysis, performance metrics, CAC/LTV reasoning, attribution awareness, conversion optimization, decision-making with uncertainty

Social Analytics & Audience Intelligence
Pre-req: Deployment Lab

A data-driven course focused on understanding audiences through social and digital behavior. You will learn how to use social analytics to answer strategic questions: who the audience is, what content drives engagement, what communities shape perception, and how attention translates into brand and business outcomes. The course emphasizes turning messy, high-volume social data into usable insights for decision-making.

You will learn how to analyze engagement patterns, audience segmentation, sentiment and topic trends, and platform performance. You'll explore methods for extracting insights from comments, captions, hashtags, and community conversations, including basic NLP techniques and AI-assisted analysis. The course also covers social listening, competitor benchmarking, and identifying early signals of cultural shifts.

By the end of the course, you will deliver an audience intelligence report and dashboard that includes insights, trends, recommendations, and measurable next steps for content and brand strategy.

Sample of technologies used: Social listening tools, platform analytics dashboards, BI tools, Python (optional for text analysis), visualization tools
Skills taught: Audience analysis, social listening, content performance evaluation, segmentation, trend detection, sentiment/topic analysis (intro), insight communication, dashboarding for social strategy

Futures Track

Automation & Robotics
Pre-req: Deployment Lab

A systems-focused course that introduces you to how automation and robotics transform operations across industries, such as manufacturing, logistics, healthcare, and digital services. The course emphasizes understanding how physical and software systems work together to automate tasks, reduce human error, and increase efficiency. You will learn the fundamentals of robotic systems, sensors, control logic, and how automated workflows are designed and integrated into larger operational environments.

You will explore how robots interact with data, environments, and human operators. You'll analyze real-world automation use cases, such as warehouse robotics, robotic process automation (RPA), autonomous inspection systems, and smart manufacturing. The course also emphasizes decision-making around when automation makes sense, how to measure operational impact, and how to design systems that maintain safety and reliability.

Sample of technologies used: Python, robotics simulation tools, automation platforms, APIs, basic IoT frameworks
Skills taught: Automation system design, robotic workflow logic, sensor-based decision systems, operational efficiency analysis, human-robot collaboration, process automation strategy, systems thinking

Blockchain Technologies & Smart Contracts
Pre-req: Deployment Lab

A foundational course focused on understanding how blockchain systems enable decentralized trust, secure transactions, and programmable digital agreements. You will learn how distributed ledgers work, why consensus mechanisms exist, and how blockchain architectures differ from traditional centralized systems. The course emphasizes practical applications of blockchain in finance, supply chains, identity management, digital assets, and decentralized applications. You will also learn how smart contracts operate as programmable agreements that automatically execute when predefined conditions are met.

Through hands-on exercises, you will design simple smart contracts and explore how decentralized applications interact with blockchain networks. The course also examines tradeoffs around scalability, governance, energy consumption, regulation, and security vulnerabilities in blockchain ecosystems.

Sample of technologies used: Ethereum ecosystem tools, Solidity (intro), Web3 frameworks, blockchain explorers, wallet systems
Skills taught: Distributed ledger concepts, smart contract logic, decentralized application architecture, blockchain security awareness, token economics fundamentals, trustless system design, blockchain use-case evaluation

Quantum Computing
Pre-req: Deployment Lab

An exploratory course that introduces you to the principles of quantum computing and how it may transform computational capabilities in fields such as optimization, cryptography, materials science, and machine learning. The course focuses on conceptual understanding rather than deep physics, helping you to grasp how quantum systems differ from classical computing through ideas such as superposition, entanglement, and quantum interference. You will learn how quantum algorithms approach certain problems differently from classical algorithms and explore examples such as quantum search and optimization.

The course also examines the practical challenges facing quantum computing today, including hardware constraints, error correction, and scalability. A major focus is on helping you evaluate when quantum computing might create real business or scientific value versus when classical systems remain superior.

Sample of technologies used: Quantum programming frameworks (e.g., Qiskit), quantum simulators, Python
Skills taught: Quantum computing fundamentals, quantum algorithm intuition, problem suitability analysis, quantum vs. classical tradeoff reasoning, emerging technology evaluation, strategic technology foresight

Augmented & Virtual Reality
Pre-req: Deployment Lab

A design and development course focused on immersive technologies that blend digital and physical environments. You will learn how augmented reality (AR) overlays digital information onto the real world, while virtual reality (VR) creates fully immersive environments for training, simulation, entertainment, and collaboration. The course emphasizes both the technical foundations and the user-experience challenges of building immersive systems. You will explore how spatial computing works: 3D environments, motion tracking, spatial mapping, interaction design, and immersive storytelling.

You'll analyze real-world applications of AR/VR across industries such as education, healthcare training, architecture, gaming, retail, and remote collaboration. The course also covers design constraints such as motion sickness, usability, hardware limitations, and ethical considerations in immersive environments.

Sample of technologies used: Unity or Unreal Engine, AR/VR development frameworks, spatial design tools, 3D asset platforms
Skills taught: Immersive experience design, spatial interaction design, AR/VR system architecture, 3D environment thinking, user experience for immersive systems, prototyping interactive environments, evaluating immersive technology applications

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