Applied Supply Chain, Engineering and Technology (ASET)

ASET 3210 Supply Network Systems Thinking (3 credits)
Develops a holistic foundation for analyzing supply networks, emphasizing the interdependence of demand, supply and risk. Students create BOM-based maps; interpret key metrics (e.g., service levels, inventory turns); and examine marketing and financial drivers (promotions, cost-to-serve, working capital) that influence system behavior. Case-based discussions build intuition for complex adaptive systems and trade-offs among cost, service, resilience and sustainability.
Level of Study: Undergraduate
Schedule of Classes (https://bulletin.marquette.edu/class-search/?details&code=ASET%203210)

ASET 3300 Uncertainty Management (2 credits)
Deepens operational knowledge of students by addressing complexity, variability and uncertainty (CVU) in products and processes. Students apply statistical thinking, SPC, and Lean/Six Sigma methods to diagnose variation, design controls and connect improvement options to business outcomes. Topics include SKU proliferation, forecast error, flow design and cost of poor quality, with attention to how market choices propagate operational effects.
Level of Study: Undergraduate
Schedule of Classes (https://bulletin.marquette.edu/class-search/?details&code=ASET%203300)

ASET 3951 Supply Network Discovery Trip - Domestic (0 credits)
Provides a structured local immersion that follows a product from customer demand back through suppliers to reveal end-to-end supply network structure and dynamics. Students prepare through targeted briefings, conduct stakeholder interviews, and practice disciplined observation to extract process, data and policy dependencies. Emphasis is placed on common metric definitions, and recognizing operational, financial and human factors shaping performance.
Level of Study: Undergraduate
Schedule of Classes (https://bulletin.marquette.edu/class-search/?details&code=ASET%203951)

ASET 4210 Technology Integration and Digital Transformation (3 credits)
Explores how sensing, analytics/AI, robotics, and digital twins are specified and integrated to improve visibility and decision quality. Students design data flows that connect commercial signals to operational responses, evaluate adoption using ROI/TCO and readiness criteria, and address governance, privacy and ethical use. Emphasis is on architecting practical solutions that augment human judgment and scale within organizational constraints. By the end, students can translate between technical and managerial stakeholders and make a compelling case for responsible, value-creating technology deployment.
Level of Study: Undergraduate
Schedule of Classes (https://bulletin.marquette.edu/class-search/?details&code=ASET%204210)

ASET 4996 Reflection and Integration Studio (1 credits)
A studio-style capstone that synthesizes learning from previous courses into a coherent professional narrative and portfolio. Guided by an Ignatian reflection framework (Context > Experience > Reflection > Action > Evaluation), students refine signature work from the ASCENT program e.g., network maps, risk analyses, variability controls and technology designs, linking each to stakeholder value and future roles. Emphasizes integrative reasoning, ethical judgment and communication to articulate how technical, financial and human considerations combine to create durable, multi-stakeholder impact.
Level of Study: Undergraduate
Schedule of Classes (https://bulletin.marquette.edu/class-search/?details&code=ASET%204996)

ASET 4998 Chaos Project (2 credits)
A capstone course that synthesizes concepts from the first three courses in a high-stakes, real-world simulation. Working in cross-functional teams, students apply systems thinking, statistical and Lean/Six Sigma methods and digital transformation tools to navigate unpredictable disruptions that test both technical and strategic decision-making. Throughout the project, teams evaluate marketing-driven demands and financial trade-offs alongside operational imperatives, refining their resilience strategies for modern supply chain environments.
Level of Study: Undergraduate
Schedule of Classes (https://bulletin.marquette.edu/class-search/?details&code=ASET%204998)

ASETI 4951 Supply Chain Discovery Trip - International (0 credits)
In partnership with CESA Business School (Bogotá, Colombia), the course offers a global immersion that examines production-to-export milestones across manufacturers, logistics providers and regulatory checkpoints. Students analyze trade and security requirements, cost–service trade-offs and cultural and institutional contexts shaping how networks perform across borders.
Level of Study: Undergraduate
Schedule of Classes (https://bulletin.marquette.edu/class-search/?details&code=ASETI%204951)