

Course Bulletin

139447	Special Topics in Engineering Management			
Subject: EM	Catalog Nbr: 0293			
	2020 Fall	Primary	Marci Sapers	Marci.Sapers@tufts.edu
	2020 Fall	Primary	Kyle Monahan	Kyle.Monahan@tufts.edu
	2020 SPRG	Primary	Samuel Liggero	Samuel.Liggero@tufts.edu
	2020 SPRG	Primary	Frank Apeseche	Frank.Apeseche@tufts.edu
	2020 SPRG	Primary	Bennett Baldwin	Bennett.Baldwin@tufts.edu
	2020 SPRG	Primary	Hannah Lippe	Hannah.Lippe@tufts.edu
	2021 SPRG	Primary	Partha Ghosh	Partha.Ghosh@tufts.edu
	2021 SPRG	Primary	Gerald Brown	Gerald.Brown@tufts.edu
	2021 SPRG	Primary	Jerome Brightman	Jerome.Brightman@tufts.edu
	2021 SPRG	Primary	Warren Hilton	Warren.Hilton@tufts.edu
Special topics in engineering management.				

144897	Essentials of Technology Strategy			
Subject: EM	Catalog Nbr: 0201			
	2021 SPRG	Primary	Samuel Liggero	Samuel.Liggero@tufts.edu
Elements of technology strategy including portfolio management, development of product/technology roadmaps, product lifecycles, new product development stage gate processes, and intellectual property. Focus on disruptive, incremental, sustaining and breakthrough innovations.				

144898	Leadership: Personal Development			
Subject: EM	Catalog Nbr: 0202			
	2021 SPRG	Primary	Jerome Brightman	Jerome.Brightman@tufts.edu
Individual leadership development to lead effective teams and organizations. Focus on techniques for developing ethical and empathetic leaders.				

144899	Building Financial Intelligence			
Subject: EM	Catalog Nbr: 0203			
	2021 SPRG	Primary	Frank Apeseche	Frank.Apeseche@tufts.edu
Development, analysis, and communication of financial aspects of a company's product or service and the impact on the health and competitiveness of the firm.				

144900	Customer Discovery and Solution Design			
Subject: EM	Catalog Nbr: 0204			

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2021 SPRG	Primary	Bennett Baldwin	Bennett.Baldwin@tufts.edu
2021 SPRG	Primary	Hannah Lippe	Hannah.Lippe@tufts.edu
Identification of target customers and discovery of solutions to unmet needs. The use of tools to systematically generate and sort diverse options to create products and solve customers' needs.			

144901	Milestone Project: New Product & Service Development		
Subject:	Catalog Nbr:		
EM	0205		
2021 SPRG	Primary	Samuel Liggero	Samuel.Liggero@tufts.edu
Team project to develop business plan for a new product or service and apply learning from the first core components of the MSEM Online Program. Prerequisites EM-201, EM-202, EM-203, EM-204			

144902	Introduction to Data Analytics		
Subject:	Catalog Nbr:		
EM	0206		
2020 SUMR	Primary	Nicholas Litombe	Nicholas.Litombe@tufts.edu
2021 SPRG	Primary	Kyle Monahan	Kyle.Monahan@tufts.edu
Data identification, analysis and interpretation to drive strategic and operational success in technology-based companies. Data-based decisions with uncertain or ambiguous conditions, and development of models for decision-making in a business setting.			

144903	Solving Complex Problems through Systems Thinking		
Subject:	Catalog Nbr:		
EM	0207		
2021 SPRG	Primary	James Nash	James.Nash@tufts.edu
Interconnected complex systems considering human, political, community, resource, environmental, and social processes. Application of insights from structural influences to maximize impact and solve problems.			

144904	Program and Project Management		
Subject:	Catalog Nbr:		
EM	0208		
2021 SPRG	Primary	Kishore Pochampally	Kishore.Pochampally@tufts.edu
Methodologies, tools, and strategies for managing projects and portfolios of projects (programs).			

144905	Leadership: Driving and Managing Change		
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Subject: EM	Catalog Nbr: 0209	2020 Fall	Primary	Jerome Brightman	Jerome.Brightman@tufts.edu
<p>Management of uncertainty and complexity in the presence of constant change. Application of conflict management and negotiation to manage large and diverse groups through change resulting from internal and external forces.</p> <p>Pre-requisites EM 201, EM 202, EM 203, EM 204</p>					

145046	Introduction to Security				
Subject: CSO	Catalog Nbr: 0116	2021 SUMR	Primary	Ming Chow	ming.chow@tufts.edu
<p>A holistic and broad perspective on cyber security. Attacking and defending networks, cryptography, vulnerabilities, reverse engineering, web security, static and dynamic analysis, malware, forensics. Principles illustrated through hands-on labs and projects, including Capture The Flag (CTF) games.</p>					

145047	Algorithms				
Subject: CSO	Catalog Nbr: 0160	2020 Fall	Primary	Diane Souvaine	Diane.Souvaine@tufts.edu
		2020 Fall	Primary	Matias Korman	Matias.Korman@tufts.edu
<p>Introduction to the study of algorithms. Strategies such as divide-and-conquer, greedy methods, and dynamic programming. Graph algorithms, sorting, searching, integer arithmetic, hashing, and NP-complete problems.</p>					

145137	Programming Languages				
Subject: CSO	Catalog Nbr: 0105	2021 SPRG	Primary	Norman Ramsey	Norman.Ramsey@tufts.edu
<p>Principles and application of computer programming languages. Emphasizes ideas and techniques most relevant to practitioners, but includes foundations crucial for intellectual rigor: abstract syntax, lambda calculus, type systems, dynamic semantics. Case studies, reinforced by programming exercises. Grounding sufficient to read professional literature.</p>					

145138	Introduction To Machine Learning And Data Mining				
Subject: CSO	Catalog Nbr: 0135	2021 SPRG	Primary	Martin Allen	Martin.Allen@tufts.edu
<p>An overview of methods whereby computers can learn from data or experience and make decisions accordingly. Topics include supervised learning, unsupervised learning, reinforcement learning, and knowledge extraction from large databases with applications to science, engineering, and medicine.</p>					

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145159	Database Systems
Subject: CSO	Catalog Nbr: 0115
Fundamental concepts of database systems, including conceptual design, relational and object-oriented data models, query languages (SQL, QBE), and implementation issues (indexing, transaction processing, concurrent control). The concepts and algorithms covered encompass many of those used in commercial and experimental database systems. Other topics include distributed databases and distributed query processing.	

145160	Computation Theory
Subject: CSO	Catalog Nbr: 0170
2021 SUMR	Primary
Martin Allen	Martin.Allen@tufts.edu
Models of computation: Turing machines, pushdown automata, and finite automata. Grammars and formal languages, including context-free languages and regular sets. Important problems, including the halting problem and language equivalence theorems.	