

## APPROVED GRADUATE SCHOOL COURSES

The table below contains courses offered by Duke’s Graduate School that are approved to count as a MEM technical elective. For courses offered by Duke’s Fuqua School of Business and approved as MEM technical electives, go to pages 6-8 on this document. Please refer to the document called [“Unapproved Technical Electives from the Graduate School and Fuqua”](#) if you do not find the course you are looking for in this document.

Notes:

1. Most courses at Duke University are classified as Undergraduate or Graduated according to their course number.

Undergraduate-level courses: 0-499

Graduate-level courses: 500+

Undergraduate courses are not approved as technical electives for the MEM Program. Graduate courses, however, may be approved if they are substantially equivalent to Engineering Management courses, in terms of content, goals, rigor, and applicability to the MEM degree. Additionally, to be approved, they must include a technical component.

2. All graduate-level Pratt School of Engineering courses are approved to count as a MEM technical elective.
3. Graduate-level non-Pratt courses that are part of an approved multidisciplinary concentration are approved to count as a MEM technical elective. (See Course Registration Guide)
4. Not all graduate courses have the same credit equivalency (3-credits) as Engineering Management courses. While you may take an approved graduate course that carries 1.5 or 2 credits, it will not satisfy a full technical elective requirement. You may take multiple 1.5 or 2 credit courses to satisfy a full technical elective requirement, as shown in the example below:

EGRMGMT 590.xx (3 credits)  
 EGRMGMT 590.xx (3 credits)  
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 ENVIRON 520.xx (1.5 credits)  
ENVIRON 521.xx (1.5 credits)  
 TOTAL: 12 credits

EGRMGMT 590.xx (3 credits)  
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 ENVIRON 593.xx (2 credits)  
ENVIRON 635.xx (1.5 credits)  
 TOTAL: 12.5 credits\*

\*A minimum of 12 approved technical elective credits must be completed to fully satisfy the MEM technical elective requirements.

5. Sometimes courses are taught under a pilot number or an advanced topics designation; thus, it is worthwhile to check both the number and the title of the course.

## GRADUATE COURSES APPROVED AS TECHNICAL ELECTIVES

ACCTG 597	Financial Statement Analysis
BA 901	Game Theory
BA 910	Bayesian Inference & Decision Theory (cross-listed with STA 502 (221))
BA 925	Behavior Decision Theory
BA 991	Analytical Approaches to Marketing
CELLBIO 503	Introduction to Physiology
CHEM 501	Analytical Chemistry
CHEM 511	Biological Chemistry
COMPSCI 510	Operating Systems
COMPSCI 512	Distributed Information Systems
COMPSCI 514	Computer Networks and Distributed Systems
COMPSCI 516	Data-Intensive Computing Systems
COMPSCI 527	Computer Vision
COMPSCI 530	Design and Analysis of Algorithms
COMPSCI 531	Introduction to Algorithms
COMPSCI 571	Machine Learning
COMPSCI 590.XX	Nanocomputing
COMPSCI 590.XX	Bionanotechnology
COMPSCI 590.XX	Computational Microeconomics
COMPSCI 590.XX	Computer Information for Learning Market Design
COMPSCI 662	Computational Systems Biology
COMPSCI 671D	Theory & Algorithms for Machine Learning
ECON 552	Economic Growth
ECON 571	Financial Markets and Investments
ECON 572	Intermediate Finance
ECON 601	Microeconomics
ECON 602	Macroeconomic Theory
ECON 620	Game Theory with Applications of Economics and other Social Sciences
ECON 608	Introduction to Econometrics
ECON 673	Mathematical Finance
ECON 674	Financial Derivatives
ECON 703	Econometrics I
EGR 590	Special Topics in Engineering: eLuminate Design and Innovation Studio
ENERGY 590	Special Topics in Energy: Intro to Solar Project Development
ENERGY 590	Special Topics in Energy: Economics of Modern Power Systems
ENERGY 620	Energy Finance (pre-req EGRMGMT 530 or financial background)
ENERGY 630	Transportation and Energy
ENERGY 631	Energy Technology and Environmental Impact (cross-listed with ENVIRON 631)
ENERGY 635	Energy Economics and Policy (cross-listed with ENVIRON 635; <b>Note: only 1.5 credits; only counts for half of a technical elective</b> )
ENERGY 638	Environmental Life Cycle Analysis & Decision (cross-listed with ENVIRON 638)
ENERGY 715	Understanding Energy Models and Modeling (cross-listed with ENERGY 715)

ENERGY 716	Modeling for Energy Systems
ENERGY 727	Energy Law
ENERGY 790	Renewables and the World's Poor
ENERGY 791	Connections in Energy: Project (Bass Connection Project; <b>Note: only 1.5 credits; only counts for half of a technical elective</b> )
ENERGY 811	Sustainable Systems Theory and Drivers (cross-listed with ENVIRON 811)
ENVIRON 520	Resource and Environmental Economics ( <b>Note: only 1.5 credits; only counts for half of a technical elective</b> )
ENVIRON 521	Resource & Environmental Economics II ( <b>Note: only 1.5 credits; only counts for half of a technical elective</b> )
ENVIRON 531	Economic Analysis of Resource Environmental Policies
ENVIRON 535	Air Quality Management
ENVIRON 559	Fundamentals of Geographic Information Systems and Geospatial Analysis
ENVIRON 577	Environmental Politics
	The following ENVIRON 590 Special Topics have been approved
ENVIRON590	Energy Technology
ENVIRON590	Energy Economics and Policy
ENVIRON590	World Trade in Energy
ENVIRON590	Business Strategy for Environmental Sustainability
ENVIRON590	Sustainable Cities
ENVIRON590	Transportation: Environment & Energy
ENVIRON590	Energy Modeling
ENVIRON590	Environmental Life Cycle Analysis and Decision Making
ENVIRON590	Environmental Decision Analysis
ENVIRON 590	Intro to Solar Project Development
ENVIRON 593	Independent Studies and Projects ( <b>Note: only 2 credits; only counts as 2 credits of a technical elective</b> )
ENVIRON 635	Energy Economics and Policy (cross-listed with ENERGY 635 ( <b>Note: only 1.5 credits; only counts for half of a technical elective</b> ))
ENVIRON 638	Environmental Life Cycle Analysis & Decision (cross-listed with ENERGY 638)
ENVIRON 710	Applied Data Analysis for Environmental Sciences
ENVIRON 711	Energy & Environment (cross-listed with ENERGY 711)
ENVIRON 715	Understanding Energy Models and Modeling (cross-listed with ENERGY 715)
ENVIRON 716	Modeling for Energy Systems
ENVIRON 717	Markets for Electric Power
ENVIRON 752	Sustainability and Renewable Resource Economics
ENVIRON 761	Geospatial Analysis for Conservation Management
ENVIRON 767	Entrepreneurial Experience
ENVIRON 790-60	Special Topics: Topic: Built Environment
ENVIRON 811	Sustainable Systems Theory and Drivers (cross-listed with ENERGY 811)

ENVIRON 830	Building Energy on Campus: Evaluating Efficiency and Conservation Measures at Duke
ENVIRON 831	Sustainable Business Strategy
ENVIRON 832	Environmental Decision Analysis
ENVIRON 835	Environmental Law (cross-listed with LAW 235)
ENVIRON 859	Advanced Geospatial Analysis
ENVIRON 872L	Environmental Data Analytics
ENVIRON XXX	Environmental Life Cycle Analysis and Decision Making
FINANCE 653	Fixed Income Securities
GLHLTH 501	Global Health Capstone
GLHLTH 690	Global Health Studies Suppl, Fin, & Org in Health
GLHLTH 701	Global Health Challenges
GLHLTH 750	Health Systems in Developing Countries
GLHLTH 755	Global Health Policy: Transforming Evidence into Action
HLTHMGMT 712	Medical Device Strategy
IDS 701	Data to Decision (Note: same as Fundamentals of Data Science; cannot take both)
IDS 702	Modeling and Representation of Data
IDS 703	Data Scraping and Introduction to Text Analysis
IDS 704	Data Science Ethics (Note: only 1.5 credits; only counts for half of a technical elective)
IDS 705	Principles of Machine Learning
IDS 706	Data Management Systems
IDS 707	Data, Logic, Visualization, and Storytelling (Note: only 1.5 credits; only counts for half of a technical elective)
IDS 720	Practical Data Science
IE 510	Social Innovation Practicum
IE 511	Designing Ethical Tech
IE 550	Innovation and Cryptoventures
IE 590	Hacking4Defense
IE 590	Special Topics: New Ventures Clinic - Healthcare
IE 710	Research and Technology Translation
IE 720	Biodesign
IE 720	Design in Healthcare 1
IE 721	Design in Healthcare 2
IE 748	New Ventures Discovery
IE 750	New Ventures Development
IE 752	New Ventures Delivery
IE 790	Special Topic: Foodpreneures
IE 800	Business and Organization Fundamentals for Entrepreneurial Action
IE 835	Innovations in Drug Development
ISS 591	Independent Study: How Do Cyberattacks Hurt Me? (Bass Connections Course)
LAW 235	Environmental Law (cross-listed with ENVIRON 835)
LAW 270	Intellectual Property
LAW 321	Innovation in the Life Sciences Industry
LAW 346	Intellectual Capital and Competitive Strategy
LAW 347	Health Care Law and Policy
LAW 353	Equity Evaluation and Financial Statement Analysis

LAW 364	Global Health
LAW 375	International Intellectual Property
MATH 531	Basic Analysis I
MATH 532	Basic Analysis II
MATH 551-01	Applied Partial Differential Equations and Complex Variables
MATH 575	Mathematical Fluid Dynamics
MATH 581	Mathematical Finance
MATH 582	Financial Derivatives
MATH 757	Linear Programming
NANOSCI 511	Foundations Nanoscale Sci/Tech (C/L ECE 511)
NANOSCI 616	Bionanotechnology
NURSING 657	Healthcare Innovation and Entrepreneurship
OPERATNS 823	Operations Strategy (Students must submit resume and 200 words on their reasons for taking the course to the instructor) No auditors permitted.
PHARM 533	Essentials of Pharmacology and Toxicology
PHARM 554	Mammalian Toxicology
PUBPOL 320	Globalization and Governance
PUBPOL 559	Technology & Innovation Policy Practicum (cross-listed with SOCIOL & ISIS)
PUBPOL 590	Special Topics: Intro to Population, Health and Policy
PUBPOL 590	Special Topics: Technology & Innovation Policy Practicum
PUBPOL 590S	Globalization and Health Equity Seminar
PUBPOL 590S	Human Centered Design
PUBPOL 598	Economic Growth and Development Policy (C/L PUBPOL 286)
PUBPOL 743	Design and Analysis of Public Private Partnerships
PUBPOL 770	Public Finance in Developing and Emerging Economies
PUBPOL 776	Public Budgeting and Financial Administration
PUBPOL 790	Science, Tech, and Development Policy
PUBPOL 890	Education and Human Capital Policy
STA 231	Behavior Decision Theory
STA 502	Bayesian Inference & Decision Theory (cross-listed with BA 510)
STA 521L	Modern Regression and Predictive Modeling (prereq/coreq of STA 601 – Bayesian and Modern Statistical Data Analysis)
STA 561D	Probabilistic Machine Learning
STA 601	Bayesian and Modern Statistical Data Analysis
STA 611	Introduction to Statistical Meth
STA 621	Applied Stochastic Processes
STA 623	Statistical Decision Theory
STA 663L	Statistical Computing and Computation
STA 711	Probability and Measure Theory
STA 732	Statistical Inference
STA 831	Probability and Statistical Models
STA 863	Advanced Modeling and Scientific Computing
STRATEGY 627	Business Strategy for Sustainability
STRATEGY 838	Entrepreneurial Strategy
STRATEGY 842	Strategic Modeling and Business Dynamics

## FUQUA SCHOOL OF BUSINESS COURSES ACCEPTED BY MEM PROGRAM

The MEM Academic Coordinator will send out a list of approved courses from Fuqua in mid-July for fall semesters and mid-October for spring semesters.

### ACCEPTED AS TECHNICAL ELECTIVES

<b>COURSE NUMBER</b>	<b>TITLE</b>
ACCOUNTG 597	Financial Statement Analysis
ACCOUNTING 598 (442)	Valuation and Fundamental Analysis
ACCOUNTG 898.XX (491.XX)	Information Systems to Support Strategy
DECISION 611 (312)	Decision Models
DECISION 613 (410)	Strategic Modeling and Business Dynamics
DECISION 614 (411)	Forecasting
DECISION 617 (483)	Information Management
DECISION 898 (491)	Decision Tools for Environmental Stability
ENRGYENV 625	Energy, Markets, and Innovation
ENRGYENV 626 (380)	Environmental Sustainability
ENRGYENV 627	Business Strategies for Sustainability
FINANCE 646 (351)	Corporate Finance
FINANCE 647 (352)	Investments
FINANCE 648 (353)	Derivatives (Fuqua faculty permission required)
FINANCE 651 (356)	Entrepreneurial Finance
FINANCE 653 (450)	Fixed Income Securities
FINANCE 654	Advanced Corporate Finance
FINANCE 656 (453)	Global Asset Allocation and Speculative Strategies
FINANCE 657 (454)	Financial Engineering
FINANCE 658 (455)	Corporate Restructuring
FINANCE 661 (458)	Raising Capital: Financial Instruments, Institutions & Strategy
FINANCE 662 (459)	Real Estate Entrepreneurship
FINANCE 898.XX (491.XX)	Real Estate Development
FINANCE 898.XX (491.XX)	Quantitative Finance
FINANCE 898.XX (491.XX)	Project Finance
FUQINTRD 697	Innovation and Cryptoventures
HLTHMGMT 710 (325)	Health Care in the 21 <sup>st</sup> Century
HLTHMGMT 711 (326)	Economics of Strategy of Health Sector Management
HLTHMGMT 712	Medical Device Strategy
HLTHMGMT 713 (366)	Biotechnology: Drug Discovery
HLTHMGMT 715 (368)	Healthcare Marketing
HLTHMGMT 716 (408)	Management of Health Systems and Policy
HLTHMGMT 717 (409)	Economics and Management of the Pharmaceutical Industry

HLTHMGMT 898.XX (491.XX)	Healthcare Operations – Prerequisite – Operations Management
MANAGEMENT 738	Managing Innovation in a Global Organization
MANAGEMENT 750 (426)	Social Entrepreneurship
MANAGEMENT 754 (431)	Mentored Study in Entrepreneurship
MANAGEMENT 898.XX (491.XX)	Entrepreneurial Execution/Planning
MANAGEMENT 898.XX (491.XX)	New Product Development
MANAGEMENT 898.XX (491.XX)	Technology Strategy
MANAGEMENT 896 (490)	Duke New Ventures Clinic
MARKETING 796 (361)	Marketing Intelligence
MARKETING 797 (362)	Consumer Behavior
MARKETING 799 (460)	Product Management
MARKETING 800 (461)	Marketing Communications Management
MARKETING 802 (463)	Marketing of Innovations
MARKETNG 803 (464)	Customer Relationship Management
MARKETNG 808 (469)	Strategy and Tactics of Pricing
MARKETNG 896 (490)	Marketing Practicum
MARKETNG 898.XX (491.XX)	New Venture Planning (or New Venture Clinic)
MGMTCOM 896 (490)	Small Business Consulting
MGRECON 781	Global Economic Environment of the Firm
MGRECON 784	Game Theory for Strategic Advantage
MGRECON 788 (431)	Competitive Analysis
MGRECON 898.XX (491.XX)	Data Mining



OPERATNS 820 (370)	Operations Management (students should take EGRMGMT 562 unless there is a scheduling conflict)
OPERATNS 822 (470)	Information Systems for Production Management
OPERATNS 823	Operations Strategy (Students must submit resume and 200 words on their reasons for requesting enrollment to the instructor)
OPERATNS 824 (472)	Service Operation Management – <b>Prerequisite – EGRMGMT 562 (262) Operations Management</b>
OPERATNS 827 (475)	International Operations Management – Prerequisite/Co-requisite – Operations Management
OPERATNS 828 (476)	Supply Chain Management (students should take EGRMGMT 563 unless there is a scheduling conflict)
OPERATNS 894	Sustainable Operations
OPERATNS 898.XX	Quality and Six Sigma
STRATEGY 627	Business Strategy for Sustainability
STRATEGY 838	Entrepreneurial Strategy
STRATEGY 842	Strategic Modeling and Business Dynamics
STRATEGY 843 (339)	Intellectual Capital
STRATEGY 845	Entrepreneurial Execution and Planning
STRATEGY 896 (490)	Strategic Planning Practicum
STRATEGY 848 (491)	New Ventures Creation 1: Opportunity Evaluation
STRATEGY 849	New Ventures Development
STRATEGY 850	New Ventures Creation 2: Strategy Development 2
STRATEGY 851 (491)	New Ventures Creation 3: Operating Plan Development 1
STRATEGY 852 (491)	New Ventures Creation 3: Operating Plan Development 2