



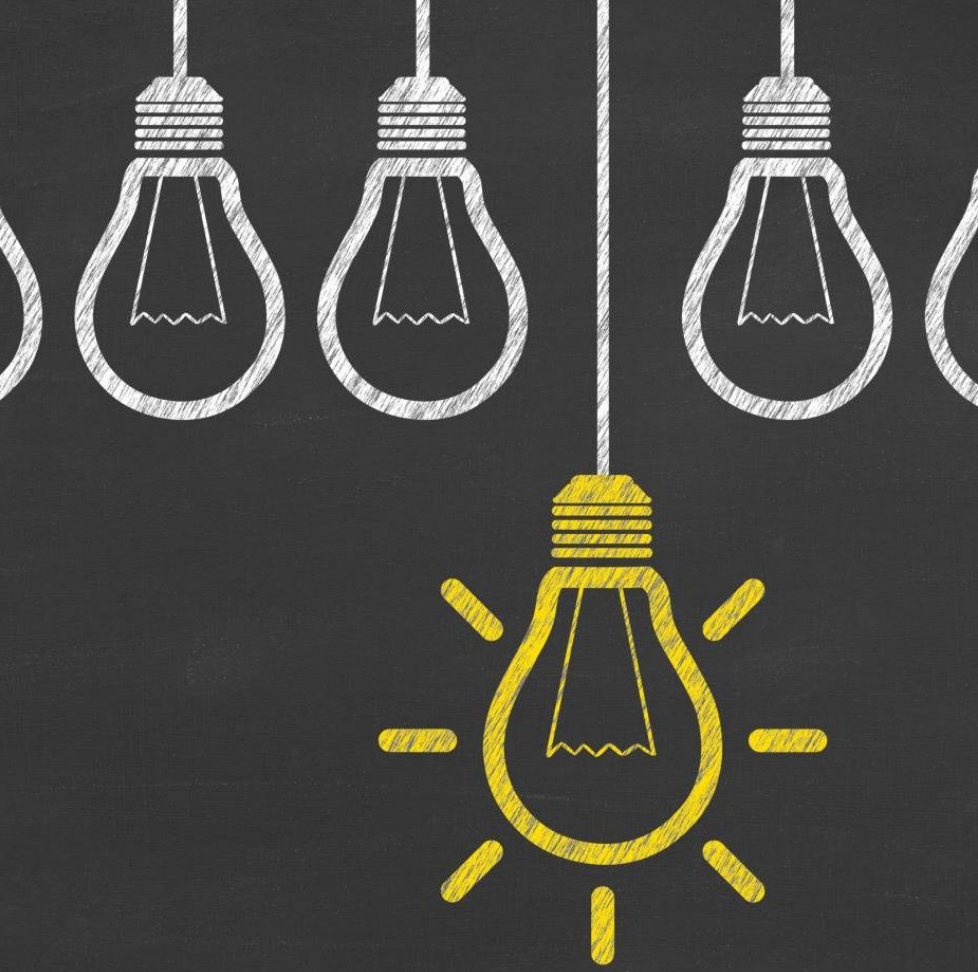
WPI

THE BUSINESS
SCHOOL

**Bridging business and technology to develop
globally responsible leaders who shape the world.**



STEM MBA



Why?

- Increase **relevance** in an increasingly analytical and tech-driven world
 - Growing demand for professionals with advanced skills at the intersection of
 - Business and Management
 - Analytics
 - Strategy
- Attract more **international students**
 - USCIS STEM designation
 - Opportunity for an on-campus MBA
 - Opening a path to business analytics + managerial careers for international students
- **Terminal Business Degree**
 - 45 - 60 credits
 - Need for a shorter MBA



On the Drawing Board

- Target audience
 - Industry Experience
 - International Vs. Domestic - Visa requirements
- STEM designation requirements
 - STEM in terms of course offerings
 - STEM designated for longer OPT
- Balancing similarities and differences between the two MBAs:
 - 36 credits
 - Core-Specialty Model
 - Capstone
 - Specialty offerings
- Not cannibalizing other related programs (Mapping exercise)
- Resources (Using existing courses and faculty)
- Facilitate marketing and advising (Keep it simple and consistent!)

Proposed Curriculum (36 credits)

Core Courses (12 credits)

- FIN 500 Financial Management
- MKT 500 Marketing Strategy
- OIE 501 Operations Management
- MIS 502 Data Management for Analytics

Capstone (6 credits)

- OBC 505 Teaming and Organizing for Innovation
- BUS 594 Data-driven Business Strategy (Industry Capstone)

Specialties (18 Credits - Select 2 specialties of 3 courses each)

Data-driven Strategic Management:

- BUS 546 Managing Technological Innovation
- ETR 593 Technology Commercialization
- MKT 569 Product Management
- MIS 576 Project Management

Applied Business Analytics:

- MIS 584 Business Intelligence
- MIS 587 Business Applications in Machine Learning
- OIE 552 Modeling and Optimizing Processes
- MKT 568 Marketing Analytics
- FIN 540 Financial Analytics

Marketing Analytics:

MKT 568 Marketing Analytics

Select two of the following:

- MKT 562 Marketing Research
- MKT 561 Consumer Behavior and Analytics
- MKT 565 Digital and Social Media Marketing

Operations Analytics:

- OIE 501 Operations Management
- OIE 542 Risk Management and Decision Analysis
- OIE 544 Supply Chain Analysis and Design
- OIE 548 Performance Analytics
- OIE 558 Designing and Managing Lean Six Sigma Processes
- OIE 549 Sustainable SC and OM

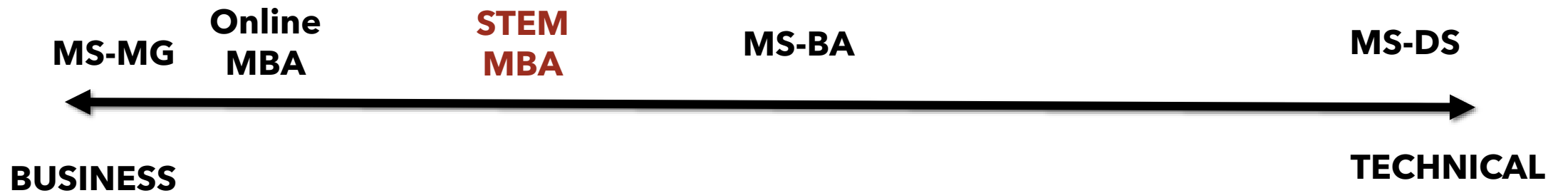
New Course

BUS 594 Data-driven Business Strategy (3 credits)

- This is the Capstone project course for the STEM MBA program.
- The course content will introduce students to business strategy and integrate it with data-driven decision making.
- The course will involve a major team-based analytics project with an organizational sponsor.
- The project will involve both technical analytical skills and strategic thinking for formulating and implementing effective business strategies.

Note: No new faculty needed to teach the course.

Tech Biz Continuum



Other related WPI Programs

	MSMG	Online MBA	STEM MBA	MSBA	MSDS
Focus / Positioning	GEN MGT	MGT + STRAT	MGT + STRAT + ANALYTICS	ANALYTICS (Business Applns)	DATA SCIENCE (Multiple Applns, mainly Technical, Scientific)
Student Profile / Admissions Requirements	<ul style="list-style-type: none"> WPI BS students BS/MS No Work Exp 	<ul style="list-style-type: none"> Domestic students 2+ Years Work Exp 	<ul style="list-style-type: none"> International students (mainly) + Domestic No Work Exp 	<ul style="list-style-type: none"> International + Domestic students + BS/MS No Work Exp 	<ul style="list-style-type: none"> BS - strong quantitative + computational BG International+ Domestic students + BS/MS No Work Exp
Credits	30	36	36	33	30
Core Courses	8 Core	5 Core	4 Core	3 Core	5 Core
Specialty	No - 2 electives	Yes (5 courses)	Yes (6 courses)	Yes (6 courses)	No - 4 electives
Capstone	No	Yes (2 courses)	Yes (2 courses)	Yes (2 courses)	GQP or Thesis
STEM-certified	No	No	Yes	Yes	Yes
Delivery	On-Campus	Online	On-Campus	Online + On-Campus	Online + On-Campus

Other items in the motion

- **Admissions Requirements**

- Same as MS programs at WBS
- Different from Online MBA (work experience)

- **Faculty Contacts:**

- Purvi Shah, Bengisu Tulu, Jim Ryan, and Renata Konrad

- **Implementation Date**

- 2024-2025

- **Resources Needed**

- No new faculty needed.

Projections

	Enrollment Projections				
	2024-25	2025-26	2026-27	2027-28	2028-29
Applicants	40	45	50	55	60
New Enrolees	20	25	30	38	50
Head Count	20	45	55	68	88
Graduates	-	20	25	30	35

	Revenue Projections				
	2024-25	2025-26	2026-27	2027-28	2028-29
New Enrolees	20	25	30	38	50
Head Count	20	45	55	68	88
Number of Credits/ year	18	18	18	18	18
Per Credit Tuition	\$ 1,250	\$ 1,250	\$ 1,250	\$ 1,250	\$ 1,250
Gross Revenue	\$ 450,000	\$ 1,012,500	\$ 1,237,500	\$ 1,530,000	\$ 1,980,000
Less: Projected Expenses					
1. Recruitment & Marketing	\$ 15,000	\$ 15,000	\$ 15,000	\$ 15,000	\$ 15,000
2. Scholarships	\$ 40,000	\$ 50,000	\$ 60,000	\$ 76,000	\$ 100,000
3. GA Positions	\$ 50,400	\$ 63,000	\$ 75,600	\$ 95,760	\$ 126,000
4. Program Support		\$ 25,000	\$ 35,000	\$ 45,000	\$ 55,000
5. Adjunct Fac. 2	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000
Net Revenue	\$ 344,600	\$ 859,500	\$ 1,051,900	\$ 1,298,240	\$ 1,684,000

Discussion

Questions, Comments, Ideas, Suggestions...



Other related WBS Programs

	STEM MBA (36 credits - 12 courses)	MSBA (33 credits - 11 courses)	Online MBA (36 credits - 12 courses)	MSMG (30 credits - 10 courses)
CORE	FIN 500 Financial Management	MIS 502 Data Management for Analytics	FIN 500 Financial Management	FIN 500 Financial Management
	MKT 500 Marketing Strategy	MIS 584 Business Intelligence*	MKT 500 Marketing Strategy	MKT 500 Marketing Strategy
	OIE 501 Operations Management	OIE 552 Modeling and Optimizing Processes	OIE 501 Operations Management	OIE 501 Operations Management
	MIS 502 Data Management for Analytics		MIS 584 Business Intelligence	MIS 584 Business Intelligence
			OBC 506 Leadership	OBC 506 Leadership
				BUS 500 Business Law
				OBC 505 Teaming and Organizing for Innovation
				ETR 593 Tech Commercialization
CAPSTONE	OBC 505 Teaming and Organizing for Innovation	OBC 505 Teaming and Organizing for Innovation	BUS 590 Strategic Management	NO CAPSTONE
	BUS 594 Data-driven Business Strategy	BUS 596 MS Capstone	BUS 599 MBA Capstone	
SPECIALTIES	ANY 2 SPECIALTIES	ANY 2 SPECIALTIES	ANY 1 SPECIALTY + 2 ELECTIVES	2 FREE ELECTIVES
	Marketing Analytics	Marketing Analytics	Business Analytics Core	
	Operations Analytics	Operations Analytics	Advanced Operations Analytics	
	Data-driven Strategic Management	Advanced Business Analytics Methods	Advanced Business Analytics Methods	
	Applied Business Analytics		Applied Business Analytics	
			Operations Excellence	
			Supply Chain Management	
			IT Core	
			Digital Transformation	
			IS Design	
			IT UX	
			Entrepreneurship	
			Organizing and Managing Innovation	
			Product Management	
			Marketing Management	

Marketing Analytics: (Not Offered to Online MBA. Offered to MSBA)

MKT 568 Marketing Analytics

Select two of the following:

MKT 562 Marketing Research

MKT 561 Consumer Behavior and Analytics

MKT 565 Digital and Social Media Marketing

Operations Analytics: (Not Offered to Online MBA. Offered to MSBA)

OIE 501 Operations Management

OIE 542 Risk Management and Decision Analysis

OIE 544 Supply Chain Analysis and Design

OIE 548 Performance Analytics

OIE 558 Designing and Managing Lean Six Sigma Processes

OIE 549 OIE 549 Sustainable SC and OM

Data-driven Strategic Management: (Not Offered to Online MBA and MSBA)

BUS 546 Managing Technological Innovation

ETR 593 Technology Commercialization

MKT 569 Product Management

MIS 576 Project Management

Applied Business Analytics: (Not offered to MSBA. Offered to both MBAs)

MIS 584 Business Intelligence

Select two of the following:

MIS 587 Business Applications in Machine Learning

OIE 552 Modeling and Optimizing Processes

MKT 568 Marketing Analytics

FIN 540 Financial Analytics

SPECIALTY MAKEUP

Existing STEM MBA Programs in the U.S.

University	City, State	Concentration
Carnegie Mellon University	Pittsburgh, Pennsylvania	
Case Western Reserve University	Cleveland, Ohio	Finance, FinTech, Operations, Business Analytics
Columbia University	NYC, New York	
Cornell University	Ithaca, New York	
Georgia Institute of Technology	Atlanta, Georgia	
University of California, Berkeley	Berkeley, California	
Wharton School	Philadelphia, Pennsylvania	Business Analytics; Business Economics & Public Policy; Business, Energy, Environment & Sustainability; Operations, Information & Decisions; Quantitative Finance; and Statistic
Kellogg School	Evanston, Illinois	Management Science
Booth School	Chicago, Illinois	Business Analytics
Duke	Durham, NC	11 Concentrations
Dartmouth Tuck	Hanover, NH	Management Science and Quantitative Methods
NYU Stern	NYC, New York	
Michigan Ross	Ann Arbor, Michigan	Management Science
UT McCombs	Austin, Texas	14 of 22 concentrations (one of which is Business Analytics)
Drexel University	Philadelphia, Pennsylvania	Accounting Analytics (Coming Fall 2023), BA, Economics, Finance, Marketing Technology and Analytics (Coming Fall 2023), Supply Chain Management and Logistics
Lehigh University	Bethlehem, Pennsylvania	Business Analytics
Rochester Institute of Technology	Monroe County, New York	
Stevens institute of Technology	Hoboken, New Jersey	Information Systems, Business Intelligence and Analytics, Finance, Financial Engineering, Financial Analytics, Project Management, Sustainability Management

Existing STEM MBA Programs in MA

University	City, State	Concentration
Massachusetts Institute of Technology	Cambridge, Massachusetts	
Babson College	Wellesley, Massachusetts	Quantitative Finance, Business Analytics & Machine Learning
Bentley University	Waltham, Massachusetts	Business Analytics
Boston College	Newton, Massachusetts	MBA (STEM Track), MBA (Business Analytics concentration)
Boston University	Boston, Massachusetts	MSBA (Marketing Analytics, Healthcare Analytics, Applied Data Science)
Clark University	Worcester, Massachusetts	MSBA
Northeastern University	Boston, Massachusetts	MSBA
Suffolk University	Boston, Massachusetts	MSBA and MBA- Business Intelligence concentration
Harvard Business School	Cambridge, Massachusetts	Management Science

CIP Code Mapping

- Machine Learning (MIS 587)
- Optimization Methods (OIE 552)
- Computer Algorithms (MIS 502; OIE 548)
- Probability And Stochastic Models (OIE 542)
- Information Economics (FIN 500, 54X)
- Logistics (OIE 501, 544, 558)
- Strategy (MKT 500, 569; MIS 584; 576; ETR 593; BUS 546, 594 Capstone)
- Consumer Behavior (MKT 561)
- Marketing (MKT 500; 561; 562; 565; 566; 569)
- Visual Analytics (MIS 584; 583; MKT 562)