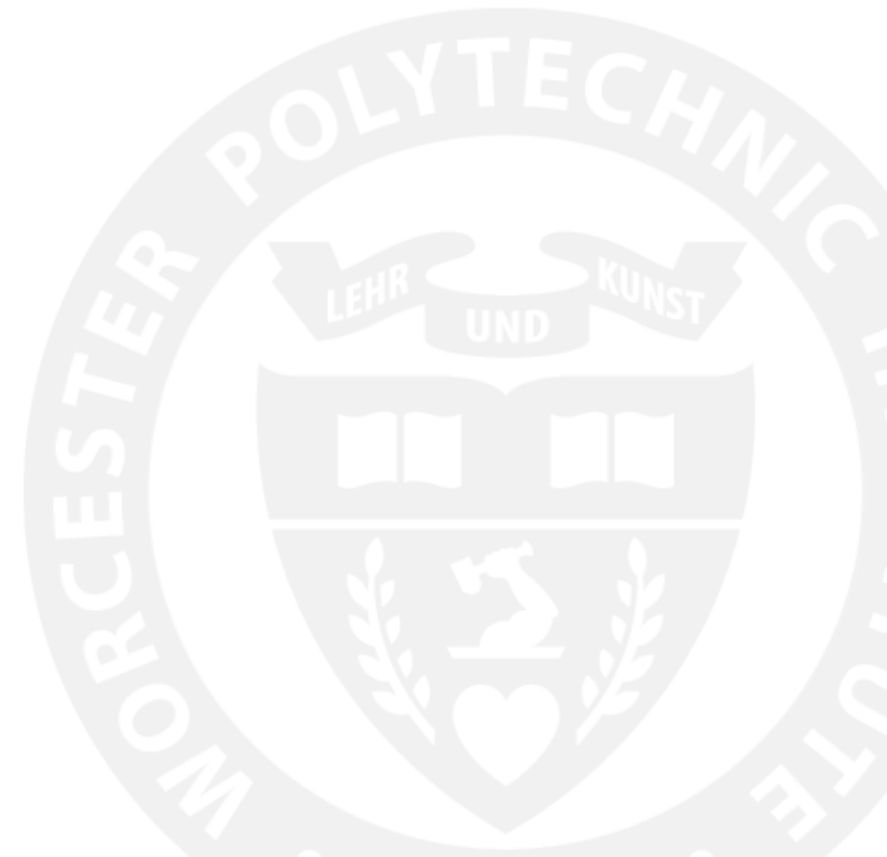


WPI

Proposed B.S. FinTech

Business Department

WPI School of Business



BS FinTech Program – Key Learning Objectives

- Because FinTech is at the intersection of Business, Finance, and Information Technology, students will develop essential knowledge and skills in all three areas. Students will develop:
 - Basic business acumen.
 - Relevant programming skills.
 - Knowledge of the fundamental principles of finance including accounting principles, time value of money, and capital markets.
 - An understanding of the key technologies of the FinTech industry, including artificial intelligence (AI), machine learning (ML), blockchain & smart contracts, and cryptocurrency.
 - An understanding of the information and communication tools, technologies, and standards integral to consumer, merchant, and enterprise services in the payments and financial service sectors.
 - An ability to design solutions using these technologies for the emerging FinTech industry, for communities historically excluded from the banking and/or securities sectors, and for non-financial industries.
 - Knowledge about the operational and strategic goals of financial institutions and intermediaries, how technology is reshaping not only the traditional areas of finance (e.g., legacy banking, securities business models, alternative lending ("alt- finance"), and wealth management), but also in related fields such as insurance ("insur-tech") and real estate, and why these changes are important.
 - Knowledge about the emerging areas for entrepreneurial opportunities in the FinTech sector.
 - An understanding of the limitations and challenges of FinTech, including equity, inclusion, ethical uses of technology, and the basic legal and regulatory frameworks of the U.S. banking and securities sectors.

NEW FINANCIAL TECHNOLOGY (FINTECH) OVERVIEW OF DEGREE REQUIREMENTS

UNIVERSITY REQUIREMENTS (12/3 Units)
<p>HUMANITIES AND ARTS (6/3 Units): 6 courses including Inquiry Seminar/Practicum</p> <p>SOCIAL SCIENCE (2/3 Units): Satisfied by ECON 1110, ECON 1120</p> <p>PHYSICAL EDUCATION (1/3 Units)</p> <p>INTERACTIVE QUALIFYING PROJECT (3/3 Unit)-3rd Year</p>
MATHEMATICS AND SCIENCE REQUIREMENTS (8/3 Units)
<p>BASIC SCIENCE (2/3 Units) Any Course with prefix: BB, CH, GE, PH</p> <p>MATHEMATICS (5/3 Units) Calculus - MA 1021; MA 1022; Statistics - MA 2611; MA 2612; Matrices and Linear Algebra - MA 2071 or MA 2072 or MA 2073</p> <p>COMPUTER SCIENCE (1/3 Units): CS 1004 (recommended) or CS 1101 or CS 1102</p>
MAJOR QUALIFYING PROJECT (3/3 Unit) MQP must have a business focus related to FINTECH
FREE ELECTIVES (3/3 Unit)

NEW FINANCIAL TECHNOLOGY (FINTECH) OVERVIEW OF DEGREE REQUIREMENTS

BUSINESS FOUNDATION CURRICULUM (4/3 Units)	
2 courses from financial competency and 2 from organizational, legal, and ethical competency	
<ol style="list-style-type: none"> 1. BUS 2020 The Legal Environment of Business Decisions 2. ACC 2060 Financial Statements for Decision Making 3. FIN 2070 Risk Analysis for Decision Making 4. OBC 3354 Organizational Behavior and Change, or OBC 1010 Leadership Practice, or OBC 4367 Leadership, Ethics, and Social Responsibility. 	
FINTECH FOUNDATION (3/3 Units)	
<ol style="list-style-type: none"> 1. FIN 3300 Finance, Risk Analytics and Technology 2. FIN 3310 Financial Markets and Digital Currencies 3. FIN 3330 Financial Analytics 	
TECHNICAL AND ANALYTICS COURSES (6/3 Units)	
<p>Technical Courses (3/3 units)</p> <ol style="list-style-type: none"> 1. MIS 2300 Business Applications of Blockchain 2. MIS 3787 Business Applications of Machine Learning, or CS 4342 Machine Learning 3. FIN 3730 Artificial Intelligence with Business Applications 	<p>Analytics Courses (3/3 units)</p> <ol style="list-style-type: none"> 1. BUS 2080 Data Analysis for Decision Making, or OIE 2081 Introduction to Prescriptive Analytics 2. OIE 3510 Stochastic Models, or OIE 3460 Simulation modeling and Analysis, or OIE 4430 Advanced Prescriptive Analysis: From Data to Impact 3. MIS 4084 Business Intelligence
FINTECH CONCENTRATION (6/3 Units)	
Choose any 2 from: ETR 1100; OBC 1010 or OBC 4367; BUS 3010 + Select 4 courses from a concentration below	
<ul style="list-style-type: none"> • Financial Technologies • Financial Analytics • Financial Mathematics <p>Note: If no concentration is chosen, the student will choose the remaining 4 courses from at least two of the available concentrations. This will be indicated as General on the transcript.</p>	

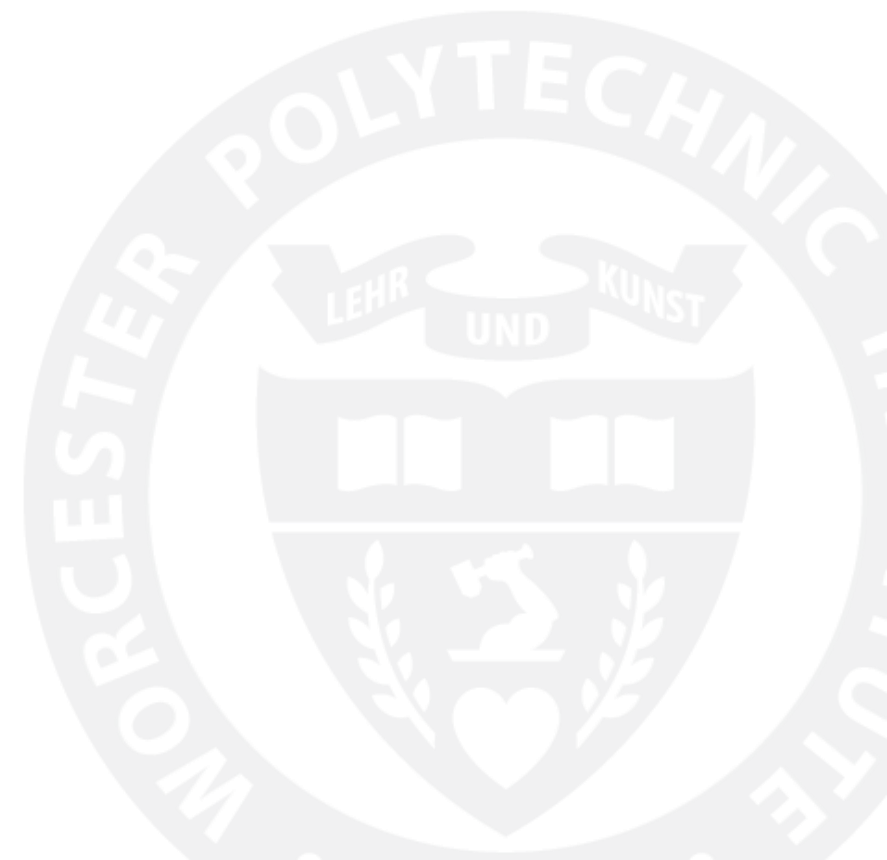
NEW FINANCIAL TECHNOLOGY (FINTECH) OVERVIEW OF DEGREE REQUIREMENTS

FINTECH CONCENTRATION COURSES (6/3 Units)

Note: If no concentration chosen, Students will choose any 2 of the following: ETR 1100; OBC 1010 or OBC 4367; BUS 3010; then the student will choose the remaining 4 courses from at least two of the available concentrations. This will be indicated as General on the transcript.

Financial Technologies	Financial Analytics	Financial Mathematics
<ol style="list-style-type: none"> 1. Choose any 2 of the following: ETR 1100; OBC 1010 or OBC 4367; BUS 3010 2. Chose any 4 of the following: CS 2022/MA 2201 Discrete Mathematics CS 2119 or CS 2102 Object-Oriented Design Concepts CS 2223 Algorithms CS 3516 Computer Networks CS 4120 Analysis of Algorithms CS 4341 Intro to Artificial Intelligence CS 4404 Tools and techniques in Computer Network Security CS 4516 Advanced Computer Networks CS 4518 Mobile Computing CS 4801 Introduction to Cryptography and Communication Security 	<ol style="list-style-type: none"> 1. Choose any 2 of the following: ETR 1100; OBC 1010 or OBC 4367; BUS 3010 2. Chose any 4 of the following: DS 1010 Introduction to Data Science DS 2010 Modeling and Data Analysis OIE 2600 Scripting for Process and Productivity Improvement DS 3010 Computational Data Intelligence CS 3431 Database Systems I MIS 3720 Business Data Management OIE 4430 Advanced Prescriptive Analysis: From Data to Impact CS 4432 Database Systems II DS 4433 Big Data Management and Analytics CS 4445 Data Mining and Knowledge Discovery in Databases OIE 3510 Stochastic Models OIE 3460 Simulation modeling and Analysis 	<ol style="list-style-type: none"> 1. Choose any 2 of the following: ETR 1100; OBC 1010 or OBC 4367; BUS 3010 2. Chose any 4 of the following: MA 2210 Mathematical Methods in Decision Making MA 2211 Theory of Interest I MA 2212 Theory of Interest II MA 2621 Probability for Applications MA 3231 Linear Programming MA 3233 Discrete Optimization MA 4235 Mathematical Optimization MA 4237 Probabilistic Methods in Operations Research MA 4635 Data Analytics and Statistical Learning MA 464X Introduction to time series analysis

Backup Slides



Program Description

- Designed for UG students interested in pursuing a career in the FinTech industry:
 - alternative lending, cryptocurrency management, and trading, blockchain technologies, open banking, Insur-tech, Robo-advisement, machine learning, data mining applications and cybersecurity.
- interdisciplinary field: finance, business analytics, quantitative modeling, financial analysis, MIS, business intelligence, mathematics, statistics, and computer science.
- Covered by the accreditation of WBS by the Association to Advance Collegiate Schools of Business (AACSB-International).
- Seek to gain Certified Financial Analyst (CFA) recognition for the program. Our proposed courses are benchmarked to the CFA's "Candidate Body of Knowledge," which guides what is covered in each course
- Interested students with an interest may later sit for the CFA certification exam

WBS UG Majors

	2018	2019	2020	2021	2022
MGT/BUS	5	4	3	2	
MGE	20	23	26	21	
MIS	8	4	10	5	
IE	27	36	30	27	
FinTech	NA	NA	NA	NA	20
All	60	66	69	55	

Note: Schools currently offering FinTech BS programs: Creighton University, Jacksonville University, New Jersey Institute of Technology, Seton Hall University, Virginia Commonwealth. These schools do not provide the STEM credibility that WPI has (except for NJIT).