DEPARTMENT OF HIGHER EDUCATION & WORKFORCE DEVELOPMENT

New Program Report

Date Submitted:
06/23/2022

Institution
University of Missouri-St. Louis

Site Information

Implementation Date:
8/1/2022 12:00:00 AM

Added Site(s):

Selected Site(s):

University of Missouri-St. Louis, 1 University Blvd, St. Louis, MO, 63121-4400

CIP Information

CIP Code:
270305

CIP Description:
A program that focuses on the application of mathematics and statistics to the finance industry, including the development, critique, and use of various financial models. Includes instruction in probability theory, statistical analysis, numerical methods, computation and simulation methods, stochastic processes, economics, and financial markets and applications.

CIP Program Title:
Financial Mathematics

Institution Program Title:
Financial Technology

Degree Level/Type

Degree Level:
Master Degree

Degree Type:
Master of Science

Options Added:

Collaborative Program:
N

Mode of Delivery

Current Mode of Delivery

Online

Student Preparation

Special Admissions Procedure or Student Qualifications required:
Admission to the program requires an undergraduate business degree or another discipline that satisfies the pre-requisites for the introductory Financial Management course (FIN 6500). Program applicants who do not meet the requirements need to take additional courses.

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Specific Population Characteristics to be served:
N/A

Faculty Characteristics

Special Requirements for Assignment of Teaching for this Degree/Certificate:
The MS in Fintech program does not require additional faculty as the underlying courses are currently offered and can accommodate the additional students that this program brings in. The UMSL finance faculty members hold PhDs from major U.S. universities and have extensive research and industrial experience to share in the classroom. As active researchers, they are on the cutting edge of new developments in the field, which are carefully integrated into coursework.

The Department of Finance and Legal Studies chair oversees the program development. The Graduate Business Programs director handles student admission and administration processes.

Estimate Percentage of Credit Hours that will be assigned to full time faculty:
The percentage of time for full time faculty will be similar to the time in their other courses, mainly because the courses are currently offered.
We expect courses in this program to be taught by full-time faculty. If the program expands beyond our current expectations, and we need extra faculty in order to provide more sections of the courses, we may hire professionals in fintech to teach in the program.

Expectations for professional activities, special student contact, teaching/learning innovation:
N/A

Student Enrollment Projections Year One-Five

Year 1	Full Time: 9	Part Time: 1	
Year 2	Full Time: 11	Part Time: 1	
Year 3	Full Time: 12	Part Time: 2	Number of Graduates: 1
Year 4	Full Time: 13	Part Time: 3	
Year 5	Full Time: 14	Part Time: 3	Number of Graduates: 2

Percentage Statement:
n/a

Program Accreditation

Institutional Plans for Accreditation:
The proposed program requires no accreditation from a professional association beyond the Association to Advance Collegiate Schools of Business (AACSB) for all college degree programs. The UMSL College of Business Administration is accredited by the AACSB.

Program Structure

Total Credits:
30

Residency Requirements:
N/A

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General Education Total Credits:
0

Major Requirements Total Credits:
30

Course(s) Added

COURSE NUMBER	CREDITS	COURSE TITLE
6542	3	Real Estate
6545	3	Venture Capital and Private Equity
6520	3	Security Analysis
6503	3	Financial Modeling and Computer Applications
6576	3	Blockchain
6572	3	Financial Data Analytics
6590	3	Seminar in Finance
6580	3	International Financial Management
6574	3	Artificial Intelligence and Machine Learning in Finance
6521	3	Financial Forensics: The Science of Derivatives
6500	3	Financial Management
6540	3	Financial Institutions and Markets
6570	3	Introduction to Fintech

Free Elective Credits:
6

Internship or other Capstone Experience:
N/A

Assurances

I certify that the program is clearly within the institution's CBHE-approved mission. The proposed new program must be consistent with the institutional mission, as well as the principal planning priorities of the public institution, as set forth in the public institution's approved plan or plan update.

I certify that the program will be offered within the proposing institution's main campus or CBHE-approved off-site location.

I certify that the program will not unnecessarily duplicate an existing program of another Missouri institution in accordance with 6 CSR 10-4.010, subsection (9)(C) Submission of Academic Information, Data and New Programs.

I certify that the program will build upon existing programs and faculty expertise.

I certify that the program can be launched with minimal expense and falls within the institution's current operating budget.

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I certify that the institution has conducted research on the feasibility of the proposal and it is likely the program will be successful. Institutions' decision to implement a program shall be based upon demand and/or need for the program in terms of meeting present and future needs of the locale, state, and nation based upon societal needs, and/or student needs.

Contact Information

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New Degree Program Proposal
FULL PROPOSAL

Basic Program Information

Sponsoring University: University of Missouri - St. Louis

College or School: College of Business Administration

Department: Department of Finance and Legal Studies

Proposed Program Title: MS in Financial Technology (Fintech)

Degree Level/Type: MS

Emphasis Areas: N/A

Program Modality: Online

If online component: Asynchronous

Program CIP Code[1]: Financial Mathematics (27.0305)

Implementation: Fall 2022

Expected Date of First Graduation: December 2023

Proposal Author(s): Nasser Arshadi, Professor & Chair, Department of Finance and Legal Studies
Gaiyan Zhang, Professor of Finance

Name, phone, and email of the person primarily responsible for the proposal: Nasser Arshadi, 314-516-6272, arshadi@umsl.edu

Individual(s) Responsible for Success of the Program:

Nasser Arshadi, Chair, Department of Finance and Legal Studies;
Joan Phillips, Dean, College of Business Administration

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[1] A selection of CIP codes can be viewed on the National Center for Education Statistics website:
https://nces.ed.gov/ipeds/cipcode/browse.aspx?y=55

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Executive Summary

In today's data-driven market, the field of finance is experiencing transformative changes due to advances in financial technology (fintech) – a broad term for technology that aims to automate, improve, and structurally shift financial services. Fintech competes with traditional financial methods to produce and deliver financial services faster, cheaper, and with greater security. It is growing very quickly and redefining the world's finance for both companies and consumers. It is also providing new high-paying career options for those with advanced knowledge of fintech.

To capitalize on the significant opportunities being presented, we propose a new **Master of Science in Fintech** degree at the University of Missouri-St. Louis (UMSL). This program is designed to build a highly trained fintech workforce with knowledge of not only traditional finance modules and data-driven financial modeling/analytics but also fintech tools (everything from blockchain, artificial intelligence (AI), and machine learning (ML), to mobile payment systems, robo-advising, and more). This program stands out from existing master's in finance degree programs in the region and state by educating students in fintech tools that will provide graduates with fast-track entry to this exciting industry. Other programs do not focus on fintech. And because this program is built around current faculty and courses, it can be financially viable early with few students as the program grows. Strategic hiring has brought substantial fintech expertise to UMSL, and courses have been developed over the last few years to meet emerging financial market demand for fintech skills.

While a graduate certificate program in fintech was previously created, the program was intended for an overview of fintech with only two required fintech courses and three electives. The certificate program serves the existing MBA students - not any new students. In contrast, the MS in Fintech program is a complete course of study in fintech with eight required courses (seven in fintech) and only two electives.

For this degree, location also matters. Schools close to financial and technology hubs provide easier access to corporations for recruitment, which is an important factor for student success. The St. Louis region is both an emerging national tech hub[2] and a financial hub for the Midwest. According to the Economist, St. Louis is the largest center of financial services firms outside of Manhattan[3]. The region has a significant business presence in finance and insurance and is home to several financial regulatory agencies. Many large employers in the region, from Boeing and Anheuser-Busch InBev to Enterprise Holdings, actively seek UMSL business students. The key motivation for building this program is to prepare students for the new opportunities in the fintech field. Thus, it is critical for students to access an affordable but reputable fintech program that develops the job skills that are in such high demand.

This degree program will have both a direct and indirect economic impact on the St. Louis community. Financial data analytics jobs are highly paid and in high demand. Increasing the supply of financial data analytics talent will help retain financial services companies in the region and attract potential employers to relocate to the area.

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[2] Tech Republic, 01/29/2020
[3] The Economist, 04/12/2017

1. Introduction

In recent years, financial institutions have invested heavily to modernize their infrastructure, empowering their operations with big data analytics, artificial intelligence (AI)/machine learning (ML), and other high-tech tools known as "fintech." The quantity, and the use, of such technologies, is growing fast as an increasing number of startup companies enter the field. For example, according to a PricewaterhouseCoopers report, 2018 venture capital investments in artificial intelligence startup companies in the United States reached $9.3 billion (a 72% increase over the previous year).[4]

This new Master of Science in Fintech at the University of Missouri–St. Louis (UMSL) is designed to provide both finance professionals and others interested in seeking fintech knowledge with an understanding of both traditional financial models and specialized fintech tools.

While tech startups gave rise to the fintech disruptions, more traditional financial firms (e.g., banks, brokerage houses, hedge funds, trading exchanges) are rethinking the ways they conduct business. Fintech tools are being used throughout the financial services industry and affect decisions in investments, portfolio management, trust services, and securities trading. Highly trained fintech professionals are in high demand.

Furthermore, fintech talent is also needed in other information-rich environments such as insurance, medical, regulatory, and big-tech firms, along with the fintech startup community.

With its rapid and unwavering growth,[5] fintech offers many career-path opportunities for students, and this degree would provide UMSL MS in Finance graduates with fast-track entry to this exciting industry.

Fintech is a disruptive technology. The world of finance is changing rapidly, requiring advanced knowledge of new and emerging technologies such as AI/ML, blockchain, robo-advisors, and others. The legacy finance programs have not been modified for decades, and the financial services market is ripe for a new approach as they rethink how they do business. Universities must adapt educational programs to better prepare business students for careers in fintech firms or in existing financial services companies that are being redefined by new technology.

Accordingly, UMSL has designed this master's program to address a huge new market need and to provide students with the necessary training to take advantage of the resulting opportunities.

To determine the mix of required and elective classes that would most effectively prepare students for careers in fintech, thereby helping to address the significant market demand for a highly trained workforce, department faculty analyzed external input and curriculum options for more than two years.

The proposed master's degree program is built around big-data-driven finance that incorporates modern finance (fintech courses such as blockchain, data analytics, machine learning, and artificial intelligence), into the curriculum. Electives allow students to explore their own interests,

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[4] https://www.bloomberg.com/news/articles/2019-01-08/vcs-plowed-a-record-9-3-billion-into-ai-startups-last-year
[5] The global Fintech market was valued at $7.3 trillion (USD) in 2020 and is expected to grow at a CAGR of 26.87% through 2026. Research and Markets Report (10/13/2021)

such as security analysis, financial institutions, venture capital, real estate, and others. The 30-credit-hour master's degree provides a comprehensive skill set demanded by industry with a necessary balance of foundational finance/traditional financial mechanisms and modern finance (fintech) courses.

Career Paths:

Graduates of the MS in Fintech program will have many career-path options:

- One example is working for financial services firms. Banks are addressing the fintech disruption head-on – billions of dollars are being poured into innovation, development, and even acquisitions of tech firms. Banks require their employees to have in-depth knowledge of modern finance and usually offer good compensation.

- Another example is working for a Big Tech firm or any large company with a global consumer base and active development in the financial arena.

- A graduate might instead work for a fintech startup that focuses on aspects of financial services functions, including robo-advising in wealth management, payment systems, among others. There has been a tremendous increase in fintech startups in recent years.

- Also, fintech knowledge can help a graduate advance into higher levels at a company in a host of other industries. Employees with education and experience in high-demand skills like AI development are especially valuable.

The fintech industry offers a breadth of roles for graduates including, trust officer, financial planner, strategist, consultant, entrepreneur, and programmer. Fintech careers include financial analyst, cybersecurity expert/analyst, blockchain expert/developer, risk and compliance reviewer, quantitative analyst, app developer, and artificial intelligence expert, among others.

Program Success:

The individuals responsible for the success of this program are the college dean and department chair.

Nasser Arshadi
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2. Fit with University Mission and Other Academic Programs
2. A. Alignment with University Mission & Goals

The MS in Fintech program's mission is to train students to become experts in a newly developed field in finance. This will enable the department, college, and campus to address a significant workforce need in the financial services industry, leading to economic development in the region and the state. The proposed program is consistent with the campus goals of educating students

to become successful citizens in the community and assisting in the region's economic development, as described in the UMSL Strategic Plan.[6] It also speaks directly to Pillar 4 of the University's Strategic Enrollment Plan regarding developing and launching market-responsive programming in workforce development.[7] This master's degree program will help train students for work in a rapidly growing industry with high market demand and a large workforce deficit.

The proposed program is also consistent with the stated mission of the UMSL College of Business Administration (CoBA). Specifically, the program aims to prepare students for professional success in technically sophisticated local and global organizations, expand online offerings, and meet the workforce needs of the St. Louis business community.[8]

UMSL currently offers a graduate certificate in fintech. However, it provides only a basic introduction and requires only two fintech courses. It is designed for current MBA students interested in an introduction to the concept. The certificate does not meet the needs of the industry for a more in-depth, comprehensive fintech knowledge that is provided in the proposed MS in Fintech degree program.

This master's program aligns with the goals and priorities of the department, college, and University, and the College of Business Administration supports it. During the degree's early design and development, the college's former dean provided strong support; and the current CoBA dean enthusiastically supports the program (see appendices 6. A.1. and 6. A.2.)

And, according to UMSL's provost, "we will better serve our students with a master's degree in this area." He noted that the new program "will result in a broader spectrum of job opportunities for our students" and according to the chancellor, "[f]intech is an important element of the STL Job 2030 initiative" (see Appendix 6. J.).

UMSL's chancellor, in support of this proposed "transformative degree for workforce development in the St. Louis area," said that "this program represents an area of growth and excellence for UMSL" and that graduates will be "well-poised to take on high-demand jobs in the region" with their education in both traditional finance and fintech tools (see Appendix 6. J.2.).

The full degree program proposal, including the curriculum and the narrative, was prepared by department faculty; it was then reviewed and voted on affirmatively by the college's Graduate Studies Committee and the college's entire faculty. Subsequently, campus Graduate Council and the Faculty Senate approved the proposal.

Furthermore, the proposed program received strong support from both the college's Department of Information Systems and Technology (IST) and its Finance Advisory Board (see appendices 6. B. and 6. C.). For example, the chair of IST department noted that fintech is "a critical new area of study with a high projected demand for graduates as artificial intelligence, crypto assets, and other information technologies are becoming widely adopted throughout the financial services industry."

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[6] http://www.umsl.edu/services/academic/strategic-plan/
[7] https://www.umsl.edu/stratplan/sep-home.html
[8] https://www.umsl.edu/divisions/business/About%20the%20College/vision.html

He also stated that with the proposed master's degree program, UMSL will be positioned to become a premier center of fintech learning and research in the country.

Feedback from the UMSL Finance Advisory Board was very positive including comments such as "[h]eavier emphasis on analysis would benefit most companies," and "[t]here is a strong overlap between the fundamental research my investment team does and also needing an understanding from an IT perspective that would allow us to utilize best the Research systems we have to build macros or reports that would provide the data on the companies we own, the companies we are watching, as well as the market in general."

The proposed master's degree program addresses identified needs of employers.

2. B. Duplication & Collaboration within Campus and Across System

With more than two years invested in developing this degree program, we were able to identify the foundational classes and the new technology-based fintech courses to create a robust curriculum.

To expand the impact of UMSL's proposed MS in Fintech, we are engaged in ongoing conversations about making the underlying courses available to students enrolled on our sister campuses. The University of Missouri-Kansas City (UMKC) is considering offering our fintech courses to its students. Missouri University of Science and Technology (S&T) has utilized our courses in spring 2022 and plans to do so again in fall 2022. MU supports this program and is in conversation with us to use our fintech courses in combination with their courses to create a stackable certificate program. (See the support letter from UMKC in Appendix 6. D.1., and emails from Missouri S&T leadership in Appendix 6. D.2., and from the dean at MU in Appendix 6. D.3).

Across the University of Missouri System, the University of Missouri-Columbia (MU) and UMKC offer excellent, but very traditional, Master of Science in Finance degrees as detailed below. They do not cover fintech beyond the minimal overlap of the one fundamentals-of-fintech course at UMKC.

MU's Master of Science, Finance degree is a 30-credit-hour program available 100% online. Courses include Financial Statement Analysis, Financial Database Analysis & Financial Modeling, Equity & Fixed-Income Securities Analysis, Derivative Securities, Investment Policy and Portfolio Management, and International Financial Markets.[9] However, the MU program currently does not include fintech courses covering cryptocurrencies, blockchain, AI/ML, fintech credit, robo-advisors, algorithmic trading, and big data analytics using Python and R, all of which are covered in this new degree program.

UMKC's MS in Finance is a 30-hour, STEM-designated program that includes core classes (15 hours), quantitative classes that provide subject matter depth (9 hours), and electives (6 hours). Like the MU program, the coursework covers traditional finance topics, including Global Financial Markets and Institutions, Investment Analysis, Valuation and Mergers and Acquisitions, Financial

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[9] https://online.missouri.edu/degreeprograms/business/finance/masters/ The detailed course list can be found at https://online.missouri.edu/degreeprograms/business/finance/masters/admissions.aspx#courses

Modeling, and Financial Statement Analysis. The only course in their program related to fintech is FIN 5576: Fundamentals of Fintech.[10]

Considering universities in the St. Louis region, prospective students face the same problem — while there are master's degree programs in finance (discussed below), none focus on the emerging field of fintech.

The **Webster University** MS in Finance degree not only doesn't involve fintech[11], it also is not AACSB[12]-accredited.

Saint Louis University offers a Master of Science in applied financial economics focused on analyzing and forecasting economic variables such as interest rates and stock returns with financial market implications. However, it does not involve fintech.[13]

Washington University in St. Louis offers an MS in Finance with a quantitative track, but it also is not focused on fintech.

The chart below summarizes the differences between the proposed program and finance-related master's degrees offered by the other UM System campuses and other institutions across the St. Louis region. UMSL's proposed MS in Fintech will be a standout degree program in the region.

Master's in Finance Programs, UM System and St. Louis Region

University	Program	Traditional Finance Covered	Fintech Focus	Affordability Relative to UMSL	AACSB Accredited
MU	MS in Finance	YES	NO	Similar	YES
UMKC	MS in Finance	YES	NO	Similar	YES
Webster Univ	MS in Finance	YES	NO	1.2x more expensive (for MO residents)	NO
Saint Louis Univ	MS in Applied Financial Economics	YES	NO	1.9x more expensive (for MO residents)	YES
Washington Univ	MS in Finance (w/ Quantitative Track)	YES	NO	4.7x more expensive (for MO residents)	YES
UMSL	MS in Fintech	YES	YES	Inexpensive, Accessible	YES

Additionally, UMSL has a high percentage (72%+) of graduates who stay in the region, work at local companies, and serve the regional economy.

In sum, the proposed master's in fintech has minimal overlap with existing programs in the region and the UM System, which do not focus specifically on fintech beyond one fundamentals-of-fintech course at UMKC.

Looking nationally, the following universities offer MS in Fintech programs. Their conferral rates are listed. Out of the nine programs, four are online (noted in bold), and the other five are on-campus. At this point, no master's in fintech or similar program is offered in Missouri or surrounding states.[14]

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[10] https://bloch.umkc.edu/graduate-program/msf/deg-requirements/
[11] https://www.webster.edu/catalog/current/graduate-catalog/degrees/finance.html
[12] Association to Advance Collegiate Schools of Business (AACSB)
[13] https://www.slu.edu/business/graduate/applied-financial-economics/index.php
[14] Eduventures Research Report (July 2021). A market analysis survey on MS in Fintech programs commission by the University of Missouri System from Eduventures, a research firm focused on higher education.

Nationwide Programs Relevant to an MS in Fintech

Provider	Program Name	Conferral Data
Boston University	MS in Mathematical Finance and Financial Technology	• 113 conferrals reported to Financial Mathematics in 2019 • 90 conferrals reported to Management Sciences and Quantitative Methods, Other in 2019
Brandeis University	Master of Science in Digital Innovation for Fintech	• 112 conferrals reported to Financial Mathematics in 2019
Duke University	Master of Engineering in Financial Technology	• 136 conferrals reported to Financial Mathematics in 2019
New Jersey City University	Master of Science in Financial Technology	• 5 conferrals reported to Finance, General in 2019
New Jersey Institute of Technology	Master of Management in Fintech	• Unclear - did not report to any relevant CIP codes in 2019
Santa Clara University	Master's in Finance and Analytics	• 19 conferrals reported to Finance, General in 2019
Stevens Institute of Technology	Financial Analytics Master's Degree	• 107 conferrals reported to Financial Mathematics in 2019
University of Connecticut	MS in Financial Technology	• 147 conferrals reported to Financial Mathematics in 2019
The University of Texas at Dallas	Master of Science in Financial Technology and Analytics	• 37 conferrals reported to Management Sciences and Quantitative Methods, Other

The following table compares five master's in fintech programs available across the country, including the required number of credit hours, cost per credit hour, and total cost as compared to UMSL's proposed program.

Nationwide Master's in Fintech Degree Programs Compared to UMSL (online programs noted in bold)

Institution	Credits	Cost Per Credit	Total Cost
Boston University	39	$1,502	$58,578
Duke University	30	$2,909	$87,270
Santa Clara University	36	$1,318	$47,448
Stevens Institute of Technology	33	$1,716	$56,628
University of Connecticut	36	$1,500	$54,000
UMSL (for MO residents)	**30**	**$646**	**$19,380**

UMSL's MS in Fintech will offer both the quality and the focus required to address a growing workforce and market demand. Additionally, UMSL will offer this at a more affordable cost than other MS in Fintech degree programs (shown in the table above). And, because the degree will be offered online, it will be accessible to students from across the country.

3. Business-Related Criteria & Justification
3. A. Market Analysis
3. A.1. Rationale & Workforce Demand for the Program
According to the U.S. Bureau of Labor Statistics, the job growth for financial analysts, an exemplary fintech position, is projected from 2016 to 2026 to be 11% higher than the average

rate with an estimated increase of 32,200 positions.[15] By 2024, the demand could outpace supply by 250,000 jobs, with more than one in five jobs in the field of finance and insurance.[16]

In conducting our due diligence for the proposed degree program, we pulled Burning Glass labor-market data on "financial mathematics" degree programs for Missouri and its eight contiguous states. The data shows that the number of jobs in this area is expected to grow over the next 10 years and that the median salary in our region for graduates is $59,000 above the average living wage for the region. This data also shows the alignment of key competencies needed in this field and the proposed specialized fintech curriculum (e.g., machine learning and programming skills such as Python and R). For example, Python programming skills, taught in the Financial Data Analytics class, were found in the second-highest number of job postings (25%) for positions included under "financial mathematics" between 11/01/2020 and 10/31/2021, just after SQL. Python had a 48% projected growth while SQL only 8.5%.[17]

Unfortunately, the Burning Glass data parameters cannot be made specific enough to specifically represent a fintech-focused degree. Therefore, we also considered a market analysis report specific to fintech degree programs that was recently commissioned by the University of Missouri System from Eduventures – a leading research firm focused on higher education.

The Eduventures report, issued in July 2021, provides a detailed analysis considering programs across the country, in Missouri, and in nearby states (Arkansas, Illinois, Iowa, Kansas, Kentucky, Nebraska, Oklahoma, and Tennessee) regarding demand, competitive landscape, labor market, competitive analysis, and prospective adult students.[18]

The report's key findings include the following:

- While fintech presents a market that, based on program and market indicators, shows promise, there are few degree programs available and even fewer that use online delivery (the preferred option for prospects). The proposed program is offered online.

- The regional markets (i.e., the St. Louis region, the state of Missouri, and eight states contiguous to Missouri) offer no fintech master's degree program. UMSL would be the first in the region to offer this program and would stand out by doing so.

- Few programs were identified nationwide.

- All occupations relevant to a master's in fintech are projected to grow at an above-average rate.

- Career advancement is a key consideration to fintech degree program prospects. Fintech offers outstanding career advancement potential, and UMSL's location in a tech and financial hub increases the opportunities for graduates.

The following table presents the national labor market demand with average projected growth. We included areas such as statistics and operations research analysis as our fintech program

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[15] https://www.bls.gov/ooh/business-and-financial/financial-analysts.htm
[16] https://www.businessstudent.com/careers/hot-career-opportunities-in-data-science-right-now/
[17] Full report, Burning Glass data (PDF)
[18] See the report in its entirety here: Eduventures Research Report.

includes data analytics and artificial intelligence, which cover significant amounts of materials from those fields. The growth rates for these fields are above the all-occupations average (6%), ranging from 8% to 30% growth.

National Fintech Labor Market Demand

SOC	Description	2021 Jobs	2031 Jobs	2031-2031 Change	2021-2031 % Change
All SOC Codes	All Occupations	151,433,197	160,600,748	9,167,551	6%
11-3031	Financial Managers	699,508	804,494	104,986	15%
13-1111	Management Analysts	782,314	887,470	105,156	13%
13-2051	Financial and Investment Analysts	491,392	528,410	37,018	8%
15-2031	Operations Research Analysts	102,205	124,581	22,376	22%
15-2041	Statisticians	43,329	56,381	13,052	30%

A similar set of data for the regional market is presented below. The average growth rates for financial managers, management analysts, financial and investment analysts, operations research analysts, and statisticians show a growth rate between 5% and 27%. These projected growth rates are above the average for all occupations (3%), ranging from 5% to 27% growth.

Regional Fintech Labor Market Demand

SOC	Description	2021 Jobs	2031 Jobs	2031-2031 Change	2021-2031 % Change
All SOC Codes	All Occupations	21,078,091	21,812,602	734,511	3%
11-3031	Financial Managers	106,405	118,915	12,510	12%
13-1111	Management Analysts	96,038	106,629	10,591	11%
13-2051	Financial and Investment Analysts	57,219	60,329	3,110	5%
15-2031	Operations Research Analysts	11,341	13,552	2,211	20%
15-2041	Statisticians	5,260	6,682	1,422	27%

During the June 2020 – June 2021 period, there were 7,180 job postings in the region for "financial technology" skills, with 28 days median posting duration. Monthly postings have increased significantly since 2016.[19]

The proposed fintech program addresses the market demand in two distinct ways. First, it responds to the financial services industry demand for a streamlined finance degree focused on modern big-data-driven finance. Second, it incorporates fintech, including blockchain, big data analytics, machine learning, and artificial intelligence, into the curriculum. In the process, students will be exposed to the cutting-edge technologies deployed to overcome the challenges of big data collection, analytics, and modeling using AI/ML.

Industry strongly supports this program as well. As shown in the support letters from companies (see Appendix 6. E.), the wealth-management firm Moneta states that "This program is in great need, from AI/machine learning that helps in portfolio management to blockchain that explains smart contracts." A vice president at Enterprise Bank & Trust notes that "The MS in Fintech program at UMSL provides an excellent and timely opportunity for financial practitioners to elevate their skill set in serving their clients. This is a strong program, and based on a review of available jobs, it appears that the fintech/analytics space is highly sought after." A senior vice president at Commerce Trust Company states that the proposed program curriculum blends the

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[19] Eduventures Research Report p 35.

courses needed to address the field's "increasing demands for cross-functional knowledge in the finance industry," and Commerce Brokerage Service's president notes that he strongly supports this program because it is timely and distinctive in meeting the challenges presented by the "transformative technological changes" in the finance industry.

3. A.2. Student Demand for the Program

The proposed fintech degree program focuses on training students for advanced technical positions in the financial sector. Student prospects for this degree include, but aren't limited to:

- Professionals in the financial services sector in the St. Louis metropolitan area, across the region and the nation who want to stay current and enhance their competitiveness in the job market.

- Current UMSL undergraduate finance students aspiring to pursue study in fintech to expand their job prospects.

A snapshot of demand for fintech courses in the existing MBA and BSBA programs suggests a healthy market. While these courses were not advertised and are only taken as electives, they have growing enrollment. For example, the blockchain course offered in spring 2022 had 24 students; with four fintech-related courses averaging enrollment of 13.

The tables below (1a and 1b) show the projected student enrollment over the first six years. We arrived at these numbers based on UMSL's other specialized master's degree programs in their initial years; and these are conservative projections. For example, the UMSL master's degree in supply chain management had 10 students enroll in the first year, while the cybersecurity degree program had at least twice as many.

Table 1a. Student Enrollment Projections (anticipated total number of students enrolled in the program during each of the first six fall semesters following implementation). These projections represent the middle-of-the-road estimates (i.e., the most likely). These projections assume a 10% attrition rate.

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Full-time	9	19	21	23	24	25
Part-time	1	2	4	6	8	8
Total	10	21	25	29	32	33

Table 1b. New Student Enrollment Projections (anticipated number of new students entering the program during each of the first six fall semesters following implementation that are new to the University.)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Full-time	9	11	12	13	14	15
Part-time	1	1	2	3	3	3
Total	10	12	14	16	17	18

Table 1c. Projected Number of Degrees Awarded These projections assume a 10% attrition rate.

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
# of Degrees Awarded	-	8	11	12	14	16	17	17	19	20

Student demand for a certain degree program over others is affected by various factors. According to the "2021 Trends in Higher Education" report published by Hanover Research,[20] the main consideration when building a new degree program is that, more than ever, "students are seeking programs that feel relevant and offer a clear path to a career." A master's degree in fintech is not only relevant in today's financial and business worlds, but fintech also offers many clear career paths and high-paying opportunities for graduates. In fact, in 2021, the average fintech salary in the United States was $124,500 per year.[21] The MS in Fintech at UMSL aligns very well with what students are seeking.

Also, student demand for an MS in Fintech program mirrors marketplace demand for the underlying skills and the job opportunities available for graduates. The information on market demand in the previous section showed that between 2021 and 2031, there were above-average growth rates for relevant positions with several significantly higher. With such a fast-growing market with few master's programs available nationwide, market demand is critical for determining student demand.

Location is another key consideration of students when choosing a master's in a fintech degree program. A university located in a financial hub with a thriving technology ecosystem offers students access to companies that are recruiting in fintech.

St. Louis is such a location. It has a significant finance and insurance business presence[22] with companies such as Bank of America, National City, Regions Bank, U.S. Bancorp, Commerce Bank, UMB Bank, Wells Fargo, Thomas Reuters, Citi Mortgage, MasterCard, Reinsurance Group of America, Edward Jones, Stifel, Moneta Group, and Cushman and Wakefield.[23] In addition, St. Louis is home to several financial regulatory agencies including the Federal Reserve Bank of St. Louis and the Office of the Comptroller of Currency.

Furthermore, St. Louis has the third highest location quotient for Securities and Commodity Contracts Intermediation and Brokerage of any region in the nation (New York City is first, and Boston is second). Other employers actively seeking UMSL business students include Boeing, Bayer, Centene, Emerson Electric, Express Scripts, Anheuser-Busch InBev, AT&T, Enterprise Holdings, Ameren, and BJC Healthcare. Also, St. Louis is the headquarters for 17 companies on the Fortune 1000 list (see Appendix 6. F.). The financial and professional services fields in the St. Louis region continue to grow.

Testimonials and letters of support from industry leaders indicate the significance of the proposed degree program for addressing the significant workforce needs in fintech (see appendices 6. C.2. and 6. E.).

3. B. Financial Projections

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[20] 2021 Trends in Higher Education report
[21] https://www.talent.com/salary?job=fintech
[22] Drew, James. "BEAT 'EM OR JOIN 'EM: The rise of fintechs is prompting St. Louis banks to either adapt to emerging technologies or partner with the firms upending their industry." St. Louis Business Journal (online). 01/12/2022.
[23] https://ded.mo.gov/financial-professional-services/why-missouri/established-financial-services-industry

Table 2 (see following page) provides pro forma financial projections for the middle-of-the-road, most likely scenario. The projections were developed with the guidance of the college's financial manager and both a business manager and the director of budget services in UMSL's Finance and Administration Division. The projections were approved by the Vice Chancellor of Finance and Administration.

Table 2
GRADUATE PROGRAM PRO FORMA
MS In Fintech
University of Missouri - St. Louis
PROFORMA: MS In FinTech
Prepared by: Tayler Leverenz & Nasser Arshadi   Approved by: _Tanika Busch

PROGRAM:	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	FY22	FY23	FY24	FY25	FY26	FY27	FY24
Enrollment Projections							
Head Count Students - new incoming FT		9	11	12	13	14	15
Head Count Students - transfers within campus / PT		1	1	2	3	3	3
Enrollment Sensitivity (+-%)		-10%	-10%	-10%	-10%	-10%	-10%
FT Head count loss due to attrition		(1)	(1)	(1)	(2)	(2)	(2)
FT Headcount with Attrition		8	10	11	11	12	13
Student Credit Hours	-	156	303	360	399	435	468
Tuition Rate/Credit Hour	522	532	543	554	565	576	588
Fee Rate/Credit Hour	125	127	130	132	135	137	140
Scholarship Allowances ($)							
Revenue Projections		*****CALCULATED CELLS*****					
Tuition	-	83,060.64	164,556	199,422	225,447	250,704	275,117
Supplemental & Other Fees		19,810	39,248	47,563	53,770	59,794	65,617
Scholarship Allowances							
Net Tuition and Fees	-	102,871	203,803	246,986	279,217	310,498	340,734
Other Income							
TOTAL PROGRAM REVENUE	$0	$102,871	$203,803	$246,986	$279,217	$310,498	$340,734
Recurring State Support							
TOTAL REVENUE	$0	$102,871	$203,803	$246,986	$279,217	$310,498	$340,734
Expenditure Projections							
Faculty Salaries							
Adjuncts							$ 10,000
Technical Salaries							
detail							
Support Salaries							
detail							
Total Salaries	-	-	-	-	-	-	10,000
Benefits	-	-	-	-	-	-	765
Subtotal Salaries and Benefits	$0	$0	$0	$0	$0	$0	$10,765
Operating Expense							
Computing Expenses							
NonCapital Maintenance & Repair							
Noncapital Equipment							
Supplies							
Professional & Consulting							
Travel & Training							
Misc. Expenses: Marketing covered by MarCom		10,000	10,500	11,025	11,576	12,155	12,763
Subtotal Operating Expense	-	$10,000	$10,500	$11,025	$11,576	$12,155	$12,763
One-time Expenditures (Startup Costs)							
Additional Space Costs							
Subtotal One-time Expense	$ -	$0	$0	$0	$0	$0	$0
TOTAL EXPENDITURES	$0	$10,000	$10,500	$11,025	$11,576	$12,155	$23,528
DIRECT MARGIN	$0	$92,871	$193,303	$235,961	$267,641	$298,343	$317,206
CUMULATIVE DIRECT MARGIN	$0	$92,871	$286,175	$522,135	$789,776	$1,098,119	$1,405,325
Subtract:							
Revenue from Transfers within Campus	$ -	$ 15,828	$ 16,143	$ 32,931	$ 50,385	$ 51,393	$ 52,421
NET MARGIN TO THE CAMPUS	$0	$77,045	$177,161	$203,029	$217,256	$246,950	$264,786
CUMULATIVE NET MARGIN TO THE CAMPUS	$0	$77,045	$254,205	$457,234	$674,490	$921,440	$1,186,226
Campus Overhead Allocation	$ -	$ 12,957	$ 25,167	$ 29,902	$ 33,141	$ 36,131	$ 38,872	$ 176,170
MARGIN AFTER CAMPUS OVERHEAD	$0	$64,087	$151,993	$173,128	$184,115	$210,819	$225,913	$1,010,056
CUMULATIVE MARGIN AFTER CAMPUS OVERHEAD	$0	$64,087	$216,081	$389,208	$573,323	$784,142	$1,010,056

Assumptions:
All students, new Full-Time will take 18 and 12 credit hours in years 1 and 2 (9 FS, 9 SP, 6 SS, 6 FS) for 30 total credit hours
All students, transfers within campus Part-Time will take 12, 15, and 3 credit hours in years 1 and 2 and 3 (6 FS, 6 SP, 3 SS, 6 FS, 6 SP, 3 SS) for 30 total credit hours
All students are assumed Full-Time who are incoming new students. Transfers within campus assumed to be part-time.
Assume 10% Attrition on Full-Time students.
Credit hours from year 2 onward include the total number of new and continuing students
Tuition rate and fee rate will increase by 2% each year for CPI
Current full-time faculty can run the program without a need for another full-time hire
Marketing Costs will be absorbed by Marcom's budget the first year in start up costs
Going forward, MarCom will market Fintech in their budget
Campus Overhead assumed using FY19 fingerprint data
Scholarship 0% each year in tuition
Only fees are Coba Graduate Fees
Assume all students are resident or the students pay the resident fees
Assume at 18 students, 1 additional adjunct will be needed per semester
Per University protocol, in the first year, FT students will be enrolled in FS and SP. In the second year, FT students will be enrolled in SS, FS
Per University protocol, in the first year, PT students will be enrolled in FS and SP. In the second year, PT students will be enrolled in SS, FS, SP. In the third year, PT students will be enrolled in SS.

3. B.1. Additional Resources Needed

The proposed degree program is designed to leverage existing resources to launch and grow.

Existing College of Business Administration full-time faculty and staff will be sufficient to successfully launch this program in Year 1; therefore, no additional hires will be required. Should additional faculty be needed, which is expected once enrollment surpasses 50 students, we will rely on industry experts in specialty areas to serve as part-time faculty. We do the same for all of our specialty master's programs, and this is expected and supported by our accrediting body (AACSB).

The graduate programs office will provide advising and other student services, as they do for the college's other master's degree programs (MBA, MAcc, MSSCA, MSIST, MSCST).

Also, resources needed for marketing the new degree program will be covered by the UMSL Marketing and Communications office (MarCom). MarCom will also produce the program website while the department will be responsible for upkeep of the site.

3. B.2. Revenues

In the most likely scenario, a student would complete the program in 16 months: fall (9 credit hours), spring (9 credit hours), summer (6 credit hours), and the following fall (6 credit hours). Alternatively, a part-time student may finish the program in two years: fall (6 credit hours), spring (6 credit hours), and summer (3 credit hours); second-year fall (6 credit hours), spring (6 credit hours), and summer (3 credit hours). (See Appendix 6. G. for a sample academic map.) For the most likely scenario, the cumulative net margin to the campus over a six-year period will amount to $1,186,226 (see Table 2 above).

3. B.3. Net Revenue

Table 2 (above) shows the cumulative margin after the cumulative campus overhead: $1,186,226 - $176,170 = $1,010,056.

3. B.4. Academic and Financial Viability

As noted above, the current faculty resources in the College of Business Administration and its Department of Finance and Legal Studies are sufficient to launch and maintain the MS in Fintech while also meeting AACSB Faculty Qualifications and Resource sufficiency standards. Student support and advising needs are determined by overall graduate enrollment as graduate advisors support students across programs. Our student enrollment projections (shown in tables 1a and 1b, page 13) are sufficient to make the program academically viable.

The classes that comprise the proposed degree program are existing classes that are currently available to MBA and other master's program students in the college. Because students from outside the fintech master's program enroll in these courses, the larger classes create an even more vibrant learning environment.

Table 3. Enrollment for Academic and Financial Viability

Viability	Minimum Enrollment
Academic	6
Financial	6
Overall	6

Missouri Department of Higher Education (MDHE) has a stated policy that if a master's program has, on average, fewer than five graduates over three years prior, it will be flagged for additional review. Since we expect no more than 10% of students to leave the program before graduation, we have stated our estimates of enrollment at six students, with five students graduating.

The program is estimated to generate positive cash flows beginning in Year 1. Over six years, we expect to generate more than $1,010,056 in the net cumulative margin after campus overhead.

3. C. Business Plan: Marketing, Student Success, Transition & Exit Strategies
3. C.1. Marketing Plan

Marketing is critical to successfully launch a new degree program, and the keys are to correctly identify those who would benefit and to determine how to reach them.

The primary target student population for the Master of Science in Fintech includes students with undergraduate degrees in business, particularly finance. We will also direct marketing efforts to working professionals in the various financial and other related sectors (e.g. companies with large, global consumer bases) who want to leverage the explosive growth in fintech through career-enhancing educational opportunities.

Geographically, we will focus heavily on the St. Louis MSA while promoting the program across the state and the Midwest. Because the program is online, we can also reach students from across the country. Once the program is approved, we will work with UMSL marketing and communications professionals to further refine our target audiences and marketing tools to ensure connections are made and meaningful messaging is delivered.

UMSL MarCom will create a welcoming, informational website with an intuitive user interface and provide additional marketing support. For example, they will work the new degree program into advertising messaging that promotes different types of degrees; announce the program via UMSL Daily, social media, and other news outlets; provide creative services for marketing materials and branding, and incorporate the program into the UMSL View Book and appropriate UMSL web pages for easy access to information about the degree.

The College of Business Administration and the degree department will incorporate the new program into the departmental website and add it to the UMSL Bulletin, which provides easily accessible, comprehensive information on all of UMSL's academic programs (https://bulletin.umsl.edu/).

Also, a recruiter in the college's graduate programs office will market the program through social media and through the CoBA alumni lists. The graduate program team will also hold virtual recruiting sessions to drive enrollment.

We will collaborate with other units to ensure the program is highly visible; for example, Information Technology Services (ITS) will add the degree program to the all appropriate inquiry forms and letters along with the application form.[24] Also, we will work with Missouri Online, the "gateway to online degrees, certificates and courses" offered across the UM System, to make sure the degree appears in searches and to explore whether the new program can be featured on their site when launched.

Moreover, we intend to widely distribute information and website access to the financial services industry employees in the region directly or via our Finance Advisory Board, Finance Career Conference, and private connections with faculty and staff.

3. C.2. Student Success Plan

As with all graduate business students, MS in FinTech students will be advised by the college's team of professional advisors. In addition to seeking advice from the College of Business Administration Graduate Programs Office, students can seek assistance from the faculty and department chair.

Several factors are important for good student retention, including the number of career opportunities available and the ability for students to connect with industry provided by the degree program and institution.

As previously described, a master's in fintech offers a wealth of career paths for graduates. Also, students in the UMSL MS in Fintech program will have multiple points of contact with the industry for job opportunities and mentoring. UMSL's industry-based Finance Advisory board members can connect students with job opportunities.

Further, depending on their interests, a student might leverage the Research Enabled portal for opportunities to participate in industry-sponsored research. Or, an entrepreneurial student might engage with industry through CoBA's UMSL Accelerate programs. Students will also have an expanded network with the industry with the launch of the Handshake online recruiting platform on campus.

These, and other opportunities on campus, will help graduate students, who are often working students, grow and enhance their own industry networks.

3. C.3. Transition Plan

The MS in Fintech would be part of a portfolio of graduate business programs – its success depends on an experienced operational team.

The department chair will serve as the program's academic director overseeing the curriculum, faculty, and assurance of learning. However, the college's governance policies stipulate that this is done through collaboration with department faculty, associate deans, directors, the dean, and the College of Business Administration's standing committees (e.g., Graduate Studies Committee and Assurance of Learning Committee).

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[24] UMSL Inquiry Form; UMSL Tours Form; UMSL Online Application

In addition, the associate dean of graduate programs and the college's graduate programs office oversee student recruiting, student support services, and degree audits.

The dean is ultimately responsible for the success of all CoBA programs and their compliance with AACSB accreditation standards.

3. C.4. Exit Strategy

Should enrollment not meet estimates for two consecutive years beginning in Year 2, the department chair and dean will re-evaluate the program, considering external variables that might be affecting enrollment, to determine whether program re-tooling is needed.

Also beginning in Year 2, if the program does not meet the minimum enrollment estimates for three consecutive years after any reconfigurations from a previous review are implemented, it will be placed on hiatus and the department will cease accepting new students to the program and help the remaining students complete their degrees.

4. Institutional Capacity

In addition to the website, advertising, and marketing managed by MarCom, we budgeted $10,000 a year, adjusted for a 5% inflation in the following years, toward marketing and miscellaneous expenses in delivering the program. If there is a significant increase in enrollment in later years, a coordinator may be needed, requiring a faculty course release. The need for graduate advisors depends on enrollment across all graduate business programs.

The MS in Fintech program will be offered entirely online. All faculty are already certified to teach online through Missouri Online. All courses in the MS in Fintech degree programs will be reviewed through the Quality Review Process prior to the start of the MS in Fintech program.

5. Program Characteristics

5. A. Program Learning Outcomes (PLOs)

Graduates of the MS in Fintech program will be able to apply skills necessary for careers in fintech as identified in our market research:

- Develop a working knowledge of fintech, including cryptocurrencies, blockchain, machine learning, big data, fintech credit, robo-advisors, and algorithmic trading in fostering challenges and opportunities in the financial services industry and markets at home and abroad. A cryptocurrency investment trust will be established to help students see the mechanics of crypto trading and price fluctuations. (The initial seed funding for this program will come from an existing Student Investment Trust.)

- Build financial models and solve practical financial problems such as financial statement analysis, capital budgeting, and project valuation.

- Use programming languages such as Python and R to analyze structured (tabular data) and unstructured data (text data such as social media).

- Understand and implement AI/ML applications in portfolio management, algorithmic trading, fraud analytics, and credit scoring.

- Apply fintech principles and blockchain technology to use-cases in distributed finance (Defi), investment vehicles as alternatives to venture capital paradigms, non-fungible tokens (NFTs), and the Metaverse.

5. B. Program Design & Content

The department faculty discussed the curriculum for more than two years before finalizing the current list of courses. We also sought input from the UMSL chair of the Department of Information Systems and Technology, and the chair of the Department of Finance at the University of Missouri–Kansas City. Both chairs provided input, which is incorporated in the proposal, and supplied support letters included in the appendices (see Appendix 6. B. for IST and Appendix 6. D.1. for UMKC).

The curriculum includes required courses in modern finance topics to prepare students for today's overly complex and data-centric financial services industry. Examples include an introduction to Fintech, data analytics, artificial intelligence, and blockchain. The elective courses offer an array of choices for students to pursue their areas of interest in finance.

The MS in Fintech program is a compact 30-credit hour course of study with classes offered in the fall, spring, and summer semesters. All classes are offered online, and students can pursue the degree full-time or part-time.

The following required courses comprise 24 credit hours, each with three credit hours:

- Finance 6500 Financial Management[25]
- Finance 6503 Financial Modeling and Computer Applications
- Finance 6521 Financial Forensics: The Science of Derivatives
- Finance 6570 Introduction to Fintech
- Finance 6572 Financial Data Analytics
- Finance 6574 Artificial Intelligence and Machine Learning in Finance
- Finance 6576 Blockchain
- Finance 6590 Seminar in Finance

In addition, students must select two elective courses (six credit hours) from the following list:

- Finance 6520 Security Analysis
- Finance 6540 Financial Institutions and Markets

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[25] FIN 6500 course may be waived depending on the candidate's previous educational experience. If so, the candidate will need to take an extra course from the elective course list. In total, a student is required to take a minimum of 30 credit hours. The 30-credit-hour program is tailored for students with an undergraduate degree in business or other degree that satisfies the FIN 6500 pre-requisites; otherwise, they need to take additional courses to meet the requirements for the FIN 6500 class.

- Finance 6542 Real Estate
- Finance 6545 Venture Capital and Private Equity
- Finance 6580 International Financial Management

A sample academic map is included, as previously noted, in Appendix 6. G. The curriculum map is shown in Appendix 6. H.

5. C. Program Structure

This MS in Fintech program includes 30 graduate credit hours.

5. C.1. Program Structure Form

1. Total credits required for graduation: 30
2. Residence requirements, if any: N/A
3. General education
   a. Total general education credits: 0
4. Major Requirements
   a. Total credits specific to a degree: 30

Courses (specific course or distribution area and credit hours):

	Specific Course	Hrs	Total Hrs
Foundations Course (Required or Waived)	Finance 6500: Financial Management	3	3
First Course List (Required)	Finance 6503: Financial Modeling and Computer Applications	3	21
	Finance 6521: Financial Forensics: The Science of Derivatives	3	
	Finance 6570: Introduction to Fintech	3	
	Finance 6572: Financial Data Analytics	3	
	Finance 6574: Artificial Intelligence and Machine Learning in Finance	3	
	Finance 6576: Blockchain	3	
	Finance 6590: Seminar in Finance	3	
Second Course List (6 Hours Required, 9 if FIN6500 is waived)	Finance 6520: Security Analysis	3	6
	Finance 6540: Financial Institutions and Markets	3	
	Finance 6542: Real Estate	3	
	Finance 6545: Venture Capital and Private Equity	3	
	Finance 6580: International Financial Management	3	
			30

5. Free elective credits
   a. The "Second Course List" electives must be selected from their respective lists in Section 5.B. (also shown in the chart above).
6. Requirement for thesis, internship, or another capstone experience: N/A
7. Unique features such as interdepartmental cooperation: N/A

5. D. Program Goals and Assessment

Program Learning Outcomes (PLOs) were discussed in Section 5. A. and include the following, shown here in abbreviated form:

- Develop a working knowledge of fintech, including cryptocurrencies, blockchain, machine learning, big data, fintech credit, robo-advisors, and algorithmic trading.

- Build financial models and solve practical financial problems.

- Use programming languages such as Python and R to analyze structured (tabular data) and unstructured data (text data such as social media).

- Understand and implement AI/ML applications in portfolio management, algorithmic trading, fraud analytics, and credit scoring.

- Apply fintech principles and blockchain technology to use-cases in distributed finance (Defi), investment vehicles as alternatives to venture capital paradigms, non-fungible tokens (NFTs), and the Metaverse.

The tables below show how these outcomes will be assessed. The department chair will be responsible for coordinating the plan's implementation on an annual basis in concert with department faculty. The assessment information collected will be used to form recommendations that will be shared with faculty, and, after getting consensus, deployed in future implementation plans. Program PLOs will be shared with the advisory board annually for their feedback.

Direct Assessment:

Assessment Plan (how)	PLO #1	PLO #2	PLO #3	PLO #4	PLO #5	Timetable for Data Collection
Use case project in the Capstone Seminar in Finance Course	x	x	x	x	x	Each spring
Meet with Interdisciplinary Colleagues to Discuss Student Knowledge Gaps, Inform Program Improvement Based on Assessments Above	x	x	x	x	x	Annually

Indirect Assessment:

Assessment Plan (how)	PLO #1	PLO #2	PLO #3	PLO #4	PLO #5	Timetable for Data Collection
Student Exit Survey	x	x	x	x	x	Semester of graduation
Student Course Evaluations	x	x	x	x	x	Each semester
Alumni Survey	x	x	x	x	x	Every 5th year (starting the program's 3rd year)

In addition, we will implement an Assurance of Learning (AOL) process to ensure quality program delivery and student experience through ongoing review and faculty mentoring in the following ways.

- Each course will have exams, quizzes, and other evaluation schemes to assess students' knowledge and comprehension of the fintech topics.

- Case studies will assess students' abilities to identify the real-world application and implementation layers.

- In the capstone seminar course, students will complete a paper on a real-world fintech case. Examples include real estate, insurance, payment system, brokerage, derivatives, securities markets trading and settlement, venture capital, and wealth management.

5. D.1. Program Success Metrics and Goals

We expect a retention rate of 90%, a graduation rate of 95%, and a placement rate of 100%. These will be achieved through knowledgeable and dedicated faculty and assistance from our advisory board members if needed. We expect most of our students to be full-time employees in the industry while attending the program.

Although the primary focus is on the financial services industry, we expect other non-finance industries to begin utilizing the foundational infrastructure technology in fintech (i.e., blockchain) to improve operational efficiencies. As such, in the next decade, we envision an increase in demand by at least 10% for our graduates in such fields as supply chain, auditing, and energy.

Additional program success measures will include participation and engagement in college activities by serving on department and college advisory boards. The college has had significant success with alumni engagement, and we expect similarly with this program.

5. E. Student Preparation

Admission to the program requires an undergraduate business degree or another discipline that satisfies the pre-requisites for the introductory Financial Management course (FIN 6500). Program applicants who do not meet the requirements need to take additional courses.[26]

5. F. Faculty and Administration

The UMSL finance faculty members hold PhDs from major U.S. universities and have extensive research and industrial experience to share in the classroom. As active researchers, they are on the cutting edge of new developments in the field, which are carefully integrated into coursework. The UMSL finance department's research was recently ranked in the top 16 nationwide (90.3 percentile) in the Academic Analytics Scholarly Research Index (SRI).[27] Our

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[26] Prerequisites for Finance 6500 include ACCTNG 5400 or ACCTNG 2400, SCMA 5300 or SCMA 3300, and BUS AD 5000 or ECON 1001 and ECON 1002.
[27] Source: Academic Analytics (Release: AAD2017.09.01269)

Certified Financial Planner (CFP) program was recently ranked in the top 17 nationwide.[28] We expect courses in this program to be taught by full-time faculty. If the program expands beyond our current expectations, and we need extra faculty in order to provide more sections of the courses, we may hire professionals in fintech to teach in the program.

The faculty teaching the courses in this program will help students with coursework and career advice. The percentage of faculty time dedicated to each class is similar to the time in their other courses, mainly because the courses are currently offered.

The Department of Finance and Legal Studies chair oversees the program development. The Graduate Business Programs director handles student admission and administration processes.

The MS in Fintech program does not require additional faculty as the underlying courses are currently offered and can accommodate the additional students that this program brings in.

5. G. Alumni and Employer Survey

We sought feedback from the Finance Advisory Board throughout the development of the program. Board members noted that the world is becoming more data-driven and that there is an increasing need for cross-functional knowledge of finance, IT applications and data analysis. Such feedback was critical in designing the program structure, with the resulting proposed degree program built around an industry-supported mix of courses that provide the necessary fintech, foundational finance, data analysis for work in this field. (See additional Finance Advisory Board feedback in Appendix 6. C.2.)

After the program begins, we will survey graduating classes one month after degree completion for program satisfaction and one year later for ways to improve the program in concert with industry requirements. A sample graduate survey can be viewed here.

5. H. Program Accreditation

The proposed program requires no accreditation from a professional association beyond the Association to Advance Collegiate Schools of Business (AACSB) for all college degree programs. The UMSL College of Business Administration is accredited by the AACSB.

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[28] https://www.wealthmanagement.com/careers/top-ranked-colleges-financial-planning?full=1

6. Appendices

6. A.1. College Support Letters: Former Dean, College of Business Administration

January 31, 2022

Re: Letter in Support of Master of Science in Financial Technology (Fintech) Degree

During the seven years in which I served as dean of the college of business administration at UMSL, I increasingly heard from our department of Finance and Legal Studies, its advisory board, the college's leadership council, and alumni about the growing need for enhanced financial technology preparation for our students. St. Louis has an exceptionally strong financial services industry and we have many of our graduates in leadership positions at firms such as Edward Jones, Moneta Group, Stifel, Wells Fargo Advisors, Merrill Lynch, etc.

As we began to develop the program, we were able to strengthen our already strong Finance and Legal Studies department with new faculty and committed department chairs. As a first mover in this area, and with years of emphasis on on-line delivery excellence, we also received interest from other UM System campuses.

I believe that student interest is strong, and that the college will be able to duplicate the success we have had with other new graduate programs in supply chain analytics and cybersecurity. As can be read in the proposal, the program will enjoy a competitive advantage with other business schools in the region.

I highly recommend approval of this innovative program.

Charles Hoffman
Retired dean, 2013-2021
Executive in Residence at UMSL, working with Chancellor Sobolik
Member, Chancellor's Council and co-chair Marketing and Messaging Committee

6. A.2. College Support Letters: Dean, College of Business Administration

UMSL|Business
University of Missouri—St. Louis

15 October 2021

Re: Letter of support for proposed MS in Financial Technology (Fintech)

I fully support the launch of the proposed MS in Financial Technology as the next innovative program in UMSL's College of Business Administration. As with past successful CoBA programs, the MS in Fintech fulfills UMSL's and CoBA's missions to serve the emerging needs of the St. Louis region and beyond. Indeed, this online MS Fintech program would have a "first mover advantage" in Missouri (and its contiguous states) and would serve an emerging need in — particularly among the many UMSL alumni who work in St. Louis's strong financial services industry. As outlined in the *Eduventures Research Report*, this new program "shows promise based on aligned program and labor market indicators." In addition, UMSL's expertise in offering online programs (e.g., Missouri Online) enable us to help our students meet their career advancement goals with a graduate degree in fintech via their preferred virtual elearning modality. Finally, even with modest initial enrollment estimates we anticipate a positive net margin in its first year.

I endorse this proposal with great enthusiasm.

Sincerely,

Joan M. Phillips, PhD
Dean and Professor
College of Business Administration
University of Missouri-St. Louis
jphillips@umsl.edu

6. B. UMSL's Department of Information Systems and Technology Support Letter

UMSL|Business
Information Systems and Technology

INFORMATION SYSTEMS AND TECHNOLOGY
COLLEGE OF BUSINESS ADMINISTRATION
UNIVERSITY OF MISSOURI - ST. LOUIS
211 ESH – MC 22
One University Boulevard
St. Louis, MO 63121-4400 U.S.A.
voice: +1 314-516-6267
fax: +1 314-516-6827

June 1, 2021

Re: Letter of support for UMSL's MS degree in Financial Technology (Fintech)

I am very pleased to support the MS degree in Financial Technology (Fintech) proposed by UMSL's Department of Finance and Legal Studies. The department is one of the strongest and most productive units at UMSL with renowned expertise in corporate finance, investments, financial institutions and markets, personal financial planning, and financial technology. It's active and committed advisory board helps provide numerous opportunities for students such as internships, mentorships, and career advice.

Fintech is a very critical new area of study with a high projected demand for graduates as artificial intelligence, crypto assets, and other information technologies are becoming widely adopted throughout the financial services industry. With the new AACSB accredited MS degree, UMSL's Department of Finance and Legal Studies will be positioned to become one of the premier centers of Fintech learning and research in the country which will provide enormous benefit to the St. Louis region, particularly its significant base of banks, brokerage houses, venture capital firms, and insurance businesses.

Fintech clearly represents a significant and disruptive transformation in Business education. I am happy that the Department of Finance and Legal Studies is at the forefront of this new wave, helping establish UMSL as a thought leader in the space. I therefore enthusiastically endorse the department's proposal.

I will be very happy to provide any more information, if needed, and can be contacted by telephone at 314-516-7354 or by e-mail at mirchandanid@umsl.edu.

Sincerely,

D. A. Mirchandani

Dinesh Mirchandani,
Ph.D. Professor and
Chair

6. C.1. Finance Department Advisory Board Members

Bill Dickens, Chair
Family CFO Services
Moneta Group
Email: bdickens@monetagroup.com

Alex Banthrongsack
Swiss CNC Machinist
SIM Surgical
Email: alex.banthrongsack@gmail.com

Stan Freerks
Insurance Executive (retired)
Risk Placement Services St. Louis
Email: stanfreerks@gmail.com

Lorenzo Hester
Attorney
The Hester Group
Email: thehestergroup@att.net

Morgan L. Koenig, CFA, CAIA
Portfolio Manager and Research Analyst
Wedgewood Partners, Inc.
Email: mkoenig@enterprisebank.com

Tom Lucas
Treasurer and Senior Vice President of Finance
and Corporate Development
Caleres Inc. (retired)
Email: lucastho@gmail.com

Michael Mohr
Founder
MOHR Advantage, LLC
Email: mike@mohradvantage.com

Gary M. Mudd
Chief Financial Officer
Doorways
Email: gmudd@doorwayshousing.org

Don Mueth
Chief Operating Officer
Asset Consulting Group, LLC
Email: don.mueth@acgnet.com

Don Pratt
Executive Vice President & Chief Credit Officer
CSI Leasing, Inc.
Email: Don.Pratt@csileasing.com

Dennis Stoll
Branch Team Trainer
Edward Jones
Email: Dennis.Stoll@edwardjones.com

John H. Russell
Senior Vice President/Investments
Stifel | Russell Wealth Management Group
Email: John.Russell@stifel.com

Brian R. Salmo
Business Unit Leader & General Counsel
LMI Aerospace
Email: bsalmo@lmiaerospace.com

Emilie Schaffer, CFP, CRPC
Wealth Advisor
Buckingham Strategic Wealth
Email: eschaffer@bamadvisor.com

Michael B. Sullivan
Senior VP and General Counsel
Cortex Innovation Community
Email: msullivan@cortexstl.com

Laura Wollenberg, CPA
International Contracts Specialist
Boeing Defense, Space & Security — Contract Operation
Services
The Boeing Company
Email: laura.s.wollenberg@boeing.com

Jeff Zornes
Founder
Cowboy Ribeyes
Email: jzornes@cowboyribeyes.com

Joan Phillips, PhD (Ex-Officio)
Dean
UMSL, College of Business Administration
Email: joan.phillips@umsl.edu

Nasser Arshadi, PhD (Ex-Officio)
Professor of Finance and Department Chair
UMSL, College of Business Administration
Email: arshadi@umsl.edu

6. C.2. Quotes from a Survey of Finance Advisory Board Members[29]

- "The cross-functional knowledge of Finance, IT applications, and Data analysis are very useful."

- "The world is more data-driven, so data analytics skills are becoming increasingly more in demand."

- "The program outline seems to be well balanced and has a nice blend of Financial Management, Programming, and Data Analytics."

- "Data analytic skills are very much acquired within a work environment – but a solid background in the fundamentals and a degree with this expertise will be a good step one to open job entry doors."

- "Heavier emphasis on analysis would benefit most companies."

- "There is a strong overlap between the fundamental research my investment team does and also needing an understanding from an IT perspective that would allow us to utilize best the Research systems we have to build macros or reports that would provide the data on the companies we own, the companies we are watching, as well as the market in general."

- "There is an increasing need for cross-functional knowledge. Especially as it pertains to all aspects of Finance, Supply Chain Management, Data Management, and Protection and IT. Employees who are able to identify savings opportunities/efficiencies and strategies to get there from data and present it well to company executives will ascend more rapidly in their careers."

See Appendix 6. C.1. for a list of Advisory Board members.

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[29] The survey was distributed to Finance Advisory Board members of UMSL at the board meeting on Jan. 31, 2019. The comments were compiled and collected on the board meeting on April 16, 2019.

6. D.1. UMKC Department of Finance Support Letter

BLOCH

Henry W. Bloch School of Management

November 15, 2021

Dear Nassar,

At your request, I am writing to support your proposal for a fintech-based MSF program. This is a growing area and certainly there is a need for more people with this background. It looks like a well-designed curriculum that meets the needs of both students and employers.

Given the growth in the fintech space as well as the data analytics side of finance, I think this program positions the University of Missouri System well to meet the demands of current and future employers. As the interest in cryptocurrencies grows, it is likely that the Federal Reserve system will increase their interest in this area. As the only state with two Federal Reserve Banks that both have active research departments focused on this area, it seems likely that future regulatory jobs in this space will be located in the state.

By establishing a curriculum that is heavy in fintech, you have created a program that is unique in our state. I also think this program will appeal to students outside of St. Louis, due to the favorable pricing discussed in your proposal.

I am excited about this program and look forward to partnering with you to expand the electives we can offer our students in both programs. Given the new combined Canvas set-up, we have new opportunities for sharing online and hybrid/synchronous online courses that should give our students several new course options once we get some kinks worked out on the financing front.

Sincerely,

[signature]

John M. Clark, Ph.D., CFA, CFP®
Chair, Dept. of Finance
Associate Professor of Finance

6. D.2. Messages from the Missouri S&T Provost and Interim Vice Provost & Dean, College of Arts, Sciences, and Business

From: Potts, Colin <colin.potts@mst.edu>
Sent: Wednesday, January 26, 2022 8:30 AM
To: Arshadi, Nasser <arshadi@umsl.edu>; Drowne, Kate <kdrowne@mst.edu>
Cc: Elrod, Cassie <cassa@mst.edu>; Phillips, Joan <joan.phillips@umsl.edu>
Subject: Re: My sincerest thanks!

Dear Dr. Ashadi,

Let me add my thanks to Kate's. As you probably know, we are creating a new college for innovation, entrepreneurship, and economic development: the Kummer College at S&T. I hope your assistance with our BIT students will be the harbinger of future collaborations.

Colin

> **From:** Drowne, Kate <kdrowne@mst.edu>
> **Sent:** Tuesday, January 25, 2022 4:04 PM
> **To:** Arshadi, Nasser <arshadi@umsl.edu>
> **Cc:** Elrod, Cassie <cassa@mst.edu>; Potts, Colin <colin.potts@mst.edu>
> **Subject:** My sincerest thanks!
>
> Dear Dr. Arshadi,
>
> Dr. Cassie Elrod, acting chair of Business and Information Technology here at S&T, has made me aware of your tremendous responsiveness and collegiality during what has been a really unfortunate situation in our college. I am so grateful for your willingness to work with Cassie and others to help our S&T students find their way into your online finance classes this semester, after their class was unavoidably canceled due to faculty illness. I'm even more humbled by your willingness to pivot two of your fall 2023 classes to an online modality to accommodate our finance students who will still lack local options next semester. Your efforts will help many of our students complete necessary coursework in FinTech and Financial Data Analytics and thus stay on track for timely graduation. I appreciate your generosity more than I can say, and I hope that if our BIT department can ever do your students a good turn, then you will not hesitate to reach out.
>
> With warmest wishes and sincerest thanks,
> Kate Drowne
>
> Dr. Kate Drowne
> Interim Vice Provost and Dean
> College of Arts, Sciences, and Business
> Missouri University of Science and Technology
> 118 Fulton Hall
> Rolla, MO 65409
> Ph. (573) 341-6699

Appendix 6. D.3. MU Support Email

From: Robert, Chris A. <RobertC@missouri.edu>
Sent: Friday, March 11, 2022 10:35 AM
To: Phillips, Joan <joan.phillips@umsl.edu>
Subject: UMSL MS in Fin Tech and possible collaboration with MU

Dear Dean Phillips,

Congratulations on putting together a great proposal for the MS in Fintech. This program should be extremely helpful in supporting development in the high tech service industry in St. Louis, and I wish you all the best.

I'd like us to continue to discuss possible ways of collaborating. In particular, let's continue to explore whether a Fintech graduate certificate developed from some of your course offerings, or perhaps some of your key fintech courses (e.g., Essentials of Fintech and Application of Blockchain in Financial Services Industry) in combination with ours, might be packaged for delivery within our MS in Business (aka "stackable certificates") program. As you know, that program allows for relatively easy collaboration in the use of curriculum across the UM System, and this seems like a nice opportunity to do that, and to build value for our students.

Best,

Chris

Christopher Robert, PhD
Interim Dean

Robert J. Trulaske, Sr. College of Business
407 Cornell Hall | Columbia, MO 65211
O: 573-882-6688 | E: RobertC@missouri.edu
W: business.missouri.edu

Robert J. Trulaske, Sr.
College of Business
University of Missouri

6. E. Industry Support Letters

[Letters on Following 4 Pages]

⋏ MONETA

June 1, 2021

Nasser Arshadi
Professor and Chair
Department of Finance and Legal Studies
233 ABH
University of Missouri – St. Louis
St. Louis, MO 63121

I am writing in support of your MS in Fintech program proposal. As a partner in Moneta – an independent registered investment advisor (RIA), my colleagues and I help clients, including individuals and businesses, achieve their financial goals. I help business owners, executives, and many physicians navigate their pursuit of financial independence.

The world of finance is changing rapidly, and the MS in Fintech program at UMSL responds to these changes. This program is in great need, from AI/machine learning that helps in portfolio management to blockchain that explains smart contracts and new enterprise infrastructures. As such, I am a strong supporter of this program.

Sincerely,

Billy D. Dickens III, CFP®
Partner

**ENTERPRISE
BANK & TRUST**

June 4, 2021

Nasser Arshadi
Professor and Chair
Department of Finance and Legal Studies
College of Business Administration
University of Missouri – St. Louis
St. Louis, MO 63121

I am writing in support of your MS in Fintech program proposal. As a Portfolio Manager at Enterprise Bank & Trust, I am aware of the vast changes in the finance discipline that affect our work in wealth management.

At Enterprise Bank, we offer a range of business and personal banking services. These lines of business include:

- Wealth Management services offering Financial Planning, Estate Planning, and Investment Management
- Trust Services for businesses, individuals, institutions, and nonprofit organizations
- Specialty Banking such as Third-Party Escrow, Property Management, and SBA Lending

All these functions are affected by the advent of Fintech and the advanced technologies it brings forth.

The MS in Fintech program at UMSL provides an excellent and timely opportunity for financial practitioners to elevate their skill set in serving their clients. This is a strong program, and based on a review of available jobs, it appears that the fintech/analytics space is highly sought after. As such, I fully support this program.

Sincerely,

Morgan L. Koenig

Morgan Koenig, CFA
VP, Portfolio Manager | Enterprise Bank & Trust
314-889-2020
150 N Meramec | Clayton, MO 63105 enterprisebank.com

Commerce Trust Company
Wealth | Investments | Planning

June 8, 2021

Nasser Arshadi, PhD
Professor of Finance
College of Business Administration
233 Anheuser-Busch Hall
University of Missouri – St. Louis
St. Louis, MO 63121

Professor Arshadi:

There have been transformative technological changes and increasing demands for corss-functional knowledge in the finance industry. UMSL's proposed MS in Fintech and Data Analytics is timely and disctinctive in meeting such challenges and demands. The program is well-balanced and has a nice blend of Financial Management, Programming, and Data Analytics. As described in the proposal, the program covers a wide range of new technologies such as artificial intelligence, machine learning, blockchain, robo advisors, algorithmic trading, and big data analytics.

I strongly support this program.

Sincerely,

Brent Schowe
Senior Vice President
Director of Fixed Income Research & Trading
(314) 746-3966
brent.schowe@commercebank.com

Commerce Trust Company
Wealth | Investments | Planning

June 8, 2021

Nasser Arshadi, PhD
Professor of Finance
College of Business Administration
233 Anheuser-Busch Hall
University of Missouri – St. Louis
St. Louis, MO 63121

Professor Arshadi:

The transformative technological changes of recent years require revisiting the curriculum previously taught in university finance programs. Financial Technology (Fintech) and data analytics are new technologies for the financial services industry. The significance of such programs is highlighted by a recently planned dialogue at the Federal Reserve Bank of St. Louis entitled "How Fintech is Transforming Banking."

UMSL's proposed MS in Fintech and Data Analytics is timely and important. As described in the proposal, the program covers artificial intelligence, machine learning, blockchain, financial modeling, robo advisors, algorithmic trading, and data analytics.

I support this program and look forward to its implementation.

Sincerely,

Jeff Burgess
President
Commerce Brokerage Services, Inc.
(314) 746-6751
jeff.burgess@commercebank.com

6. F. St. Louis Fortune 1000 Headquarters[30]

	Company	Rank	Revenues ($ billions)
1	Express Scripts Holding	22	$100.288
2	Centene	66	$40.721
3	Emerson Electric	139	$20.268
4	Monsanto	204	$13.502
5	Reinsurance Group of America	246	$11.522
6	Jones Financial (Edward Jones)	403	$6.632
7	Graybar Electric	420	$6.385
8	Ameren	431	$6.076
9	Olin	467	$5.551
10	Post Holdings	508	$5.027
11	Peabody	533	$4.715
12	Panera Bread	760	$2.795
13	Stifel Financial	785	$2.642
14	Caleres	790	$2.579
15	Edgewell Personal Care	845	$2.362
16	Belden	846	$2.357
17	Arch Coal	946	$1.974

[30] http://www.stlregionalchamber.com/blog-post/chamber-blog/2017/06/13/st.-louis-is-home-to-nine-fortune-500-headquarters

6. G. Sample Academic Map

All courses carry 3 credit hours.

Fall 2022	Finance 6500 Financial Management
	Finance 6503 Financial Modeling and Computer Applications
	Finance 6570 Introduction to Fintech
Spring 2023	Finance 6576 Blockchain: Applications in Finance
	Finance 6572 Financial Data Analytics
	Finance 6521 Financial Forensics: The Science of Derivatives
Summer 2023	Finance 6540 Financial Institutions and Financial Markets
	Finance 6520 Security Analysis
Fall 2023	Finance 6574 Artificial Intelligence and Machine Learning in Finance
	Finance 6590 Seminar in Finance

6. H. Curriculum Map

Add I/D/M	MS in Fintech Curriculum Map	Outcome 1: Apply a refined understanding of the principles of financial management, financial institutions and markets, valuation of financial securities, derivatives, real estate, portfolio management, ethics, and risk management in international financial markets to critically assess the future of financial services industry and identify opportunities for growth.	Outcome 2: Develop a working knowledge of Fintech (including cryptocurrencies, blockchain, machine learning, big data, fintech credit, robo advisors and algorithmic trading) in fostering challenges and opportunities in the financial services industry and markets at home and abroad.	Outcome 3: Build financial models and solve practical financial problems such as financial statement analysis, capital budgeting, and project valuation.	Outcome 4: Use programming languages such as Python and R to analyze both structured (tabular data) and unstructured (text data such as social media).	Outcome 5: Evaluate, select and implement AI/ML applications in portfolio management, algorithmic trading, fraud analytics, and credit scoring.
Foundtaions Course (3 Hours)						
FINANCE	6500 Financial Management	I		D		
Required (21 Hours)						
FINANCE	6503 Computer Applications in Finance	D		D		
FINANCE	6521 Financial Forensics: The Science of Derivatives			D		D
FINANCE	6570 Introduction to FinTech		I			D
FINANCE	6572 Financial Data Analytics		D		D	D
FINANCE	6574 Artificial Intelligence and Machine Learning in Finance		D		D	D
FINANCE	6576 Blockchain		D			D
FINANCE	6590 Seminar in Finance	M	M	M	M	M
ELECTIVES (6 Hours from this list)						
FINANCE	6520 Security Analysis	D		D		D
FINANCE	6540 Financial Institutions and Financial Markets	D		D		
FINANCE	6541 Commercial Bank Management	D		D		
FINANCE	6542 Real Estate	D		D		
FINANCE	6545 Venture Capital and Private Equity	D		D		
FINANCE	6580 International Financial Management	D		D		

All listed courses above are currently offered, and their descriptions are in the <u>bulletin.</u>

6. I. Financial and Professional Services Companies in St. Louis

Financial Services Firms
- Edward Jones
- Wells Fargo Advisors
- Stifel Financial
- Commerce Bank
- Bank of America
- UMB
- US Bank
- TD Ameritrade
- MasterCard
- CitiMortgage
- Cushman and Wakefield

Insurance
- Reinsurance Group of America
- Shelter Insurance
- Centene
- State Farm
- Liberty Mutual

Engineering/Architectural Firms
- Burns & McDonnell
- HOK

UMSL | Academic Affairs
University of Missouri—St. Louis

March 2, 2022

Dean Joan Phillips
College of Business Administration
University of Missouri – St. Louis
St. Louis, MO 63121

Re: Proposed MS in Financial Technology

Dear Dean Phillips,

I am writing to offer my enthusiastic support for the proposed M.S. in Financial Technology (Fintech) to be offered out of the College of Business Administration here at the University of Missouri – St. Louis. This degree program builds on the strength of courses professors in the finance area have been building for two years in response to the field changing, and I believe it will be an important area of growth for your college in the years to come.

Given the rapidly changing field of financial technology, I fully agree that we will better serve our students with a Master's degree in this area. I am impressed at the breadth and depth of courses the faculty are offering in this program, such as Financial Modeling and Computer Applications, Artificial Intelligence and Machine Learning in Finance, and a course dedicated to Blockchain. These offerings will result in a broader spectrum of job opportunities for our students after graduation and help meet the needs of the employers in the financial hub surrounding us.

With the research of faculty in this department being ranked in the top 16 nationwide, students will receive instruction from experts in the field and be fully immersed in the latest topics and trends. Also, by offering this program as a fully online program, you will be able to not only meet the needs of those in the St. Louis region, but also those across St. Louis and in more rural areas where Fintech expertise is needed but not yet widely available.

Given the prudent use of existing courses in a high-need area locally and nationwide, I fully support this M.S. in Financial Technology here at the University of Missouri – St. Louis.

Sincerely,

Steven J. Berberich
Provost and Interim Executive Vice Chancellor

UMSL|Chancellor

March 2, 2022

Dean Joan Phillips
College of Business Administration
University of Missouri – St. Louis
St. Louis, MO 63121
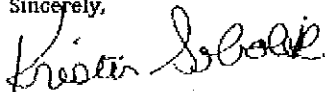
Re: Proposed MS in Financial Technology

Dear Dean Phillips,

I am writing to offer my support for the proposed M.S. in Financial Technology (Fintech) to be offered out of the College of Business Administration here at the University of Missouri – St. Louis. No other campus in our system is currently offering an graduate degree in this specialized area and since this is a growth area for both the St. Louis region and state of Missouri it is the perfect time for our university to offer this type of degree program.

This program represents an area of growth and excellence for UMSL and is anticipated to be profitable in year 1. Employment trends show that more and more companies need workers who have knowledge not only in traditional finance, but also in fintech tools such blockchain, artificial intelligence (AI), machine learning (ML), mobile payment systems, and robo-advising to keep up with the current trends. FinTech is an important <u>STL Job 2030</u> initiative as there are plans for a FinTech innovation district in downtown STL. Our graduates will be well-poised to take on high-demand jobs in the region from employers like Square Inc., Boeing, Bank of America, National City, Regions Bank, Wells Fargo, Thomas Reuters, Citi Mortgage, MasterCard, Reinsurance Group of America, and Edward Jones and this program will help fill a talent shortage need in our area.

I support this proposed M.S. in Financial Technology and believe it will be a transformative degree for workforce development in the St. Louis area.

Sincerely,

Kristin Sobolik, Ph.D.
Chancellor