The Rutgers Stackable Business Innovation (rSBI) Program
Certificate / Concentration Catalog

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The Rutgers Stackable Business Innovation (rSBI) Program
Certificate/Concentration Catalog

This catalog lists the current set of rSBI certificates (one per department), concentrations (any number within a departmental certificate) and concentration courses.

Note that this document contains a comprehensive set of all rSBI approved concentrations and courses, but not all courses listed herein will be available in any given semester.

1. rSBI Certificate in Accounting and Information Systems

1.1 Concentrations

1.1.1 Concentration Code: AIS-1

Concentration Name: Audit Analytics
Concentration STEM Designation: Yes
Concentration Can Be Potentially Converted to Fully Online: Yes
Concentration Course List: Audit Analytics (22:010:688), Special Topics in Audit Analytics (22:010:690), Information Risk Management (22:010:627), Individual Project in Audit Analytics (22:835:630)
Concentration Description: Both the first and the second courses of this concentration emphasize the usage of statistics and the interpretation of results towards a modern audit. Audit Analytics course introduces the application of audit analytics to organizations as audit evidence while Special Topics in Audit Analytics course covers some specialized audit analytic techniques such as visualization, neural networks, and text mining. In the Information Risk Management course, students will gain an in-depth understanding of the audit process and risk management. Students will develop the knowledge needed to understand how accounting information systems work, and how to evaluate such systems. The last course (Individual Project in Audit Analytics) enables students to apply what they have learned to develop a deeper understanding in the application of analytics in audit.
Sample Relevant Careers: Controller, Certified Public Accountant (CPA), Compliance Auditor, Cost Accountant, Financial Accountant, Financial Auditor, Government Auditor, Industrial Accountant, Information Technology Auditor, Internal Auditor, Management Accountant, Data Analyst, Consultant, Financial Advisor, Credit Analyst

1.1.2 Concentration Code: AIS-2

Concentration Name: Auditing and Forensic Accounting
Concentration STEM Designation: Yes
Concentration Can Be Potentially Converted to Fully Online: Yes
Concentration Course List: Auditing Concepts (22:835:604), Audit Analytics (22:010:688), Forensic Accounting (22:010:664)
Concentration Description: This concentration examines the principles and components governing management information systems with strong emphasis on the importance of internal control within the system. Audit Analytics course introduces the application of audit analytics to organizations as audit evidence. This course provides forensic accountants with skills to investigate fraud and more importantly to prevent fraud as well.
Sample Relevant Careers: Controller, Certified Public Accountant (CPA), Compliance Auditor, Financial Accountant, Financial Auditor, Forensic Accountant, Government Accountant, Government Auditor, Information Technology Auditor, Internal Auditor, Tax Accountant, Data Analyst, Consultant, Financial Advisor, Credit Analyst

1.1.3 Concentration Code: AIS-3

Concentration Name: Information Technology Audit

Concentration STEM Designation: Yes
Concentration Can Be Potentially Converted to Fully Online: Yes
Concentration Course List: Audit Analytics (22:010:688), Information Technology Audit (22:010:695), Accounting in the Digital Era (22:010:660), Individual Project in Audit Analytics (22:835:630)
Concentration Description: This concentration equips students with skills and tools required to examine and evaluate an organization's information technology infrastructure, policies, and operations. It focuses on the process of collecting and evaluating evidence to determine whether a computer system safeguards assets, maintains data integrity, and allows organizational goals to be achieved effectively using resources efficiently. Audit Analytics course introduces the application of audit analytics to organizations as audit evidence while Information Technology Audit course provides the future accounting and auditing professionals with the technologies used in Accounting Information System and related IT audit methodology. The third course provides the student with the evolution of accounting information to the digital economy. The last course (Individual Project in Audit Analytics) enables students to apply what they have learned to develop a deeper understanding in the application of analytics in audit.
Sample Relevant Careers: Certified Public Accountant (CPA), Compliance Auditor, Financial Accountant, Financial Auditor, Forensic Accountant, Government Auditor, Industrial Accountant, Information Technology Auditor, Internal Auditor, Data Analyst, Financial Advisor

1.1.4 **Concentration Code:** AIS-4
Concentration Name: Cybersecurity Assurance
Concentration STEM Designation: Yes
Concentration Can Be Potentially Converted to Fully Online: Yes
Concentration Course List: Audit Analytics (22:010:688), Auditing of Cybersecurity (22:010:685), Individual Project in Audit Analytics (22:835:630)
Concentration Description: This concentration provides students with security auditing skills and techniques to monitor and assure the security of systems and processes in organizations. The concentration explores the crossroads of auditing and technology by addressing cybersecurity issues from an auditing point of view. It provides the skills needed to manage cyber risk, regulations, cybersecurity policies and technologies.
Sample Relevant Careers: Controller, Certified Public Accountant (CPA), Compliance Auditor, Government Accountant, Government Auditor, Information Technology Auditor, Internal Auditor, Data Analyst, Consultant

1.1.5 **Concentration Code:** AIS-5
Concentration Name: Continuous Auditing
Concentration STEM Designation: Yes
Concentration Can Be Potentially Converted to Fully Online: Yes
Concentration Course List: Auditing Concepts (22:835:604), Audit Analytics (22:010:688), Continuous Auditing (22:010:696), Individual Project in Audit Analytics (22:835:630)
Concentration Description: This concentration explains the process of continuous auditing from start to finish and how to perform continuous control monitoring and risk assessment in real-time. The concentration will also demonstrate how such a solution can be implemented in an organization.

Sample Relevant Careers: Controller, Certified Public Accountant (CPA), Compliance Auditor, Financial Accountant, Financial Auditor, Government Accountant, Government Auditor, Information Technology Auditor, Internal Auditor, Management Accountant, Data Analyst, Credit Risk Officer, Consultant, Financial Advisor

1.1.6 Concentration Code: AIS-6
Concentration Name: Artificial Intelligence in Accounting and Assurance
Concentration STEM Designation: Yes
Concentration Can Be Potentially Converted to Fully Online: Yes
Concentration Course List: AI in Accounting (22:010:684), Audit Analytics (22:010:688), Continuous Auditing (22:010:696), Individual Project in Audit Analytics (22:835:630)
Concentration Description: This concentration explores the impact of these new technologies on the accounting functions and workflows, the transformations that can be predicted and automated, and the way AI will shape accounting and auditing in the future.
Sample Relevant Careers: Controller, Certified Public Accountant (CPA), Compliance Auditor, Cost Accountant, Financial Accountant, Financial Auditor, Forensic Accountant, Fund Accountant, Government Accountant, Government Auditor, Industrial Accountant, Information Technology Auditor, Internal Auditor, Management Accountant, Tax Accountant, Data Analyst, Credit Risk Officer, Consultant, Financial Advisor, Credit Analyst

1.1.7 Concentration Code: AIS-7
Concentration Name: Blockchain and Smart Contracts in Accounting
Concentration STEM Designation: Yes
Concentration Can Be Potentially Converted to Fully Online: Yes
Concentration Course List: Audit Analytics (22:010:688), Blockchain in Accounting (22:010:686), Individual Project in Audit Analytics (22:835:630), Smart Contracts Applications in Accounting (22:010:697)
Concentration Description: This concentration provides students with detailed knowledge on the potential of blockchain and smart contracts, their implications on auditors, and how the accountancy profession can benefit from them. The concentration also explores some necessary skills for the future related to blockchain and smart contracts.
Sample Relevant Careers: Controller, Certified Public Accountant (CPA), Compliance Auditor, Cost Accountant, Financial Accountant, Financial Auditor, Forensic Accountant, Fund Accountant, Government Accountant, Government Auditor, Industrial Accountant, Information Technology Auditor, Internal Auditor, Management Accountant, Data Analyst, Consultant

1.1.8 Concentration Code: AIS-8
Concentration Name: Crypto-Instruments and Their Ecosystem
Concentration STEM Designation: Yes
Concentration Can Be Potentially Converted to Fully Online: Yes
Concentration Course List: Audit Analytics (22:010:688), Blockchain in Accounting (22:010:686), Individual Project in Audit Analytics (22:835:630), Virtual Currencies, Tokens, Crypto-Lending, and Their Ecosystem (22:010:698)

Concentration Description: This concentration provides students with an introduction to the broad virtual currency world. It is designed to help students build on the basic knowledge of virtual currency environment and gain an in-depth understanding of the virtual currency ecosystem with stable-coins, debt instruments, tokens, etc. It will help students to use analytic instruments, measurement, and assurance in the area. It will provide knowledge needed to understand how it will likely impact accounting, auditing, finance, and the economy in the future.

Sample Relevant Careers: Controller, Certified Public Accountant (CPA), Compliance Auditor, Cost Accountant, Financial Accountant, Financial Auditor, Forensic Accountant, Fund Accountant, Government Accountant, Government Auditor, Industrial Accountant, Information Technology Auditor, Internal Auditor, Management Accountant, Data Analyst, Consultant

1.2 Rutgers Stackable Business Innovation Program Certificate

Students enrolled in the rSBI program are eligible to earn an RBS certificate without a designated concentration. The *Rutgers Stackable Business Innovation Program Certificate* is flexible and does not require the student to complete specific courses under a concentration. Rather, the student can choose any courses from the rSBI catalog and must successfully complete a total of at least 9 credits to earn the certificate. To earn multiple such certificates, the student must successfully complete disjoint sets of courses across certificates (no repeat courses).

1.3 Courses

1.3.1

Course Number: 22:835:604
Course Name: Auditing Concepts
Prerequisites: Accounting for Managers
Credits: 3
Course STEM Designation: Yes
Delivery Mode: Online
Offered By: MBA in Professional Accounting
Programs Potentially Accepting Credit Transfer: MBA in Professional Accounting, MAACY in Professional Accounting, MBA
Available By: Now
Course Description: This course examines the principles and components governing management information systems with strong emphasis on the importance of internal control within the system. Illustrates the role of the computer in accounting and general information systems and accounting transactions processing, environment of information systems, designing new system controls, flowcharting, management, designing computer-oriented controls, systems analysis, design, implementation, and follow-up principles of systems design and standards of internal control.
Sample Relevant Careers: Controller, Certified Public Accountant (CPA), Financial Auditor, Forensic Accountant, Government Auditor, Industrial Accountant, Information Technology Auditor, Internal Auditor, Consultant

1.3.2 **Course Number:** 22:010:627
Course Name: Information Risk Management
Prerequisites: None
Credits: 3
Course STEM Designation: Yes
Delivery Mode: Online
Offered By: MACCY in Financial Accounting
Programs Potentially Accepting Credit Transfer: MAACY in Professional Accounting, MBA in Professional Accounting, MBA
Available By: Now
Course Description: An introduction to the advanced concepts underlying information risk management. This course aims to build on the basic principles of auditing and information risk management. Students will gain an in-depth understanding of the audit process and risk management. Additionally, students will develop the knowledge needed to understand how accounting information systems work, and how to evaluate such systems. Students learn to assess the reliability of information that is both captured and disseminated by such systems, as well as the threats and risks unique to computer information security.
Sample Relevant Careers: Controller, Certified Public Accountant (CPA), Compliance Auditor, Information Technology Auditor, Internal Auditor, Data Analyst, Credit Risk Officer, Consultant, Financial Advisor, Credit Risk Officer

1.3.3 **Course Number:** 22:835:630
Course Name: Individual Project in Audit Analytics
Prerequisites: None
Credits: 3
Course STEM Designation: Yes
Delivery Mode: Online
Offered By: MACCY in Financial Accounting
Programs Potentially Accepting Credit Transfer: MAACY in Financial Accounting, MBA in Professional Accounting
Available By: Now
Course Description: The capstone course in the Audit Analytics line of study. Students participate in an individual study project with an advisor. Students will apply what they have learned to develop a deeper understanding in the application of analytics in audit. At the end of the course the student will have conducted a novel research project that will involve applying analytics in an audit related setting.
Sample Relevant Careers: Certified Public Accountant (CPA), Compliance Auditor, Financial Auditor, Forensic Accountant, Information Technology Auditor, Internal Auditor, Management Accountant, Tax Accountant, Data Analyst, Credit Risk Officer, Consultant, Financial Advisor, Credit Analyst

1.3.4 **Course Number:** 22:010:660
Course Name: Accounting in the Digital Era
Prerequisites: None

Credits: 3
Course STEM Designation: Yes
Delivery Mode: Online
Offered By: MACCY in Financial Accounting
Programs Potentially Accepting Credit Transfer: MACCY in Financial Accounting, MBA in Professional Accounting, MBA
Available By: Now
Course Description: This course provides the student with the evolution of accounting information to the digital economy. It explores the migration of the economy to a real time economy and the electronization of business as well as the globalization of business. Enabling and emerging technologies provide the student with an awareness of the future of accounting, reporting and auditing in the digital age. Technologies and the Sarbanes-Oxley Act provide an understanding about future methodologies that address compliance with the Act.
Sample Relevant Careers: Controller, Certified Public Accountant (CPA), Compliance Auditor, Cost Accountant, Financial Accountant, Financial Auditor, Forensic Accountant, Government Accountant, Government Auditor, Industrial Accountant, Information Technology Auditor, Internal Auditor, Management Accountant, Data Analyst, Credit Risk Officer, Consultant, Financial Advisor, Credit Analyst

1.3.5 **Course Number:** 22:010:664
Course Name: Forensic Accounting
Prerequisites: None
Credits: 3
Course STEM Designation: Yes
Delivery Mode: Online
Offered By: MACCY in Financial Accounting
Programs Potentially Accepting Credit Transfer: MACCY in Financial Accounting, MBA in Professional Accounting, MBA
Available By: Now
Course Description This course will provide you with a comprehensive background to the means, motives and opportunities that give rise to fraud. The ethical dimensions of the fraud examiner's role are presented. The course further covers recognition of the symptoms of fraud, means of fraud prevention, and methods of uncovering frauds by, and against, organizations. Frauds by and against organizations include financial statement, revenue and inventory, balance sheet-based fraud, and consumer fraud. Bankruptcy, divorce, and e-commerce frauds are also covered.
Sample Relevant Careers: Controller, Certified Public Accountant (CPA), Compliance Auditor, Financial Accountant, Financial Auditor, Forensic Accountant, Information Technology Auditor, Internal Auditor, Data Analyst, Consultant, Financial Advisor, Credit Analyst

1.3.6 **Course Number:** 22:010:684
Course Name: AI in Accounting and Assurance
Prerequisites: None
Credits: 3
Course STEM Designation: Yes

Delivery Mode: Online
Offered By: MACCY in Financial Accounting
Programs Potentially Accepting Credit Transfer: MACCY in Financial Accounting, MBA in Professional Accounting, MBA
Available By: Now
Course Description: This course reviews the nature of accounting and auditing problems and the need for application of artificial intelligence technologies to the discipline. This includes current accounting issues for which new AI development should be fruitful, particularly auditing and assurance.
Sample Relevant Careers: Controller, Certified Public Accountant (CPA), Compliance Auditor, Cost Accountant, Financial Accountant, Financial Auditor, Forensic Accountant, Fund Accountant, Government Accountant, Government Auditor, Industrial Accountant, Information Technology Auditor, Internal Auditor, Management Accountant, Tax Accountant, Data Analyst, Credit Risk Officer, Consultant, Financial Advisor, Credit Analyst

1.3.7 **Course Number:** 22:010:685
Course Name: Cybersecurity Assurance
Prerequisites: None
Credits: 3
Course STEM Designation: Yes
Delivery Mode: Online
Offered By: MACCY in Financial Accounting
Programs Potentially Accepting Credit Transfer: MACCY in Financial Accounting, MBA in Professional Accounting, MBA
Available By: Now
Course Description: This course provides an understanding of cybersecurity concepts that can be used to facilitate integrated audit efforts within organizations. This course also examines preventive, detective, and corrective controls, and how to apply the audit process to a cloud environment. Students will also be exposed to the mobile environment and cyber standards, as well as learn how to audit common security solutions.
Sample Relevant Careers: Controller, Certified Public Accountant (CPA), Compliance Auditor, Government Accountant, Government Auditor, Information Technology Auditor, Internal Auditor, Data Analyst, Consultant

1.3.8 **Course Number:** 22:010:686
Course Name: Blockchain in Accounting
Prerequisites: None
Credits: 3
Course STEM Designation: Yes
Delivery Mode: Online
Offered By: MACCY in Financial Accounting
Programs Potentially Accepting Credit Transfer: MACCY in Financial Accounting, MBA in Professional Accounting, MBA
Available By: Now

Course Description: This course provides a broad overview of the essential concepts of blockchain technology to lay the foundation necessary for applying it to accounting. It also includes the benefits, values and opportunities of blockchain in accounting, and the risks and challenges of implementing this technology in accounting.
Sample Relevant Careers: Controller, Certified Public Accountant (CPA), Compliance Auditor, Cost Accountant, Financial Accountant, Financial Auditor, Forensic Accountant, Fund Accountant, Industrial Accountant, Information Technology Auditor, Internal Auditor, Management Accountant, Tax Accountant, Product Manager, Data Analyst, Credit Risk Officer, Consultant, Financial Advisor, Credit Analyst

1.3.9 **Course Number:** 22:010:688
Course Name: Audit Analytics
Prerequisites: None
Credits: 3
Course STEM Designation: Yes
Delivery Mode: Online
Offered By: MACCY in Financial Accounting
Programs Potentially Accepting Credit Transfer: MACCY in Financial Accounting, MBA in Professional Accounting, MBA
Available By: Now
Course Description: This is the first course of the Audit Analytics Certificate Program. There are two main purposes of this course: (1) introduce the basic application of analytics to both internal and external audit processes in current ubiquitous computer-based information systems, and (2) introduce the application of audit analytics to organizations. This course emphasizes the usage of statistics and the interpretation of results to be used as audit evidence. It is designed to impart the theory and practice of the foundational statistical techniques applied in an audit.
Sample Relevant Careers: Certified Public Accountant (CPA), Compliance Auditor, Financial Auditor, Information Technology Auditor, Internal Auditor, Management Accountant, Tax Accountant, Data Analyst, Credit Risk Officer, Consultant, Financial Advisor, Credit Analyst

1.3.10 **Course Number:** 22:010:690
Course Name: Special Topics in Audit Analytics
Prerequisites: None
Credits: 3
Course STEM Designation: Yes
Delivery Mode: Online
Offered By: MACCY in Financial Accounting
Programs Potentially Accepting Credit Transfer: MACCY in Financial Accounting, MBA in Professional Accounting, MBA
Available By: Now
Course Description: This is the second course of Audit Analytics, which serves the purpose of further improving students' analytic skills and promoting changes in the profession towards a modern audit. The course consists of two parts: methodology and practice. The first part of the course is intended to develop students' understanding of statistical inference. Students will learn

how to apply some basic statistical models to the auditing problems, how to interpret the results, and troubleshoot some common problems. The second part of the course covers some specialized audit analytic techniques such as visualization, neural networks, and text mining.

Sample Relevant Careers: Certified Public Accountant (CPA), Compliance Auditor, Financial Auditor, Information Technology Auditor, Internal Auditor, Management Accountant, Tax Accountant, Data Analyst, Credit Risk Officer, Consultant, Financial Advisor, Credit Analyst

1.3.11 **Course Number**: 22:010:695

Course Name: Information Technology Audit

Prerequisites: None

Credits: 3

Course STEM Designation: Yes

Delivery Mode: Online

Offered By: MACCY in Financial Accounting

Programs Potentially Accepting Credit Transfer: MACCY in Financial Accounting, MBA in Professional Accounting, MBA

Available By: Now

Course Description: The course adds to the knowledge of future accounting and auditing professionals who have taken the prerequisite course, "Auditing," by familiarizing them with the technologies used in Accounting Information System and related IT audit methodology. The emphasis of this course is on assisting students in (1) obtaining an understanding of the risks associated with key aspects of information systems including: operating systems security, databases, networks, and systems development, and the audit role of Computer Assisted Audit Tools and Techniques (CAATTs); and (2) having a working command of ACL in performing standard function tests and fraud detection.

Sample Relevant Careers: Controller, Certified Public Accountant (CPA), Compliance Auditor, Information Technology Auditor, Internal Auditor, Financial Auditor, Government Auditor, Data Analyst, Consultant, Financial Advisor

1.3.12 **Course Number**: 22:010:696

Course Name: Continuous Auditing

Prerequisites: None

Credits: 3

Course STEM Designation: Yes

Delivery Mode: Online

Offered By: MACCY in Financial Accounting

Programs Potentially Accepting Credit Transfer: MACCY in Financial Accounting, MBA in Professional Accounting, MBA

Available By: Now

Course Description: This course offers a methodology for implementing continuous auditing along with critical success factors. By the end of the course, the learner will be able to define continuous auditing and how it differs from continuous monitoring. The student will learn to identify the benefits of continuous auditing and possible pitfalls if it is not properly implemented,

and to identify the steps in implementing continuous auditing: Plan, Acquire & Validate, Test & Report, and Maintain.
Sample Relevant Careers: Controller, Certified Public Accountant (CPA), Compliance Auditor, Financial Accountant, Financial Auditor, Government Accountant, Government Auditor, Information Technology Auditor, Internal Auditor, Management Accountant, Data Analyst, Credit Risk Officer, Consultant, Financial Advisor

1.3.13 **Course Number:** 22:010:697
Course Name: Smart Contracts Applications in Accounting
Prerequisites: None
Credits: 3
Course STEM Designation: Yes
Delivery Mode: Online
Offered By: MACCY in Financial Accounting
Programs Potentially Accepting Credit Transfer: MACCY in Financial Accounting, MBA in Professional Accounting, MBA
Available By: Now
Course Description: Smart contracts are a powerful feature which, when properly designed and coded, can result in autonomous, efficient, and transparent systems. This course covers the basic concepts of smart contracts and provides students with knowledge about designing and executing a smart contract. Additionally, this course explores various applications of smart contracts in the accounting and auditing fields.
Sample Relevant Careers: Controller, Certified Public Accountant (CPA), Compliance Auditor, Cost Accountant, Financial Accountant, Financial Auditor, Forensic Accountant, Fund Accountant, Government Accountant, Government Auditor, Industrial Accountant, Information Technology Auditor, Internal Auditor, Management Accountant, Data Analyst, Consultant

1.3.14 **Course Number:** 22:010:698
Course Name: Virtual Currencies, Tokens, Crypto-Lending, and Their Ecosystem
Prerequisites: None
Credits: 3
Course STEM Designation: Yes
Delivery Mode: Online
Offered By: MACCY in Financial Accounting
Programs Potentially Accepting Credit Transfer: MACCY in Financial Accounting, MBA in Professional Accounting, MBA
Available By: Now
Course Description: The goal of this course is to introduce the broad virtual currency world. This course is designed to help students build on the basic knowledge of virtual currency environment and gain an in-depth understanding of the virtual currency mechanism. This course helps the student develop knowledge needed to understand how they will likely impact accounting, finance, and the economy significantly in the future.
Sample Relevant Careers: Controller, Certified Public Accountant (CPA), Compliance Auditor, Cost Accountant, Financial Accountant, Financial Auditor, Forensic Accountant, Fund Accountant,

Government Accountant, Government Auditor, Industrial Accountant, Information Technology Auditor, Internal Auditor, Management Accountant, Data Analyst, Consultant

2. rSBI Certificate in Finance and Economics

2.1 Concentrations

2.1.1 Concentration Code: FE-1

Concentration Name: Financial Data Analytics and FinTech
Concentration STEM Designation: Yes
Concentration Can Be Potentially Converted to Fully Online: No
Concentration Course List: Blockchain and Cryptocurrency (22:839:635), Machine Learning in Finance and Economics (22:839:636), Financial Forecasting and Simulation (22:839:637)
Concentration Description: This concentration introduces students to the use of financial analytics used by the finance practitioners. It provides a strong and rigorous introduction to the use of financial applications in fintech and machine learning.
Sample Relevant Careers: Quantitative Financial Analyst, Model Validation Specialist, Data Scientist, Model Risk Review Specialist, Quantitative Risk Associate, Credit Analyst, Financial Engineer, Data Engineer

2.1.2 Concentration Code: FE-2

Concentration Name: New Technologies in Commercial Real Estate
Concentration Course List: Real Estate Finance (22:390:695), Real Estate Law (22:851:650), Market Analysis and Valuation in Real Estate (22:851:630), Real Estate Development (22:851:632)
Concentration STEM Designation: No
Concentration Can Be Potentially Converted to Fully Online: No
Concentration Description: This concentration serves two objectives. First, students will analyze investment opportunities in commercial property markets using market, property, and lease information. Their analysis will be aided by using leading-edge tools and technology such as CoStar and ARGUS. The second objective involves an in-depth study of real estate market analysis followed by a use of these tools, combined with a basic understanding of real estate law and negotiation, to analyze and value development opportunities.
Sample Relevant Careers: Real Estate Development Associate, Equity Analyst, Investment Manager, Commercial Loan Officer

2.2 Rutgers Stackable Business Innovation Program Certificate

Students enrolled in the rSBI program are eligible to earn an RBS certificate without a designated concentration. The *Rutgers Stackable Business Innovation Program Certificate* is flexible and does not require the student to complete specific courses under a concentration. Rather, the student can choose any courses from the rSBI catalog and must successfully complete a total of at least 9 credits to earn the certificate. To earn multiple such certificates, the student must successfully complete disjoint sets of courses across certificates (no repeat courses).

2.3 Concentration Courses

2.3.1 **Course Number:** 22:851:630
Course Name: Market Analysis and Valuation in Real Estate
Prerequisites: Real Estate Finance (22:390:695)
Credits: 3
Course STEM Designation: No
Delivery Mode: In-person
Offered By: MBA
Programs Potentially Accepting Credit Transfer: MBA
Available By: Fall 2020
Course Description: This course explores the sources of property information and market data used in studies of real estate markets, and provides an in-depth analysis of trends, market activity, sales, lending, and leasing. The course includes analysis of both residential and commercial real estate and covers demographic analysis, regional growth, construction cycles, urban land markets and location theory. Exercises and applications focus on estimating and predicting property demand, supply, vacancy, and value using modeling in economics, statistical machine learning and agent-based machine learning.
Sample Relevant Careers: Real Estate Development Associate, Equity Analyst, Investment Manager, Commercial Loan Officer

2.3.2 **Course Number:** 22:851:632
Course Name: Real Estate Development
Prerequisites: Real Estate Finance (22:390:695) and Real Estate Law (22:851:650)
Course STEM Designation: No
Credits: 3
Delivery Mode: In-person
Offered By: MBA
Programs Potentially Accepting Credit Transfer: MBA
Available By: Fall 2020
Course Description: This course overviews real estate development of urban places, including the many challenges of the development process such as analyzing market sectors and development opportunities, comprehending the development context of regulation, public policy and politics, raising investment capital, assembling land, program formulation, building types, construction management, marketing, and sales. Examples of development projects will be presented, each focusing on specific aspects of the process. Students will learn how to access and harvest online information to understand environmental and legal challenges to real estate redevelopment.
Sample Relevant Careers: Real Estate Development Associate, Equity Analyst, Investment Manager, Commercial Loan Officer

2.3.3 **Course Number:** 22:839:635
Course Name: Blockchain and Cryptocurrency
Prerequisites: Knowledge of Python
Credits: 3

Course STEM Designation: Yes
Delivery Mode: In-person, online
Offered By: MS in Quantitative Finance
Programs Potentially Accepting Credit Transfer: MS in Quantitative Finance, MBA
Available By: Fall 2020
Course Description: Assuming the students have no prior knowledge in the cryptocurrency and blockchain space, it is important to introduce basic concepts and an overview of the blockchain landscape. Furthermore, the course will explain blockchain and crypto market microstructure concepts and then we will introduce students to different data sources of both blockchain data and crypto market data. As a blockchain data scientist or a cryptocurrency analyst you would need to analyze data and understand the present and future value and risk of the blockchain project and/or the cryptocurrency, similar to analyzing any company or financial instrument.
Sample Relevant Careers: Quantitative Financial Analyst, Model Validation Specialist, Data Scientist, Model Risk Review Specialist, Quantitative Risk Associate, Credit Analyst, Financial Engineer, Data Engineer

2.3.4 **Course Number:** 22:839:636
Course Name: Machine Learning in Finance and Economics
Prerequisites: Investment Analysis (22:390:603 or 22:839:603), and ability to write non-trivial code in Matlab and Python.
Credits: 3
Course STEM Designation: Yes
Delivery Mode: In Person
Offered By: MS in Quantitative Finance
Programs Potentially Accepting Credit Transfer: MS in Quantitative Finance, MBA
Available By: Fall 2020
Course Description: The course has three parts. The first part introduces fundamentals and traditional machine learning techniques including cross validation, regularization, regression trees, ensemble methods, random forests, and gradient boosting. Python libraries scikit-learn ('sklearn') and XGBoost will be used. The second part will provide an introduction to Deep Learning. Instead of treating deep neural networks as just another powerful algorithms, we will emphasize what they make possible in financial applications that are difficult or impossible to achieve with earlier methods. Keras and Tensorflow will be used. Cloud computing will also be introduced to facilitate data management and training of these models. The third part of the course is more experiential. Small student teams will work on projects to apply the techniques covered in the course. Projects will use real data and attempt to solve real problems faced in the financial industry. The students will have flexibility to choose their topic based on their interest. Applications may focus on asset return predictions, credit risk, mergers, and real estate values, among others.
Sample Relevant Careers: Quantitative Financial Analyst, Model Validation Specialist, Data Scientist, Model Risk Review Specialist, Quantitative Risk Associate, Credit Analyst, Financial Engineer, Data Engineer

2.3.5 **Course Number:** 22:839:637
Course Name: Financial Forecasting and Simulation

Prerequisites: Ability to write non-trivial code in Matlab and Python. Basic calculus, linear algebra, probability and statistics, and econometrics.
Credits: 3
Course STEM Designation: Yes
Delivery Mode: In Person
Offered By: MS in Quantitative Finance
Programs Potentially Accepting Credit Transfer: MS in Quantitative Finance, MBA
Available By: Spring 2020
Course Description: Forecasts of financial variables play a prominent role in financial and business decision-making. This course provides an overview of modern statistical and econometric methods for predicting financial variables and evaluating forecasts. Students will develop an understanding of the basic components of a forecasting model, how to build their own forecasting models, and how to evaluate the performance of forecasting models. We emphasize intuitive understanding of the basic concepts and techniques and practical applications to real-world data. Topics covered include linear projections; modeling and forecasting trend, seasonality and cycles; AR, MA, ARMA, ARIMA, and VAR models; forecasting with fundamentals; conditional forecasting models and scenarios analysis (stress testing); evaluating and combining forecasts; unit roots, cointegration and stochastic trends; smoothing and shrinkage; ARCH, GARCH and volatility forecast; unobserved components models and Kalman filter forecasting; data snooping, bootstrap, and reality check.
Sample Relevant Careers: Quantitative Financial Analyst, Model Validation Specialist, Data Scientist, Model Risk Review Specialist, Quantitative Risk Associate, Credit Analyst, Financial Engineer, Data Engineer

2.3.6 **Course Number:** 22:851:650
Course Name: Real Estate Law
Prerequisites: None
Credits: 3
Course STEM Designation: No
Delivery Mode: In-person
Offered By: MBA
Programs Potentially Accepting Credit Transfer: MBA
Available By: Fall 2020
Course Description: This course provides an overview of the legal issues which confront the real estate executive from the commencement of a real estate transaction and throughout the relationship between the parties to such transactions. In addition to many standard real property law concepts will be covered, the course will focus on the transactional aspects of the real estate business, including acquisition, disposition, development, investment, management, leasing, tax implications and negotiations. The course will further emphasize the challenges new technologies influence legal processes as employed in property markets.
Sample Relevant Careers: Real Estate Development Associate, Equity Analyst, Investment Manager, Commercial Loan Officer

2.3.7 **Course Number:** 22:390:695
Course Name: Real Estate Finance

Prerequisites: Ability to understand and apply discounted cash flow analysis.
Credits: 3
Course STEM Designation: No
Delivery Mode: In-person
Offered By: MBA
Programs Potentially Accepting Credit Transfer: MBA
Available By: Fall 2020
Course Description: The central objective of this course is to provide students with the background and tools necessary to analyze property markets from the perspective of an institutional investor. This involves acquiring and using market and property related information to develop projections of the expected future cash flows generated by a given property and using them to construct measures of value, risk, and return. The impact of new lending and leasing platforms on property markets will also be considered. The course provides extensive training and certification in ARGUS, a real estate industry-specific program used for entering and compiling market, property, and lease information.
Sample Relevant Careers: Real Estate Development Associate, Equity Analyst, Investment Manager, Commercial Loan Officer

3. rSBI Certificate in Management and Global Business

3.1 Concentrations

3.1.1 Concentration Code: MGB-1

Concentration Name: Managing in the Global Business Environment
Concentration STEM Designation: Yes
Concentration Can Be Potentially Converted to Fully Online: Yes
Concentration Course List: International Business (22:553:593), Global Management Strategy (22:553:621), Leading Across Cultures (22:620:648), International Business in the Digital World (22:553:625)
Concentration Description: In the increasingly global economy, firms need leaders, who understand the challenges and opportunities of the highly competitive global marketplace, are able to operate effectively anywhere in the world, master cross-cultural relationships, and create and implement strategies that help exploit the opportunities available all around the world. The certificate concentration in "Managing in the Global Business Environment" equips learners (MBA students and executives) with the skills and tools required for becoming effective leaders of multinational corporations.
Sample Relevant Careers: Global Business Development Manager, Global Merchandizing Manager, Global Risk Analyst, International Trade Specialist, Director of International Expansion, Strategy Lead, Analytics Lead, Foreign Subsidiary Manager, Global Supply Chain Manager, Offshoring-Outsourcing Manager, International Agency Manager, NGO Manager

3.1.2 Concentration Code: MGB-2

Concentration Name: Digital Strategies and Leadership
Concentration STEM Designation: Yes
Concentration Can Be Potentially Converted to Fully Online: Yes
Concentration Course List: Strategic Management (22:620:588), Strategic Management for Digital Transformations (22:620:695), Management of Innovation and Technology (22:620:601), Leading in the Digital Economy (22:620:696), International Business in the Digital World (22:553:625), Ethics Challenges in the Digital Economy (22:620:697)
Concentration Description: The Digital Strategies and Leadership concentration equips students with skills and tools required to be effective leaders of firms competing in an increasingly digital economy. This concentration focuses on how firms can leverage digital strategies to enhance competitive advantage, the process of transforming organizations to better adapt to the digital economy, the benefits and difficulties of managing organizations and people increasingly reliant on digital technologies, and how to deal with the ethical issues that arise from new digital technologies.
Sample Relevant Careers: Business Intelligence Manager, Consumer Experience Manager, E-Recruitment Manager, Virtual Reality Manager, Visual Data Manager, Influencer Marketing Manager, Chief Data Scientist, Growth Hacking Manager

3.1.3 Concentration Code: MGB-3

Concentration Name: Corporate Social Innovation

Concentration STEM Designation: No
Concentration Can Be Potentially Converted to Fully Online: Yes
Concentration Course List: Introduction to Corporate Social Innovation (22:620:590), Social Entrepreneurship and Innovation (22:620:674) or Management of Innovation & Technology (22:620:601) or Managing Growing Ventures (22:620:654), Reporting and Measuring Corporate Social Performance and Innovation (22:010:668)
Concentration Description: As an ever-increasing number of businesses step up to address the great challenges of our time, significant opportunities for social innovation are rising to the fore. More and more businesses are discovering new ways to thrive and prosper at the same time as they address some of the world's most intractable social and ecological problems. The ability to innovate is now seen as a key driver of business success and is an essential capacity for companies to sustain their competitive advantage. Many leading corporations are beginning to bring social innovation into the heart of their economic, social and environmental strategic priorities, plans, and goals. This concentration prepares the leaders of today and tomorrow to create profitable and sustainable business opportunities, motivating and equipping them to innovate, disrupt, and reinvent their businesses to serve all their stakeholders, and society at large.
Sample Relevant Careers: Sustainability Manager, Social Impact Manager, Business Innovation Manager, Partnerships Manager, Employee Communications Lead, Social Responsibility Manager, Global Sustainability Analyst, Corporate Social Responsibility Analyst, Corporate Affairs Manager, Partnerships and Programs Manager, Culture and Community Coordinator

3.1.4 **Concentration Code:** MGB-4
Concentration Name: Social Entrepreneurship
Concentration STEM Designation: No
Concentration Can Be Potentially Converted to Fully Online: Yes
Concentration Course List: Introduction to Corporate Social Innovation (22:620:590), Social Entrepreneurship and Innovation (22:620:674) or Management of Innovation & Technology (22:620:601) or Managing Growing Ventures (22:620:654), Grant Writing and Grants Management (20:834:575) or Collaborative Governance (20:834:505)
Concentration Description: Social entrepreneurship is an emerging field that crosses public and private boundaries. This joint RBS/SPAA Certificate describes the fundamental background of the world's most intractable social and ecological problems. This certificate prepares the leaders of today and tomorrow to start for-profit or nonprofit enterprises to develop, fund, and implement solutions to a wide range of social, cultural, or environmental issues, and to lead broader social changes in areas such as poverty alleviation, health care, and community development. Students will learn the basics of entrepreneurship from both a theoretical and practical perspective and in the context of both for-profit and nonprofit enterprises.
Sample Relevant Careers: Nonprofit Manager, Social Impact Manager, Innovation Manager, Programs Manager, Culture and Community Coordinator

3.2 Rutgers Stackable Business Innovation Program Certificate

Students enrolled in the rSBI program are eligible to earn an RBS certificate without a designated concentration. The *Rutgers Stackable Business Innovation Program Certificate* is flexible and

does not require the student to complete specific courses under a concentration. Rather, the student can choose any courses from the rSBI catalog and must successfully complete a total of at least 9 credits to earn the certificate. To earn multiple such certificates, the student must successfully complete disjoint sets of courses across certificates (no repeat courses).

3.3 Concentration Courses

3.3.1 **Course Number:** 20:834:505
Course Name: Collaborative Governance
Prerequisites: No
Credits: 3
Course STEM Designation: No
Delivery Mode: In-person, online
Offered By: MPA
Programs Potentially Accepting Credit Transfer: Master of Public Administration (MPA)
Available By: Now
Course Description: U.S. federalism is the constitutional division of powers between federal and state governments. The course addresses intergovernmental relations (the interaction among federal, state, and more than 80,000 state-created county, municipal, and special district governments), and intersectoral collaboration (bringing partners together from different sectors to work collectively on a common issue). Through the "hollowing out" of the state, public services are increasingly provided by private and nonprofit organizations through grants and contracts. This complex intersectoral network is characterized by cooperation and conflict in managing the delivery of public services such as education, public safety, and health care. Students will understand the unique roles of federal, state, and local governments, and how to manage the provision of public goods and services by private for-profit and nonprofit organizations.
Sample Relevant Careers: Program Manager, Development Officer, Community Development Manager, Nonprofit Administrator, Public Relation Specialist

3.3.2 **Course Number:** 20:834:575
Course Name: Grant Writing and Grants Management
Prerequisites: No
Credits: 3
Course STEM Designation: No
Delivery Mode: In-person, online
Offered By: Master of Public Administration (MPA)
Programs Potentially Accepting Credit Transfer: Master of Public Administration (MPA)
Available By: Now
Course Description: Students will learn how to seek, solicit, and manage grant awards from foundation and government sources to support public and nonprofit programs and projects. The course focuses on the strategies and process of writing effective grant proposals. Students are guided through the development of a grant proposal and will explore topics that include searching for funding sources, writing compelling need statements, establishing goals for funding, developing

SMART objectives for evaluation, and creating budget documents to support grant applications. Students complete multiple written assignments that culminate in a final grant proposal document.
Sample Relevant Careers: Grants Manager, Development Officer, Financial Manager, Fundraising Specialist

3.3.3 **Course Number:** 22:620:588
Course Name: Strategic Management
Prerequisites: None
Credits: 2
Course STEM Designation: Yes
Delivery Mode: In-person
Offered By: MBA
Programs Potentially Accepting Credit Transfer: MBA
Available By: Fall 2020
Course Description: This course provides an overview of tools and analytical techniques managers use to achieve competitive advantage and deliver superior performance of their firms. We use real world cases to analyze firms' external political, economic, sociocultural, technological, and competitive environments and firms' internal resources to identify and choose superior competitive position that results in a sustainable competitive advantage.
Sample Relevant Careers: Strategic Programs Manager, Corporate Strategy Lead, Strategy and Operations Lead, Project Manager; Strategic Initiative Manager, Change Management Manager, Strategic Planning Manager, Global Business Analyst, Business Strategy and Planning Manager, Strategic Deals and Partnerships Manager, Strategic Innovation Manager

3.3.4 **Course Number:** 22:620:590
Course Name: Introduction to Corporate Social Innovation
Prerequisites: None
Credits: 3
Course STEM Designation: No
Delivery Mode: In-person, online
Offered by: MBA
Programs Potentially Accepting Credit Transfer: MBA
Available by: Fall 2021
Course Description: This course helps prepare leaders of today and tomorrow to create profitable and sustainable business opportunities in a world undergoing massive and transformational change. The course provides an overview of "mission driven" and responsibility-centered business practices. Using case studies, guest speakers, group projects and course readings, students will gain broad understanding of the many ways they can pursue positive, innovative, and sustainable change, while developing the skills, knowledge, and practices for building innovative organizations that contribute to solving complex social, ecological, and economic problems.
Sample Relevant Careers: Sustainability Manager, Social Impact Manager, Innovation Manager, Partnerships Manager, Employee Communications Lead, Global Sustainability Analyst, Corporate Social Responsibility Manager, Corporate Affairs Manager, Programs Manager, Culture and Community Coordinator

3.3.5 **Course Number:** 22:553:593
Course Name: International Business
Prerequisites: None
Credits: 2
Course STEM Designation: Yes
Delivery Mode: In-person
Offered By: MBA
Programs Potentially Accepting Credit Transfer: MBA
Available By: Fall 2020
Course Description: This course introduces both the macro- and micro-level aspects of international business operations. We begin the course with a discussion on recent trends in globalization. We then move on to discuss the country level differences, the trade environment and the global monetary system affecting international operations of a firm. The balance of the course discusses firm level strategies pertaining to international business operations. The course will equip participants to analyze the different factors of the global environment that affect operations and strategies of multinational corporations.
Sample Relevant Careers: Global Risk Analyst, International Trade Specialist, International Expansion Manager, Strategy and Analytics Lead, Foreign Subsidiary Manager, Offshoring-Outsourcing Manager, International Agency Manager, NGO Manager

3.3.6 **Course Number:** 22:620:601
Course Name: Management of Innovation and Technology
Prerequisites: None
Credits: 3
Course STEM Designation: Yes
Delivery Mode: In-person
Offered By: MBA
Programs Potentially Accepting Credit Transfer: MBA
Available By: Fall 2020
Course Description: This course provides an introduction to the strategic management of technology and innovation. The course has three broad goals. The first is to understand the strategic dynamics of technology markets, with a particular focus on new strategies emerging in the digital economy. Second, we will examine how firms— both in the technology sector and outside—can leverage new emerging technologies to accelerate innovation and enhance competitive advantage. Finally, we will discuss how organizations can structure and manage the process of innovation, and how new digital technologies shape the organization of work.
Sample Relevant Careers: Product manager, Business Analyst, Strategy Consultant, IT Consultant, Project Manager, Angel Investor, Data Analyst, Information Technology Manager

3.3.7 **Course Number:** 22:553:621
Course Name: Global Management Strategy
Prerequisites: None
Credits: 3

Course STEM Designation: Yes
Delivery Mode: In-person
Offered By: MBA
Programs Potentially Accepting Credit Transfer: MBA
Available By: Fall 2020
Course Description: This course introduces tools to evaluate opportunities and challenges involved in conducting business in a dynamic global environment. We examine the nature of global industries and global competition to assist managers in formulating and executing successful global strategies and help them leverage cross-country differences. Strategic decisions addressed in this course include the choice of appropriate international expansion strategies such as exports, alliances, joint ventures, cross-border mergers and acquisitions, and green field investments. We also discuss strategies to deal with the increased complexity of managing a business located in multiple countries, to achieve competitive costs and market penetration, and to enhance innovation and performance of global operations.
Sample Relevant Careers: Global Business Development Manager, Global Merchandizing Manager, International Operations Specialist, Foreign Subsidiary Manager, Global Supply Chain Manager, Offshoring-Outsourcing Manager, International Agency Manager, NGO Manager

3.3.8 **Course Number:** 22:553:625
Course Name: International Business in the Digital World
Prerequisites: None
Credits: 1
Course STEM Designation: Yes
Delivery Mode: Hybrid, online
Offered By: MBA
Programs Potentially Accepting Credit Transfer: None
Available By: Fall 2020
Course Description: The context of international business is rapidly changing with the emergence of new organizational forms such as platform organizations and new technologies such as Blockchain. These developments challenge the way multinational firms are structured and managed across different countries. Digital and platform organizations could overcome the risks and challenges of operating in foreign locations with the help from technology such as Blockchain which provide a more secure and risk-free platform for conducting business. This course introduces students to the potential of new technologies to overcome the challenges of operating in the global environment.
Sample Relevant Careers: International Logistics Specialist, Online Operations Technology Lead, Global Risk Analyst

3.3.9 **Course Number:** 22:620:648
Course Name: Leading Across Cultures
Prerequisites: None
Credits: 3
Course STEM Designation: No
Delivery Mode: In-person

Offered By: MBA
Programs Potentially Accepting Credit Transfer: None
Available By: Fall 2020
Course Description: This course is designed to address the needs of executives with leadership and/or senior management responsibilities in global businesses. It focuses on the uniquely different aspects of leading a multinational organization across different cultures and interacting with a globally dispersed workforce. Many businesses today do not grant full autonomy to their foreign-based subsidiaries, choosing instead to centralize decision-making using a global or transnational strategic platform while implementing these strategies at a global, regional, and local level. This approach requires leaders with global responsibilities to understand the cultural differences that exist in various regions and countries in which they operate and the implications of those cultural differences in making and implementing strategic decisions regarding marketing strategies, operations/supply chain strategies, HR strategies, including hiring and engaging key executives and managers, and business development strategies.
Sample Relevant Careers: International Operations Specialist, Foreign Subsidiary Manager, Export-Import Manager, Global Supply Chain Manager, Joint Venture Specialist, Offshoring-Outsourcing Manager, International Agency Manager, NGO Manager

3.3.10 **Course Number:** 22:620:654
Course Name: Managing Growing Ventures
Prerequisites: None
Credits: 3
Course STEM Designation: Yes
Delivery Mode: Online
Offered By: MBA
Programs Potentially Accepting Credit Transfer: MBA
Available By: Spring 2024
Course Description: In this course, students will work with early-stage businesses to address challenges and develop a strategic plan for growth. Topics covered: social networks, organizational structure and culture, innovation, firm growth and change, intellectual property, employment practices and incentives, financing, and entrepreneurial improvisation. Students will learn the basics of entrepreneurship from both a theoretical and practical perspective and in the context of both for-profit and nonprofit enterprises. Issues of business resilience, and sustainability (social, economic, & environmental) will be addressed.
Sample Relevant Careers: Strategic Growth Manager, Strategic Growth Consultant, Product manager, Business Analyst, Strategy Consultant, IT Consultant, Project Manager, Angel Investor, Data Analyst, Information Technology Manager

3.3.11 **Course Number:** 22:010:668
Course Name: Reporting and Measuring Corporate Social Performance and Innovation
Prerequisites: None
Credits: 3
Course STEM Designation: Yes
Delivery Mode: In-person, online

Offered By: MBA in Professional Accounting
Programs Potentially Accepting Credit Transfer: MBA in Professional Accounting
Available By: Fall 2022
Course Description: Increasingly, corporations are being evaluated not only on financial performance, but also on performance along environmental, social, and governance (ESG) dimensions. Responding to demand from various stakeholders, corporations have been providing increasing disclosure on ESG topics through various channels; third-party ratings of ESG performance also abound. In this course, students will (1) be introduced to the different dimensions of ESG performance, (2) learn to navigate the multiple channels of mandatory and voluntary disclosures available on these topics, (3) evaluate the quality of the disclosures, (4) understand the accounting and reporting standards and frameworks governing the disclosures, and (5) become informed users of third-party ratings of ESG performance. The goal of the course is to make students confident users of ESG information.
Sample Relevant Careers: Corporate Governance Manager, Sustainability Manager, Disclosure Manager, ESG (Environmental, Social and Governance) Manager, Sustainability Manager, Corporate Responsibility Manager, Sustainable Investing Manager, ESG Integration Manager, ESG Consultant

3.3.12 **Course Number:** 22:620:674
Course Name: Social Entrepreneurship and Innovation
Prerequisites: None
Credits: 3
Course STEM Designation: No
Delivery Mode: In-person, online
Offered by: MBA
Programs Potentially Accepting Credit Transfer: MBA
Available by: Spring 2022
Course Description: In a world where social issues and environmental problems are increasing, society needs skilled problem-solvers who can leverage the tools of entrepreneurship and the resources of business and philanthropy to address these challenges. In this course, students will learn about entrepreneurial approaches to addressing society's grand challenges. These approaches can be used to create new ventures (social entrepreneurship) or within existing organizations (intrapreneurship) to discover opportunities and direct resources to make positive social impact. The new social ventures and business initiatives that result harness social innovation for the greater good. This course uses case studies, guest speakers, and a team project to help the key concepts come to life.
Sample Relevant Careers: Social Innovation Team Lead, Community and Social Innovation Manager, Social Entrepreneur/Founder, Nonprofit Relations Manager, Entrepreneurship Manager, Social Impact Manager, Business Development Specialist, Corporate Philanthropy Manager, Community Development Manager, Non-Profit Administrator, Grants Project Manager, Strategic Partnerships Manager

3.3.13 **Course Number:** 22:620:695
Course Name: Strategic Management for Digital Transformations

Prerequisites: None
Credits: 1
Course STEM Designation: Yes
Delivery Mode: In-person
Offered By: MBA
Programs Potentially Accepting Credit Transfer: MBA
Available By: Spring 2021
Course Description: In todays' environment of digital disruption and globalization, firms must quickly innovate and adapt strategies to maintain competitive advantage. This course provides a set of analytical and practical tools for formulating and implementing strategies that result in superior firm performance and long-term competitive advantage in online and digital markets. The course also provides a framework to help students design and implement a digital transformation plan for firms that are looking to enter new digital businesses or transition existing businesses to the digital marketplace.
Sample Relevant Careers: Product Manager, Business Analyst, Strategy Consultant, IT Consultant, Project Manager, Angel Investor, Data Analyst, Information Technology Manager

3.3.14 **Course Number:** 22:620:696
Course Name: Leading in the Digital Economy
Prerequisites: None
Credits: 1
Course STEM Designation: Yes
Delivery Mode: In-person
Offered By: MBA
Programs Potentially Accepting Credit Transfer: MBA
Available By: Fall 2020
Course Description: This course addresses multiple areas of professional interaction and leadership in this digital era. Topics covered span the levels from individual engagement with technology (including an in-depth discussion of multitasking and distraction) to creating successful virtual teams to leading in the virtual world. Special attention will be paid to the ways that our interactions and decisions change when we move content and processes to electronic settings.
Sample Relevant Careers: Business Intelligence Manager, Consumer Experience Manager, E-Recruitment Manager, Virtual Reality Manager, Visual Data Manager, Influencer Marketing Manager, Data Scientist, Growth Hacking Manager

3.3.15 **Course Number:** 22:620:697
Course Name: Ethics Challenges in the Digital Economy
Prerequisites: None
Credits: 1
Course STEM Designation: No
Delivery Mode: In-person
Offered By: MBA
Programs Potentially Accepting Credit Transfer: MBA
Available By: Fall 2020

Course Description: This course provides an overview of ethical challenges in the digital economy. It addresses the most important accounts of ethical decision-making in business, as well as key ethical concepts related to digitization: humanity, privacy, and trust. Using these resources, students explore ethical issues arising from major technological advancements in the digital economy: artificial intelligence, driverless cars, big data, and blockchain.

Sample Relevant Careers: Fintech Policy Manager, Digital Transformation Compliance Manager, Product Manager, Data Ethics and Privacy Manager, Ethics and Compliance Communications Manager, Data Privacy Steward, Marketing Compliance Analyst, Digital Program Manager, Governance, Privacy and Ethics Program Manager

4. rSBI Certificate in Management Science and Information Systems

4.1 Concentrations

4.1.1 Concentration Code: MSIS-1

Concentration Name: Data Analytics and Machine Learning
Concentration STEM Designation: Yes
Concentration Can Be Potentially Converted to Fully Online: Yes
Concentration Course List: Data Analysis and Decision Making (22:960:575), Business Analytics Programming (22:198:660), Machine Learning for Data Science (26:198:685)
Concentration Description: As rapidly growing amounts of data are created and used in industry and research environments, there is an increasing demand for people who are able to pursue data-driven thinking and decision-making using meaningful insights derived from large and diverse data. This concentration prepares students to deal with situations involving data-driven decision-making such as finding patterns in large amounts of data and using such discoveries to solve data problems and make useful predictions. Students will be trained in statistics fundamentals, basic computer programming, and machine learning algorithms that tap into knowledge on both fronts.
Sample Relevant Careers: Data Scientist, Data Analyst, Data Engineer, Business Analyst, Business Intelligence Specialist, Quantitative Researcher, Machine Learning Engineer, Marketing Analyst, Statistician

4.1.2 Concentration Code: MSIS-2

Concentration Name: Managerial Information Technology
Concentration STEM Designation: Yes
Concentration Can Be Potentially Converted to Fully Online: Yes
Concentration Course List: Business Data Management (22:198:603), Information Technology for Managers (22:198:609), IT Strategy (22:198:670)
Concentration Description: Information Technology (IT) has been the driving force behind the new way of doing business. IT has enabled modern organizations to achieve tremendous progress in productivity, has opened new markets, and has created new product and service opportunities. This concentration helps future managers understand how IT could help to organize the complexity of modern organizations, manage relationships with customers, suppliers, and employees, and improve work efficiency.
Sample Relevant Careers: IT Manager, IT Analyst, Data Manager, Information Systems Manager, Director of Information Technology, Network Architect, Chief Information Officer

4.1.3 Concentration Code: MSIS-3

Concentration Name: Data Forecasting and Mining
Concentration STEM Designation: Yes
Concentration Can Be Potentially Converted to Fully Online: Yes
Concentration Course List: Business Data Management (22:198:603), Information Technology for Managers (22:198:609), IT Strategy (22:198:670), Data Mining (22:198:650)
Concentration Description: This concentration prepares students to utilize collected data to make predictions and discern in them patterns of objects being observed. Statistical analyses, along with

forecasting and data mining techniques will be taught. Classroom teaching will be combined with software use.

Sample Relevant Careers: Data Scientist, Demand Forecasting Analyst, Forecasting Planner, Demand Forecasting Manager, Demand Forecasting Analyst, Data Analyst, Business Analyst, Business Intelligence Specialist, Quantitative Researcher

4.1.4 **Concentration Code:** MSIS-4

Concentration Name: Business Analytics for Operations

Concentration STEM Designation: Yes

Concentration Can Be Potentially Converted to Fully Online: Yes

Concentration Course List: Business Analytics Programming (22:198:660), Optimization Foundations for Data Science (26:711:685), Dynamic Pricing and Revenue Management (26:711:685)

Concentration Description: This concentration enables students to take advantage of detailed technical knowledge about decision making in business environments brimming with uncertainty and risk-related concerns. It balances foundational theories concerning optimization and stochastics, as well as programming-language know-hows. Both operational and financial aspects of running real businesses will be covered. Special attention will be paid to the data extraction, forecasting, and pricing/revenue decisions areas of the retail and airlines industries.

Sample Relevant Careers: Operations and Inventory Analytics Manager, Business Analytics and Operations Manager, Data Scientist, Demand Forecasting Analyst, Data Analyst, Business Analyst, Business Intelligence Specialist, Quantitative Researcher

4.1.5 **Concentration Code:** MSIS-5

Concentration Name: Cyber Security

Concentration STEM Designation: Yes

Concentration Can Be Potentially Converted to Fully Online: Yes

Concentration Course List: Information Security (22:544:643), Fundamentals of Blockchain and Distributed Ledgers (22:544:647), Data Privacy (26:198:645)

Concentration Description: Recent years have witnessed widespread use of computers and their interconnecting networks. This demands additional computer security and privacy measures to protect the information and relevant systems. This concentration prepares the students to meet the new challenges in the world of increasing threats to computer security and privacy by providing them with an understanding of the various threats and countermeasures. Students will be trained in the principles underlying security and privacy and will also learn the fundamentals of security and privacy models, mechanisms, and state-of-the-art technologies like blockchains.

Sample Relevant Careers: Information Security and Risk Analyst, Security and Risk Assurance Director, Compliance Analyst, Information Technology Consultant, Chief Information Security Officer, Enterprise Architect

4.1.6 **Concentration Code:** MSIS-6

Concentration Name: Human Capital Analytics

Concentration STEM Designation: Yes

Concentration Can Be Potentially Converted to Fully Online: Yes

Concentration Course List: Data Analysis and Decision Making (22:960:575), Business Data Management (22:198:603) or Data Analytics and Visualization (22:544:646), Human Resource Metrics and Analytics (38:533:550), Application of Human Resource Analytics: Tools and Techniques (38:533:650)

Concentration Description: Organizational success is largely driven by human capital. The Human Capital Analytics concentration equips students with data-driven decision-making skills to develop and evaluate high-impact people management interventions and practices. After completing the certificate, students will be skilled in analyzing data to interpret trends and predict outcomes related to people management, which facilitates change initiatives and enables the development of effective human resources practices, ultimately contributing to overall workforce success and organizational competitive advantage. Data analytics skills will be applied within the human resources context, optimizing practices and addressing challenges such as employee turnover, employee engagement, talent acquisition and management, legal compliance and discrimination, and performance management.

Sample Relevant Careers: Human Resources Professional, Human Resources Manager, Human Resources Generalist, Executives, Supervisors, Managers, Compensation Analysts, Recruiters, Data Scientist, Data Analyst, Data Engineer, Business Analyst, Business Intelligence Specialist, Quantitative Researcher, Statistician

4.2 Rutgers Stackable Business Innovation Program Certificate

Students enrolled in the rSBI program are eligible to earn an RBS certificate without a designated concentration. The *Rutgers Stackable Business Innovation Program Certificate* is flexible and does not require the student to complete specific courses under a concentration. Rather, the student can choose any courses from the rSBI catalog and must successfully complete a total of at least 9 credits to earn the certificate. To earn multiple such certificates, the student must successfully complete disjoint sets of courses across certificates (no repeat courses).

4.3 Courses

4.3.1

Course Number: 38:533:550

Course Name: Human Resource Metrics and Analytics

Prerequisites: Basic statistics or equivalent

Credits: 3

Course STEM Designation: Yes

Delivery Mode: In-person, online

Offered By: Master's in Human Resources Management

Programs Potentially Accepting Credit Transfer: Master's in Human Resources Management

Available By: Now

Course Description: This course introduces students to the concepts of Human Resource Management metrics, analytics, and evidence-based management. Students learn to reexamine the scope of human resource management through a quantitative lens. Topics include costing and

predicting turnover, ensuring diversity, equity and inclusion, valuing engagement and performance, and designing more effective selection and compensation systems.
Sample Relevant Careers: Human Resources Professional, Human Resources Manager, Human Resources Generalist, Executives

4.3.2 **Course Number:** 22:960:575
Course Name: Data Analysis and Decision Making
Prerequisites: Basic statistics and calculus
Credits: 3
Course STEM Designation: Yes
Delivery Mode: In-person
Offered By: MS in Information Technology and Analytics, MBA
Programs Potentially Accepting Credit Transfer: MS in Information Technology and Analytics, MBA
Available By: Now
Course Description: This course introduces statistics as applied to managerial problems. Emphasis is placed on conceptual understanding as well as conducting statistical analyses. Students learn the limitations and potential of statistics, gain hands-on experience using Excel, as well as various statistical techniques such as sampling, inference, and regression.
Sample Relevant Careers: Data Scientist, Data Analyst, Data Engineer, Business Analyst, Business Intelligence Specialist, Quantitative Researcher, Machine Learning Engineer, Marketing Analyst, Statistician

4.3.3 **Course Number:** 22:198:603
Course Name: Business Data Management
Prerequisites: None
Credits: 3
Course STEM Designation: Yes
Delivery Mode: In-person
Offered By: MS in Information Technology and Analytics, MBA
Programs Potentially Accepting Credit Transfer: MS in Information Technology and Analytics, MBA
Available By: Now
Course Description: This course provides students with an understanding of database technology and its application in managing data resources. The conceptual, logical, and physical design of databases will be analyzed. A database management system will be used as a vehicle for illustrating some of the concepts discussed in the course.
Sample Relevant Careers: Data Analyst, Data Engineer, Systems Administrator, Database Administrator, Data Manager, Business Analyst, Business Intelligence Specialist

4.3.4 **Course Number:** 22:198:609
Course Name: Information Technology for Managers
Prerequisites: None
Credits: 3

Course STEM Designation: Yes
Delivery Mode: In-person
Offered By: MS in Information Technology and Analytics, MBA
Programs Potentially Accepting Credit Transfer: MS in Information Technology and Analytics, MBA
Available By: Now
Course Description: The objective of this course is to study management's role in the development and use of information systems that help businesses achieve their goals and objectives. This course will let students use a real software product, understand how it is developed, and how it is helping real business enterprises in achieving productivity and value. Students will learn the architecture, development methodologies, marketing infrastructure, support mechanisms, database interfaces, server security and management issues as related to the software, customer interface, and documentation techniques. Extensive case studies will be used. Writing and presentations are major components. A professionally developed and publishable paper is due from each group of students.
Sample Relevant Careers: IT Manager, Data Manager, Information Systems Manager, Information Technology Director, Network Architect, Chief Information Officer, Chief Information Security Officer

4.3.5 **Course Number:** 22:544:643
Course Name: Information Security
Prerequisites: None
Credits: 3
Course STEM Designation: Yes
Delivery Mode: In-person
Offered By: MS in Information Technology and Analytics, MBA
Programs Potentially Accepting Credit Transfer: MS in Information Technology and Analytics, MBA
Available By: Now
Course Description: This course prepares the students to meet the new challenges in the world of increasing threats to computer security by providing them with an understanding of the various threats and countermeasures. Specifically, students will learn the theoretical advancements in information security, state-of-the-art techniques, standards, and best practices. Topics covered in this course include security policies, models and mechanisms for secrecy, integrity, and availability; operating system models and mechanisms for mandatory and discretionary controls; and data models, concepts, and mechanisms for database security. Basic cryptology and its applications; Security in computer networks and distributed systems; Identity threat; Control and prevention of viruses and other rogue programs.
Sample Relevant Careers: Information Security and Risk Analyst, Security and Risk Assurance Director, Compliance Analyst, Information Technology Consultant, Chief Information Security Officer

4.3.6 **Course Number:** 26:198:645
Course Name: Data Privacy
Prerequisites: None

Credits: 3
Course STEM Designation: Yes
Delivery Mode: In-person
Offered By: Ph.D. program
Programs Potentially Accepting Credit Transfer: MS in Information Technology and Analytics, MBA
Available By: Now
Course Description: Given the ubiquity of data collection and analysis nowadays, the challenge is to enable the legitimate use of collected data without violating privacy. From the organizational perspective, enabling safe and secure use of owned data can lead to great value added and return on investment. This course enables students to analyze the legal and social aspects of privacy and explores potential tools, techniques and technologies that can enhance privacy. The course introduces students to the core issues surrounding privacy, security, data storage and analysis and the technologies that have been developed to address those issues.
Sample Relevant Careers: Cyber Data Privacy Manager, Data Protection Product Manager, Information Governance and Privacy Associate, Data Privacy Director, Information Governance and Privacy Manager, Data Privacy and Protection Consultant, Privacy and Data Governance Compliance Manager, Information Security and Risk Analyst, Security and Risk Assurance Director, Compliance Analyst, Chief Information Security Officer, Data Privacy Software Engineer, Privacy Counselor

4.3.7 **Course Number:** 22:544:646
Course Name: Data Analytics and Visualization
Prerequisites: Basic statistics and calculus
Credits: 3
Course STEM Designation: Yes
Delivery Mode: In-person, online
Offered By: MS in Information Technology and Analytics, MBA
Programs Potentially Accepting Credit Transfer: MS in Information Technology and Analytics, MBA, Master's in Human Resources Management
Available By: Now
Course Description: The course aims to develop critical business data presentation skills to ensure that visualizations add to the effective interpretation and explanation of the underlying data without undue strain to the consumer of the information. Students will learn how visualizations enable effective detection of trends that can be easily connected to real world events to help explain relationships and interrelationships, and how to use appropriate and minimal use of color to maximize its impact. The course will present a variety of data visualization methods, focusing on business data visualizations similar to those that appear in business publications. Finally, students will learn advanced techniques that will help them analyze big data including hundreds of variables. Software tools such as R and Tableau will be used for experiential learning.
Sample Relevant Careers: Data Scientist, Data Visualization Analyst, Data Visualization Designer, Data Visualization Specialist, Data Visualization Engineer, Business Analyst, Business Intelligence Specialist, Quantitative Researcher, Statistician

4.3.8 **Course Number:** 22:544:647
Course Name: Fundamentals of Blockchain and Distributed Ledgers
Prerequisites: None
Credits: 3
Course STEM Designation: Yes
Delivery Mode: In-person
Offered By: MS in Information Technology and Analytics
Programs Potentially Accepting Credit Transfer: MS in Information Technology and Analytics, MBA
Available By: Now
Course Description: This course provides students with a basic understanding of Blockchain—the underlying technology on which Bitcoin, Etherum, and the Libra cryptocurrencies are based. Blockchain has found numerous applications in banking, health-care, supply chain, auditing systems, and even in the music industry and other creative disciplines. This class introduces the foundational knowledge from Cryptography and Distributed Computing necessary to understand in detail how Blockchain is formed and operates and presents a selection from the most successful applications of Blockchain technologies. Importantly, during this class, the students will have the chance of working on a real distributed Blockchain systems developed in Python. By dissecting actual state-of-the-art code, analyzing and modifying it, students will obtain working knowledge of subjects that address the most subtle details of Blockchain technologies.
Sample Relevant Careers: Blockchain Developer, Blockchain Engineer, Crypto Investment Analyst, Collateral Blockchain Tokenization Software Engineer, Blockchain Principal, Full Stack Developer, Blockchain Engineering Manager, Blockchain Distributed Ledger Technology Specialist

4.3.9 **Course Number:** 22:198:650
Course Name: Data Mining
Prerequisites: None
Credits: 3
Course STEM Designation: Yes
Delivery Mode: In-person
Offered By: MS in Information Technology and Analytics, MBA
Programs Potentially Accepting Credit Transfer: MS in Information Technology and Analytics, MBA
Available By: Now
Course Description: Recent advances in information technology along with the phenomenal growth of the Internet have resulted in an explosion of data collected, stored, and disseminated by various organizations. Because of its massive size, it is difficult for analysts to sift through the data even though it may contain useful information. Data mining holds great promise to address this problem by providing efficient techniques to uncover useful information hidden in the large data repositories. Awareness of the importance of data mining for business is becoming widespread. The industry has created more and more job opportunities for people who have interdisciplinary data analytic skills. Indeed, this course intends to bridge the gap between data mining techniques

and business applications. The students have the opportunities to learn both domain and technical knowledge to face the big data challenges in the industry.
Sample Relevant Careers: Data Scientist, Data Analyst, Data Engineer, Business Analyst, Business Intelligence Specialist, Quantitative Researcher, Machine Learning Engineer, Marketing Analyst, Statistician

4.3.10 **Course Number**: 38:533:650
Course Name: Application of Human Resource Analytics: Tools and Techniques
Prerequisites: Human Resource Metrics and Analytics
Credits: 3
Course STEM Designation: Yes
Delivery Mode: In-person, online
Offered By: Master's in Human Resources Management
Programs Potentially Accepting Credit Transfer: Master's in Human Resources Management
Available By: Now
Course Description: This course focuses on identifying strategic Human Resource Management problems and creating data-driven approaches to find solutions. Students focus on designing and using surveys, collecting HR metrics and data, as well as developing skills necessary to inform a broad audience about evidence-based solutions. Topics include problem identification, data acquisition, data analysis, identifying best practices, project management, research ethics, and communicating research findings to a managerial audience.
Sample Relevant Careers: Human Resources Professional, Human Resources Manager, Human Resources Generalist, Executives, Supervisors, Managers, Compensation Analysts, Recruiters

4.3.11 **Course Number:** 22:198:660
Course Name: Business Analytics Programming
Prerequisites: None
Credits: 3
Course STEM Designation: Yes
Delivery Mode: In-person
Offered By: MS in Information Technology and Analytics, MBA
Programs Potentially Accepting Credit Transfer: MS in Information Technology and Analytics, MBA
Available By: Now
Course Description: This course teaches the principles of programming for business analytics using the Python and R programming languages. Programming is the fundamental skill based on which all Information Systems are built. The course provides students with a working knowledge of programming and fundamental insights into what a programmer does.
Sample Relevant Careers: Software Engineer, Application Programmer, Application Developer, Business Applications Developer, Business Applications Analyst, Clinical Application Programmer, Lead Application Developer, Principal Software Engineer

4.3.12 **Course Number:** 22:198:670
Course Name: IT Strategy

Prerequisites: None
Credits: 3
Course STEM Designation: Yes
Delivery Mode: In-person
Offered By: MS in Information Technology and Analytics, MBA
Programs Potentially Accepting Credit Transfer: MS in Information Technology and Analytics, MBA
Available By: Now
Course Description: Over the last few years Information Technology (IT) teams have evolved and continue evolving to establish IT organizations as business strategic partners, and CIOs and technology leaders are now included in the executive teams and are expected to play a leading role in delivering business value while solving both business and technical problems. Companies are increasing their investments in acquiring and maintaining information on themselves, the markets and on competitors, and they need systems and IT teams to enable a strategic use of the information that makes it a business asset to the organization. Developing and executing an effective Information Technology strategy that enables business strategy is critical for creating business value and gaining competitive advantage. This Course presents a framework and methodology for assessing, developing and implementing an effective IT strategy that is aligned with business needs. The course will be a combination of directed readings, lectures, case studies, one individual assignment and one group project.
Sample Relevant Careers: IT Manager, Data Manager, Information Systems Manager, Director of Information Technology, Network Architect, Chief Information Officer, Chief Information Security Officer

4.3.13 **Course Number:** 26:198:685
Course Name: Machine Learning for Data Science
Prerequisites: Experience with programming and statistics
Credits: 3
Course STEM Designation: Yes
Delivery Mode: In-person
Offered By: Ph.D. program
Programs Potentially Accepting Credit Transfer: MS in Information Technology and Analytics, MBA
Available By: Now
Course Description: This course offers students a practical introduction to using Machine Learning algorithms, tools, and techniques for solving problems that fall under the umbrella of Data Science. It is structured around learning concepts from the field of Machine Learning and applying them on data-intensive problems. While the course covers theories of Machine Learning and tools such as R, the focus is on using them for solving data-driven problems. The students will be introduced to several real-life problems that involve analyzing data for prediction, classification, organization, estimations, and pattern recognition.
Sample Relevant Careers: Machine Learning Engineer, Machine Learning Scientist, Data Scientist, Data Analyst, Data Engineer, Business Analyst, Business Intelligence Specialist, Quantitative Researcher, Marketing Analyst, Statistician

4.3.15 Course Number: 26:711:685
Course Name: Optimization Foundations for Data Science
Prerequisites: None
Credits: 3
Course STEM Designation: Yes
Delivery Mode: In-person
Offered By: Ph.D. program
Programs Potentially Accepting Credit Transfer: MBA
Available By: Now
Course Description: This course teaches the foundations of optimization relevant to data science. Concepts and tools to be covered will include convexity, the Karush-Kuhn-Tucker optimality conditions, and duality. Various algorithms in the context of machine learning will be discussed as well. These include gradient- and descent-based methods. Also touched on will be topics such as online and stochastic gradient methods.
Sample Relevant Careers: Demand Forecasting Data Scientist, Demand Forecasting Analyst, Forecasting Planner, Demand Forecasting Manager, Data Analyst, Business Analyst, Business Intelligence Specialist, Quantitative Researcher, Optimization Engineer, Mathematical Scientist, Quantitative Analyst

4.3.16 Course Number: 26:711:685
Course Name: Dynamic Pricing and Revenue Management
Prerequisites: None
Credits: 3
Course STEM Designation: Yes
Delivery Mode: In-person
Offered By: Ph.D. program
Programs Potentially Accepting Credit Transfer: MBA
Available By: Now
Course Description: This course provides students with a basic understanding of the modern theory and practice of dynamic pricing and revenue management. It covers topics such as market-response models, economics of revenue management, estimation and forecasting, single-resource capacity control, network capacity control, overbooking, dynamic pricing of reversible and irreversible varieties, auction, competitive pricing, joint inventory-price control, and control with ambiguity.
Sample Relevant Careers: Revenue Management Manager, Revenue Manager, Revenue Analyst, Revenue Management Analyst, Pricing and Yield Manager, Revenue Operations Manager, Revenue Management Director, Pricing Specialist, Revenue Management Specialist

5. rSBI Certificate in Marketing

5.1 Concentrations

5.1.1 Concentration Code: MKTG-1

Concentration Name: Marketing Analytics
Concentration STEM Designation: Yes
Concentration Can Be Potentially Converted to Fully Online: Yes
Concentration Course List: Marketing Research (22:630:604), Customer Journey Analytics (22:630:639 or 22:630:679), Advanced Marketing Analytics (22:630:677), Marketing Insights (22:630:678)
Concentration Description: This concentration focuses on gaining insights into the market and its customers. Marketing Research introduces basic survey and analytical methods for studying consumer attitudes, opinions, preferences, and choices. Customer Journey Analytics combines and analyzes various digital and non-digital customer touch points and identifies strategies to influence their decisions throughout the consumer purchasing journey. Advanced Marketing Analytics covers various marketing decision models and tools with hands-on analysis. The capstone course, Marketing Insights, is based on cases studies to solve various marketing problems by integrating qualitative and quantitative analytical tools and generating marketing insights for informed business decisions.
Sample Relevant Careers: Brand Manager, Business Analyst, Demand Forecasting Associate, Demand Planning Associate, Marketing Associate, Marketing Manager, Product Manager, Marketing Research Associate

5.1.2 Concentration Code: MKTG-2

Concentration Name: Digital Marketing
Concentration STEM Designation: Yes
Concentration Can Be Potentially Converted to Fully Online: Yes
Concentration Course List: Digital Marketing (22:630:590 or 22:630:615), Customer Journey Analytics (22:630:639 or 22:630:679), Digital Advertising and Promotion (22:630:631), Social Media Marketing (22:630:632)
Concentration Description: In today's market, most firms must integrate traditional and digital channels and media to achieve marketing synergies. This concentration focuses on expanding traditional marketing theories and practices to the digital space by analyzing online consumer behavior and designing advertising and promotional strategies through digital and social media.
Sample Relevant Careers: Brand Manager, Digital Marketing Manager, Marketing Associate, Marketing Communications Manager, Marketing Manager, Media and Communications Director, Media Content Creator, Public Relations Manager, Social Media Manager, Product Manager

5.1.3 Concentration Code: MKTG-3

Concentration Name: Pharmaceutical Marketing
Concentration STEM Designation: Yes
Concentration Can Be Potentially Converted to Fully Online: Yes

Concentration Course List: Pharmaceutical Marketing Research (22:630:617), Pharmaceutical Product Management (22:630:618), Managing the Pharmaceutical Sales Organization (22:630:619), Market Access and Reimbursements for Drugs (22:630:684)
Concentration Description: To be successful in today's competitive pharmaceutical environment, marketers need to be knowledgeable in diverse areas, such as product development and sales management, to address both the problems and opportunities in the field. This concentration aims to prepare future leaders in pharmaceutical marketing by covering industry expertise from research and product development and market access and sales management.
Sample Relevant Careers: Account Executive, Account Manager, Brand Manager, Marketing Associate, Marketing Manager, Product Manager, Sales Associate, Sales Manager

5.1.4 Concentration Code: MKTG-4
Concentration Name: Marketing Innovation
Concentration STEM Designation: Yes
Concentration Can Be Potentially Converted to Fully Online: Yes
Concentration Course List: Product Innovation (22:630:602), Business to Business Marketing (22:630:606) ,Consumer Behavior (22:630:610), Digital Marketing (22:630:615)
Concentration Description: Marketers need to be ready to provide innovative solutions in the form of new products and services that address the problems and opportunities in today's marketplace. This concentration prepares students with the tools and technologies to identify the problems and opportunities and further manage the process of delivering innovative products and services to the end customer in both the business-to-consumer and business-to-business sectors.
Sample Relevant Careers: Brand Manager, Marketing Associate, Marketing Manager, User Experience Designer, User Experience Researcher, Product Innovation Manager, Product Manager, Innovation Strategist

5.2 Rutgers Stackable Business Innovation Program Certificate

Students enrolled in the rSBI program are eligible to earn an RBS certificate without a designated concentration. The *Rutgers Stackable Business Innovation Program Certificate* is flexible and does not require the student to complete specific courses under a concentration. Rather, the student can choose any courses from the rSBI catalog and must successfully complete a total of at least 9 credits to earn the certificate. To earn multiple such certificates, the student must successfully complete disjoint sets of courses across certificates (no repeat courses).

5.3 Concentration Courses

5.3.1 Course Number: 22:630:590 (listed as 22:630:615 by MBA)
Course Name: Digital Marketing
Prerequisites: None
Credits: 3
Course STEM Designation: Yes
Delivery Mode: Online

Offered by: MS in Digital Marketing, MBA
Programs Potentially Accepting Credit Transfer: MS in Digital Marketing, MBA
Available By: Now
Course Description: This course provides an introduction to digital marketing, a rapidly growing and evolving area of new media. This course examines the role of digital marketing and many of the areas this terminology has grown to encompass. A practical approach is adopted in this course. In addition to learning fundamental constructs and principles of the digital experience, students will focus on learning tools and skills necessary for solving business problems and exploiting business opportunities. Guest speakers and in-class exercises will be utilized to provide insights and relevancy to this swiftly expanding area of marketing.
Sample Relevant Careers: Digital Marketing Manager, Marketing Communications Manager, Media and Communications Director, Media Content Creator, Public Relations Manager, Social Media Manager, Marketing Associate, Marketing Manager

5.3.2 **Course Number:** 22:630:602
Course Name: Product Innovation
Prerequisites: Marketing Management (22:630:586)
Credits: 3
Course STEM Designation: Yes
Delivery Mode: In-person
Offered By: MBA
Programs Potentially Accepting Credit Transfer: MBA
Available By: Now
Course Description: This course introduces concepts and methods used for coordinating strategy formulation and the identification and evaluation of new product opportunities, planning and organizing the process of product development, testing new products, and new markets and commercialization. Special emphasis is placed on issues related to supply chain management, marketing and research and development.
Sample Relevant Careers: Brand Manager, Marketing Associate, Marketing Manager, User Experience Designer, User Experience Researcher, Product Innovation Manager, Product Manager, Innovation Strategist

5.3.3 **Course Number**: 22:630:604
Course Name: Marketing Research
Prerequisites: Marketing Management (22:630:586) and Business Statistics (200 level)
Credits: 3
Course STEM Designation: Yes
Delivery Mode: In-person
Offered By: MBA
Programs Potentially Accepting Credit Transfer: MBA
Available By: Now
Course Description: This course provides insight into the nature and assumptions of marketing research conducted by corporations and commercial research companies. It provides practical experience in planning and implementing marketing research by covering research plans,

questionnaire design, conducting surveys, data collection, application of statistical analysis such as multidimensional scaling, cluster analysis, and conjoint analysis; report writing and communication of research results.
Sample Relevant Careers: Brand Manager, Business Analyst, Demand Forecasting Associate, Demand Planning Associate, Marketing Associate, Marketing Manager, Product Manager, Marketing Research Associate

5.3.4 **Course Number:** 22:630:606
Course Name: Business to Business Marketing
Prerequisites: Marketing Management (22:630:586)
Credits: 3
Course STEM Designation: No
Delivery Mode: In-person, online
Offered by: MS in Supply Chain Management, MBA
Programs Potentially Accepting Credit Transfer: MS in Supply Chain Management, MBA
Available By: Now
Course Description: This course introduces business-to-business (B2B) marketing from the perspective of both the seller and the buyer. It covers marketing strategy and product/market planning systems, selling and management of the sales force, marketing research and competitive intelligence, pricing and promotion, management of auxiliary services and industrial buying behavior.
Sample Relevant Careers: Account Executive, Account Manager, Brand Manager, Marketing Associate, Marketing Manager, Product Manager, Sales Associate, Sales Manager

5.3.5 **Course Number:** 22:630:610
Course Name: Consumer Behavior
Prerequisites: Marketing Management (22:630:586)
Credits: 3
Course STEM Designation: No
Delivery Mode: In-person
Offered By: MBA
Programs Potentially Accepting Credit Transfer: MBA
Available By: Now
Course Description: This course focuses on the understanding of consumers and the factors that influence their behavior. Topics covered include consumer decision models, psychological processes, and social and environmental forces that shape consumer behavior. It also explores the historical development of consumer behavior and current societal issues.
Sample Relevant Careers: Brand Manager, Marketing Associate, Marketing Manager, Product Manager, Sales Associate, Sales Manager

5.3.6 **Course Number:** 22:630:615 (listed as 22:630:590 by MS in Digital Marketing)
Course Name: Digital Marketing
Prerequisites: Marketing Management (22:630:586)
Credits: 3

Course STEM Designation: Yes
Delivery Mode: In-person
Offered By: MBA
Programs Potentially Accepting Credit Transfer: MS in Digital Marketing, MBA
Available By: Now
Course Description: This course provides an introduction to Digital Marketing, a rapidly growing and evolving area of new media. This course examines the role of digital marketing and many of the areas this terminology has grown to encompass. A practical approach is adopted in this course. In addition to learning fundamental constructs and principles of the digital experience, students will focus on learning tools and skills necessary for solving business problems and exploiting business opportunities. Guest Speakers and in-class exercises will be utilized to provide insights and relevancy to this swiftly expanding area of marketing.
Sample Relevant Careers: Digital Marketing Manager, Marketing Communications Manager, Media and Communications Director, Media Content Creator, Public Relations Manager, Social Media Manager, Marketing Associate, Marketing Manager

5.3.7 **Course Number:** 22:630:617
Course Name: Pharmaceutical Marketing Research
Prerequisites: Marketing Management (22:630:586)
Credits: 3
Course STEM Designation: Yes
Delivery Mode: In-person
Offered By: MBA
Programs Potentially Accepting Credit Transfer: MBA
Available By: Now
Course Description: This course examines the role of marketing research in four fundamental ways: (1) identification of a marketing problem and translation of that problem into an appropriate scientific question, (2) selections of the most appropriate data collection procedures using the most appropriate sample, (3) development of analytics for reporting the "whats" of the data but more importantly answering the "whys" underlying the relationships among the data, and (4) how to report results in the most meaningful way that translates insights into actionable recommendations.
Sample Relevant Careers: Brand Manager, Business Analyst, Demand Forecasting Associate, Demand Planning Associate, Marketing Associate, Marketing Manager, Product Manager, Marketing Research Associate

5.3.8 **Course Number:** 22:630:618
Course Name: Pharmaceutical Product Management
Prerequisites: Marketing Management (22:630:586)
Credits: 3
Course STEM Designation: No
Delivery Mode: In-person
Offered By: MBA
Programs Potentially Accepting Credit Transfer: MBA
Available By: Now

Course Description: This course focuses on real-world marketing challenges faced in the pharmaceutical industry. Topics of exploration include product development, lifecycle planning, competitive analysis, coordination with the sales force, positioning/messaging, business development and monitoring performance. It will examine the various roles a product manager performs both internally and externally. A comprehensive marketing/launch plan for a phase III drug will be developed. Lectures will be supplemented by guest speakers and case studies.
Sample Relevant Careers: Brand Manager, Marketing Associate, Marketing Manager, User Experience Designer, User Experience Researcher, Product Innovation Manager, Product Manager, Innovation Strategist

5.3.9 **Course Number:** 22:630:619
Course Name: Managing the Pharmaceutical Sales Organization
Prerequisites: Marketing Management (22:630:586)
Credits: 3
Course STEM Designation: No
Delivery Mode: In-person
Offered By: MBA
Programs Potentially Accepting Credit Transfer: MBA
Available By: Now
Course Description: In the pharmaceutical market, sales and share growth are results of needs-based, consultative selling complemented by various marketing tools and tactics. The promotional, consultative approach to selling complements the overall marketing strategies. Leadership and management of the sales force are critically important to the success of a product. This course addresses all of these issues. In addition, students will spend a day in the field along with an actual field rep to get an idea what the job is like ("Day in the Life of a Pharmaceutical Sales Representative") followed by an active, participatory session focusing on the tactics required to drive a marketing plan from a sales perspective.
Sample Relevant Careers: Account Executive, Account Manager, Brand Manager, Marketing Associate, Marketing Manager, Product Manager, Sales Associate, Sales Manager

5.3.10 **Course Number:** 22:630:631
Course Name: Digital Advertising and Promotion
Prerequisites: None
Credits: 3
Course STEM Designation: Yes
Delivery Mode: Online
Offered By: MS in Digital Marketing
Programs Potentially Accepting Credit Transfer: MS in Digital Marketing, MBA
Available By: Now
Course Description: This class covers the key concepts in digital advertising and helps you to not only understand what happens as a consumer but also as a buyer of ads - what metrics, processes, pitfalls, and technologies to use to position your company/product/service for success in the digital marketing era. We will cover promotions, real time bidding, transparency, big data analytics and touch a bit into the future of digital advertising.

Sample Relevant Careers: Digital Marketing Manager, Marketing Communications Manager, Media and Communications Director, Media Content Creator, Public Relations Manager, Social Media Manager, Marketing Associate, Marketing Manager

5.3.11 **Course Number:** 22:630:632
Course Name: Social Media Marketing
Prerequisites: None
Credits: 3
Course STEM Designation: Yes
Delivery Mode: Online
Offered By: MS in Digital Marketing, MBA
Programs Potentially Accepting Credit Transfer: MS in Digital Marketing, MBA
Available By: Fall 2020
Course Description: This course introduces strategies and tactics for businesses to promote and communicate with customers through various online platforms in order to draw the attention of a wide audience. The course covers such social media sites as Facebook, Instagram, Twitter, and YouTube.
Sample Relevant Careers: Digital Marketing Manager, Marketing Communications Manager, Media and Communications Director, Media Content Creator, Public Relations Manager, Social Media Manager, Marketing Associate, Marketing Manager

5.3.12 **Course Number:** 22:630:639 (listed as 22:630:679 by MBA)
Course Name: Customer Journey Analytics
Prerequisites: none
Credits: 3
Course STEM Designation: Yes
Delivery Mode: Online
Offered By: MS in Digital Marketing, MBA
Programs Potentially Accepting Credit Transfer: MS in Digital Marketing, MBA
Available By: Now
Course Description: This course introduces the concept of a customer journey which spans digital channels (web, mobile, app) and non-digital touchpoints (1:1, call center, etc.) Customer Journey Analytics is the process of tracking and analyzing the way customers use combinations of channels to interact with an organization. The focus of the course is on digital analytics through practical applications, with an end goal of deriving actionable insights that will impact the organization's acquisition, experience, and retention strategies. It provides a broad overview of key digital analytics strategies, concepts, issues, challenges, and tools.
Sample Relevant Careers: Brand Manager, Business Analyst, Demand Forecasting Associate, Demand Planning Associate, Marketing Associate, Marketing Manager, Product Manager, Marketing Research Associate

5.3.13 **Course Number:** 22:630:677
Course Name: Advanced Marketing Analytics
Prerequisites: Marketing Management (22:630:586) and Marketing Research (22:630:604)

Credits: 3
Course STEM Designation: Yes
Delivery Mode: In-person
Offered By: MBA
Programs Potentially Accepting Credit Transfer: MBA
Available By: Now
Course Description: This course will cover statistical models and techniques that can be effectively used by managers on marketing datasets. This course emphasizes data situations that students are likely to face in marketing and consulting jobs. The main topics covered in this course are customer value measurement, segmentation & targeting analysis, positioning analysis, new product design decisions, and new product forecasting models. This course integrates marketing concepts with practice and emphasizes learning by doing. It provides software tools to help you apply marketing concepts to real decision situations. Students will learn to use several statistics software packages such as MEXL, SPSS, and Number Analytics. The 60% of the course consists of hands-on data analysis; students will work on datasets that are provided by the book-cases and also the ones provided by the instructor.
Sample Relevant Careers: Brand Manager, Business Analyst, Demand Forecasting Associate, Demand Planning Associate, Marketing Associate, Marketing Manager, Product Manager, Marketing Research Associate

5.3.14 **Course Number:** 22:630:678
Course Name: Marketing Insights
Prerequisites: Advanced Marketing Research (22:630:677)
Credits: 3
Course STEM Designation: Yes
Delivery Mode: In-person
Offered By: MBA
Programs Potentially Accepting Credit Transfer: MBA
Available By: Now
Course Description: This is a capstone course for Marketing Analytics which combines all aspects of marketing research process in cased-based projects. Students will be trained to integrate results from exploratory, descriptive, and causal research processes and combine both qualitative and quantitative results to make persuasive presentation of the finding. In addition, the course will cover issues of client-vendor communication during the research process. The course will be based on textbooks, assigned readings, case analyses, and student projects.
Sample Relevant Careers: Brand Manager, Business Analyst, Demand Forecasting Associate, Demand Planning Associate, Marketing Associate, Marketing Manager, Product Manager, Marketing Research Associate

5.3.15 **Course Number:** 22:630:679 (listed as 22:630:639 by MS in Digital Marketing)
Course Name: Customer Journey Analytics
Prerequisites: None
Credits: 3
Course STEM Designation: Yes

Delivery Mode: In-person
Offered By: MBA
Programs Potentially Accepting Credit Transfer: MS in Digital Marketing, MBA
Available By: Now
Course Description: This course introduces the concept of a customer journey which spans digital channels (web, mobile, app) and non-digital touchpoints (1:1, call center etc.) Customer Journey Analytics is the process of tracking and analyzing the way customers use combinations of channels to interact with an organization. The focus of the course is on digital analytics through practical applications, with an end goal of deriving actionable insights that will impact the organization's acquisition, experience, and retention strategies. It provides a broad overview of key digital analytics strategies, concepts, issues, challenges, and tools.
Sample Relevant Careers: Brand Manager, Business Analyst, Demand Forecasting Associate, Demand Planning Associate, Marketing Associate, Marketing Manager, Product Manager, Marketing Research Associate

5.3.16 Course Number: 22:630:684
Course Name: Market Access and Reimbursements for Drugs
Prerequisites: Marketing Management (22:630:684)
Credits: 3
Course STEM Designation: Yes
Delivery Mode: In-person
Offered By: MBA
Programs Potentially Accepting Credit Transfer: MBA
Available By: Now
Course Description: This course will explore the complex variety of transactions that takes place between the development and manufacturing of a pharmaceutical product. It will further cover finance mechanisms that influence the payer, provider and the patient, including (1) pharmaceutical pricing models, (2) innovative contracting, (3) reimbursement and coding, and (4) cause and effect of patient cost offsets
Sample Relevant Careers: Account Executive, Account Manager, Marketing Associate, Product Manager, Sales Associate, Sales Manager

6. rSBI Certificate in Supply Chain Management

6.1 Concentrations

6.1.1 Concentration Code: SCM-1

Concentration Name: Supply Chain Analytics
Concentration STEM Designation: Yes
Concentration Can Be Potentially Converted to Fully Online: Yes
Concentration Course List: Data Analytics and Decision Making (22:544:575), Supply Chain Risk Analytics (22:799:624), Business Intelligence for Supply Chains (22:799:670), Artificial Intelligence for Supply Chain Management (22:799:641)
Concentration Description: For supply chains to run smoothly, organizations need data-driven decision-makers who also have functional knowledge in supply chains. This concentration helps build such well-rounded competence via courses that offer analytical data skills and generalized supply chain domain knowledge, and equip students with basic skills for the modern, data-driven supply chain management practices.
Sample Relevant Careers: Supply Chain Analyst, Supply Chain Planner, Inventory Analyst, Material Planner, Production Planner, Strategic Planner/Buyer, Logistics Analyst, Supply Chain Consultant, Business Intelligence Engineer, Business Intelligence Data Science Analyst, Supply Chain Manager

6.1.2 Concentration Code: SCM-2

Concentration Name: Healthcare Operations Management
Concentration STEM Designation: No
Concentration Can Be Potentially Converted to Fully Online: Yes
Concentration Course List: Healthcare Marketing (22:630:625), Healthcare Service Management (22:799:696), Healthcare Law and Ethics (22:799:629), Operations Analysis (22:799:586)
Concentration Description: Facing constant challenges to reduce costs, improve quality, and enhance the patient experience, the healthcare industry needs professionals who not only understand industry standards but also challenges associated with day-to-day operations. This concentration offers a combination of general healthcare domain knowledge and advanced operations analysis skillsets.
Sample Relevant Careers: Healthcare Service Manager, Healthcare General Manager, Healthcare Supply Chain Professional, Healthcare Consultant

6.1.3 Concentration Code: SCM-3

Concentration Name: Healthcare Analytics
Concentration STEM Designation: Yes
Concentration Can Be Potentially Converted to Fully Online: Yes
Concentration Course List: Data Analytics and Decision-Making (22:544:575), Healthcare Service Management (22:799:696), Healthcare Analytics (22:799:638)
Concentration Description: This concentration teaches ongoing industry trends as well as specific analytical problems/issues that care providers are currently facing during the transition to value-

based care model. It will use different health care data to demonstrate how to use analytics to derive meaningful managerial insights.

Sample Relevant Careers: Healthcare Analyst, Healthcare Strategist, Healthcare Database Manager, Healthcare Service Manager, Healthcare General Manager, Healthcare Consultant

6.1.4 Concentration Code: SCM-4

Concentration Name: Global Procurement Management

Concentration STEM Designation: No

Concentration Can Be Potentially Converted to Fully Online: Yes

Concentration Course List: Commercial Management of Supply Contracts (22:799:626), Supply Chain Finance (22:799:640), Global Procurement and Supply Management (22:799:608 or 22:799:618), Supply Chain Risk and Disruption Management (22:799:639)

Concentration Description: Procurement involves identifying and agreeing to terms for the acquisition of goods, services, or works from an external source, often via a competitive bidding process. involving constrained decision making and economic analysis. This concentration will present both academic foundations and real-life applications designed to ensure successful procurement operations. It further presents the causes, assessment of organization vulnerability, and strategies for managing supply chain disruptions. It explores the area of Business Continuity and Risk Management comprehensively to provide organizational resilience. Particular emphasis is placed on assessing threats which may lead to disastrous events, evaluating control alternatives and implementing strategies. Practical solutions to enable an organization to mitigate risk, manage crisis and recover after a disaster are explored

Sample Relevant Careers: Procurement Officer, Buyer, Supply Chain Manager, Operations Manager

6.1.5 Concentration Code: SCM-5

Concentration Name: Supply Chain Law and Contracts

Concentration STEM Designation: No

Concentration Can Be Potentially Converted to Fully Online: Yes

Concentration Course List: Supply Chain Law and Governance (22:799:689), Business Law for Managers and Entrepreneurs (22:140:592), Commercial Management of Supply Contracts (22:799:626)

Concentration Description: Supply chain professionals must understand the domestic and international laws and legal processes that bound their strategic decisions and business planning. This concentration is aimed towards both supply chain managers who wish to learn more about law and governance of the supply chain, and contract managers that wish to possess a deeper understanding of how contract law functions domestically and across borders. Students will study the law not to become lawyers, but rather to be managers who can strategically use the law to meet their firm's business and supply chain objectives.

Sample Relevant Careers: Procurement Officer, Buyer

6.1.6 Concentration Code: SCM-6

Concentration Name: New Product Commercialization

Concentration STEM Designation: No

Concentration Can Be Potentially Converted to Fully Online: Yes
Concentration Course List: New Product Commercialization (22:799:653), Product Innovation (22:630:602), Commercial Management of Supply Contracts (22:799:626)
Concentration Description: This concentration explores supply chain considerations in the introduction of new products, including cost-cutting innovation, process innovation, and contract preparation.
Sample Relevant Careers: Marketing Manager, Product Manager

6.1.7 **Concentration Code:** SCM-7
Concentration Name: Future Trends in Supply Chain Management
Concentration STEM Designation: Yes
Concentration Can Be Potentially Converted to Fully Online: Yes
Concentration Course List: Supply Chain Digital Transformation **(**22:799.623), Strategic Directions of Future Supply Chains (22:799:627), Supply Chain Sustainability (22:799:672 or 22:799:699), Lean Six Sigma (22:799:690 or 22:799:676)
Concentration Description: This concentration presents cutting-edge developments in future supply chain management. It focuses on increasingly critical sustainability issues and awareness of fact-driven decision making in supply chains enabled by lean six sigma. It is designed to equip practitioners with the tools necessary to meet tomorrow's challenges.
Sample Relevant Careers: Procurement Officer, Supply Chain Manager, Operations Manager

6.1.8 **Concentration Code**: SCM-8
Concentration Name: Supply Chain Sustainability and Social Compliance
Concentration STEM Designation: No
Concentration Can Be Potentially Converted to Fully Online: Yes
Concentration Course List: Supply Chain Social Compliance (22:799:678), Supply Chain Sustainability (22:799:672).
Concentration Description: Consumers and other stakeholders are increasingly demanding that firms ensure that their supply chains comply with basic human rights and environmental standards. This concentration will train managers in the state-of-the-art methods and institutions that firms are using to implement socially and environmentally sustainable supply chains and business practices.
Sample Relevant Careers: Procurement Officer, Supply Chain Manager, Operations Manager

6.1.9 **Concentration Code**: SCM-9
Concentration Name: Supply Chain Modeling and Simulation
Concentration STEM Designation: Yes
Concentration Can Be Potentially Converted to Fully Online: Yes
Concentration Course List: Simulation of Production Systems (16:540:555), Operations Analysis (22:799:564, or 22:799:580 or 22:799:586), Supply Chain Management Strategies (22:799:607)
Concentration Description: This concentration is intended to prepare students for modeling and simulating various problems related to supply chain management, such as procurement, manufacturing, logistics and distribution, inventory, and customer relationship.
Sample Relevant Careers: Supply Chain Manager, Supply Chain Analyst, Operations Manager.

6.1.10 Concentration Code: SCM-10
Concentration Name: Packaging and Supply Chain Sustainability
Concentration STEM Designation: Yes
Concentration Can Be Potentially Converted to Fully Online: Yes
Concentration Course List: Packaging Fundamentals (16:731:545), Special Topics in Packaging Engineering (16:731:562), Supply Chain Sustainability (22:799:672 or 22:799:699)
Concentration Description: This concentration is designed to equip practitioners with the tools necessary to meet tomorrow's challenges concerning packaging and its sustainability in the associated supply chains. To this end, it presents cutting-edge developments in Packaging Engineering and Supply Chain Management. The concentration focuses on increasingly critical sustainability issues of packaging development and its environmental impact, as well as fact-driven decision making in supply chains enabled by lean six sigma.
Sample Relevant Careers: Packaging Development Engineer, Packaging System Engineer, Staff Packaging Engineer, Packaging Development Manager, Packaging R&D Manager

6.1.11 Concentration Code: SCM-11
Concentration Name: Digital Strategies in Packaging
Concentration STEM Designation: Yes
Concentration Can Be Potentially Converted to Fully Online: Yes
Concentration Course List: E-Commerce Packaging (16:731:561), Supply Chain Digital Transformation (22:799.623), Strategic Directions of Future Supply Chains (22:799:627)
Concentration Description: This concentration on digital strategies equips students with skills and tools required for effective engineering and supply chain management when competing in an increasingly digital economy, with applications to packaging. It focuses on how engineering, supply chain management, and innovation can leverage digital strategies to enhance competitive advantage, describes the process of transforming organizations to better adapt to the digital economy, and presents the benefits and difficulties of managing organizations and people that have become increasingly reliant on digital technologies.
Sample Relevant Careers: Project Engineer, Design Engineer, Product Engineer, Program Manager, System Engineering Manager, Digital Strategy Manager, Operations Manager, Supply Chain Manager

6.2 Rutgers Stackable Business Innovation Program Certificate

Students enrolled in the rSBI program are eligible to earn an RBS certificate without a designated concentration. The *Rutgers Stackable Business Innovation Program Certificate* is flexible and does not require the student to complete specific courses under a concentration. Rather, the student can choose any courses from the rSBI catalog and must successfully complete a total of at least 9 credits to earn the certificate. To earn multiple such certificates, the student must successfully complete disjoint sets of courses across certificates (no repeat courses).

6.3 Concentration Courses

6.3.1 **Course Number:** 16:731:545
Course Name: Packaging Fundamentals
Prerequisites: None
Credits: 3
Course STEM Designation: Yes
Delivery Mode: In-person, online
Offered By: Packaging Engineering Program
Programs Potentially Accepting Credit Transfer: MS in Packaging Engineering, MS in Supply Chain Analytics, MS/MEng in Mechanical & Aerospace Engineering, MS/MEng in Industrial & Systems Engineering, MS in Supply Chain Management, MBA
Available By: Now
Course Description: This course focuses on the interactions and accountabilities for the packaging developer, including sustainability and environmental issues. It reviews three main types of package development projects; growth, quality, and productivity. Examine consumer research, marketing strategy, sustainability, innovation, and feasibility as they relate to packaging development projects.
Sample Relevant Careers: Packaging Development Engineer, Packaging System Engineer, Staff Packaging Engineer

6.3.2 **Course Number:** 16:540:555
Course Name: Simulation of Production Systems
Prerequisites: Probability Theory and Mathematical Statistics
Credits: 3
Course STEM Designation: Yes
Delivery Mode: In-person, online
Offered By: Master of Engineering in Industrial Engineering
Programs Potentially Accepting Credit Transfer: MS in Supply Chain Analytics, MS in Healthcare Analytics and Intelligence
Available By: Now
Course Description: This course introduces discrete event simulation applied to problems in manufacturing, inventory control, and engineering economics. Topics include simulation languages, estimating production system operating characteristics, comparing alternative systems, and validating approximate analytical models.
Sample Relevant Careers: Production Manager and Controller, Supply Chain Manager, Supply Chain Analyst, Operations Manager, Inventory Manager

6.3.3 **Course Number:** 16:731:561
Course Name: E-Commerce Packaging
Prerequisites: None.
Credits: 3
Course STEM Designation: Yes
Delivery Mode: In-person, online

Offered By: Packaging Engineering Program
Programs Potentially Accepting Credit Transfer: MS in Packaging Engineering, MS/MEng in Mechanical & Aerospace Engineering, MS/MEng in Industrial & Systems Engineering, MS in Supply Chain Analytics, MS in Supply Chain Management, MBA
Available By: Fall 2023
Course Description: This course focuses on packaging for online commerce, with considerations of how e-commerce is different from traditional brick-and-mortar retail, and how packaging moves through different e-commerce models. It explores supply chain optimization for efficiency, sustainability considerations in protective packaging, and new technologies and innovations in e-commerce packaging.
Sample Relevant Careers: Project Engineer, Design Engineer, Product Engineer, Program Manager, System Engineering Manager

6.3.4 **Course Number:** 16:731:562
Course Name: Special Topics in Packaging Engineering – Science of Quality
Prerequisites: None.
Credits: 3
Course STEM Designation: Yes
Delivery Mode: In-person, online
Offered By: Packaging Engineering Program
Programs Potentially Accepting Credit Transfer: MS in Packaging Engineering, MS in Supply Chain Analytics, MS/MEng in Mechanical & Aerospace Engineering, MS/MEng in Industrial & Systems Engineering, MS in Supply Chain Management, MBA
Available By: Now
Course Description: This course provides an introduction to issues in the management and control of quality when developing new, sustainable packing. Quality Management has become a science touching upon the tools used to define quality for a given product or system, to solve problems related to conformance to quality expectations, and to know and understand regulatory demands placed on products by national and international agencies.
Sample Relevant Careers: Packaging Development Engineer, Packaging System Engineer, Staff Packaging Engineer

6.3.5 **Course Number**: 22:799:564 (listed as 580 in Part-Time MBA and as 586 by MS in SCM)
Course Name: Operations Analysis
Prerequisites: Basic probability and calculus
Credits: 3
Course STEM Designation: Yes
Delivery Mode: In-person, online, hybrid
Offered By: MS in SCM, MS in Supply Chain Analytics, MS in Healthcare Analytics and Intelligence, MBA
Programs Potentially Accepting Credit Transfer: MS in Supply Chain Analytics, MS in Healthcare Analytics and Intelligence, MS in Supply Chain Management, MBA
Available By: Now

Course Description: The objective of this course is to introduce models and tools to efficiently manage operations and supply chains that produce and distribute products and services. Topics include *Forecasting*, *production and logistics*, *sales and operations planning, inventory management*, *project management* and *manufacturing systems*. We illustrate the effectiveness of these models and tools by games, real-life cases and examples mainly drawn from diverse industries such as manufacturing, transportation, pharmaceutical, fashion and healthcare.
Sample Relevant Careers: Procurement Officer, Buyer, Supply Chain Manager, Supply Chain Analyst, Supply Chain Operations Manager

6.3.6 **Course Number:** 22:544:575
Course Name: Data Analytics and Decision Making
Prerequisites: None
Credits: 3
Course STEM Designation: Yes
Delivery Mode: In-person
Offered By: MBA
Programs Potentially Accepting Credit Transfer: MS in Supply Chain Analytics, MS in Healthcare Analytics and Intelligence, MBA
Available By: Now
Course Description: This course introduces statistics as applied to managerial problems. Emphasis is placed on conceptual understanding as well as on conducting statistical analyses. Students learn the potential and limitations of statistics, gain hands-on experience using Excel as well as comprehensive packages such as R or SAS. Topics include descriptive statistics, continuous distributions, confidence intervals for means and proportions, and regression analysis. Application areas include finance, operations, and marketing. The course introduces the basic concepts of model-building and its role in rational decision-making. Knowledge of specific modeling techniques, such as linear and nonlinear programming, decision analysis, and simulation, along with some insight into their practical application, are acquired. Students are encouraged to take an analytic view of decision-making by formalizing trade-offs, specifying constraints, providing for uncertainty, and performing sensitivity analyses. Students form groups to collect and analyze data and to write and present a final report.
Sample Relevant Careers: Supply Chain Manager, Supply Chain Analyst, Operations Manager

6.3.7 **Course Number**: 22:799:580 (listed as 564 by Full-Time MBA and as 586 by MS in SCM)
Course Name: Operations Analysis
Prerequisites: Basic probability and calculus
Credits: 3
Course STEM Designation: Yes
Delivery Mode: In-person, online, hybrid
Offered By: MS in SCM, MS in Supply Chain Analytics, MS in Healthcare Analytics and Intelligence, MBA
Programs Potentially Accepting Credit Transfer: MS in Supply Chain Analytics, MS in Healthcare Analytics and Intelligence, MS in Supply Chain Management, MBA
Available By: Now

Course Description: The objective of this course is to introduce models and tools to efficiently manage operations and supply chains that produce and distribute products and services. Topics include *Forecasting*, *production and logistics*, *sales and operations planning, inventory management*, *project management* and *manufacturing systems*. We illustrate the effectiveness of these models and tools by games, real-life cases and examples mainly drawn from diverse industries such as manufacturing, transportation, pharmaceutical, fashion and healthcare.
Sample Relevant Careers: Procurement Officer, Buyer, Supply Chain Manager, Supply Chain Analyst, Supply Chain Operations Manager

6.3.8 **Course Number**: 22:799:586 (listed as 564 by Full-Time MBA and as 580 by Part-Time MBA)
Course Name: Operations Analysis
Prerequisites: Basic probability and calculus
Credits: 3
Course STEM Designation: Yes
Delivery Mode: In-person, online, hybrid
Offered By: MS in SCM, MS in Supply Chain Analytics, MS in Healthcare Analytics and Intelligence, MBA
Programs Potentially Accepting Credit Transfer: MS in Supply Chain Analytics, MS in Healthcare Analytics and Intelligence, MS in Supply Chain Management, MBA
Available By: Now
Course Description: The objective of this course is to introduce models and tools to efficiently manage operations and supply chains that produce and distribute products and services. Topics include *Forecasting*, *production and logistics*, *sales and operations planning, inventory management*, *project management* and *manufacturing systems*. We illustrate the effectiveness of these models and tools by games, real-life cases and examples mainly drawn from diverse industries such as manufacturing, transportation, pharmaceutical, fashion and healthcare.
Sample Relevant Careers: Procurement Officer, Buyer, Supply Chain Manager, Supply Chain Analyst, Supply Chain Operations Manager

6.3.9 **Course Number:** 22:140:592
Course Name: Business Law for Managers and Entrepreneurs
Prerequisites: None
Credits: 2
Course STEM Designation: No
Delivery Mode: In-person, online, hybrid
Offered By: MBA
Programs Potentially Accepting Credit Transfer: MS in Supply Chain Management, MBA
Available By: Now
Course Description: This course introduces the legal environment in which managers and the firm function. Students will examine managerial aspects of law including corporate law, contracts, employment, property, tort and product liability, and international law, among other topics that are necessary tools for modern managers and entrepreneurs. The focus will be on learning how the legal system functions and on developing tools to strategically use the law to further the firm's goals, as well as avoid liability and costly litigation.

Sample Relevant Careers: Procurement Officer, Buyer, Supply Chain Manager, Operations Manager

6.3.10 **Course Number:** 22:630:602
Course Name: Product Innovation
Prerequisites: Marketing Management (22:630:586)
Credits: 3
Course STEM Designation: No
Delivery Mode: In-person
Offered By: MBA
Programs Potentially Accepting Credit Transfer: MS in Supply Chain Analytics, MBA
Available By: Fall 2019
Course Description: This course introduces concepts and methods used for coordinating strategy formulation and the identification and evaluation of new product opportunities; planning and organizing the process of development; testing new products and new markets; and commercialization. Special emphasis is given to issues related to supply chain, marketing, and R&D.
Sample Relevant Careers: Marketing Manager, Product Manager

6.3.11 **Course Number**: 22:799:607
Course Name: Supply Chain Management Strategies
Prerequisites: Operations Analysis
Credits: 3
Course STEM Designation: Yes
Delivery Mode: In-person, online
Offered By: MS in Supply Chain Analytics, MS in Healthcare Analytics and Intelligence, MBA
Programs Potentially Accepting Credit Transfer: MS in Supply Chain Analytics, MS in Healthcare Analytics and Intelligence, MS in Supply Chain Management, MBA
Available By: Now
Course Description: This course provides a broad overview of key supply chain strategies, issues, and challenges. Successful supply chain management requires cross-functional integration of key business processes within the firm and across the network of firms that comprise the supply chain. The challenge is to determine how to successfully accomplish this integration. Other topics covered include the management aspects of logistics networks, forecasting, inventory management, supply contracts, strategic alliances, supply chain integration and design, procurement and outsourcing, customer value, international issues, and a quick review of supply chain software. Case studies, supplemented with a Supply Chain Simulation, and guest speakers are used to illustrate the issues discussed in lectures.
Sample Relevant Careers: Supply Chain Manager, Supply Chain Analyst, Operations Manager

6.3.12 **Course Number:** 22:799:608 (listed as 22:799:618 by MS in Supply Chain Management)
Course Name: Global Procurement and Supply Management
Prerequisites: None
Credits: 3

Course STEM Designation: No
Delivery Mode: In-person
Offered By: MBA
Programs Potentially Accepting Credit Transfer: MS in Supply Chain Analytics, MS in Healthcare Analytics and Intelligence, MS in Supply Chain Management, MBA
Available By: Fall 2019
Course Description: Supply Management is the overarching cross-functional management framework that integrates all activities related to the acquisition and management of resources for the organization. It includes global sourcing, supplier relationship management, procurement and purchasing. Supply Management is now recognized as a key strategic initiative to create value for the corporation. This course reviews the demands placed on today's procurement and supply management from the firm's stakeholders and demonstrates their impact on the competitive success and profitability of the organization. Furthermore, it describes ethical, contractual and legal issues faced by procurement, and recognizes the expanding strategic nature of supply management. The major areas covered are procurement as a functional activity, and how effective supply management impacts on total quality, cost, delivery, technology, and responsiveness to the needs of a firm's external customers (insourcing/outsourcing, supplier evaluation, supplier development, and global sourcing). We introduce the tools, techniques, and approaches for managing the procurement and sourcing process (cost/price analysis, negotiations, and contract management). Case studies and outside speakers will be used to illustrate the issues discussed in lectures.
Sample Relevant Careers: Procurement Officer, Buyer, Supply Chain Manager, Operations Manager

6.3.13 **Course Number:** 22:799:618 (listed as 22:799:608 by MBA)
Course Name: Global Procurement and Supply Management
Prerequisites: None
Credits: 3
Course STEM Designation: No
Delivery Mode: Online
Offered By: MS in Supply Chain Management
Programs Potentially Accepting Credit Transfer: MS in Supply Chain Analytics, MS in Healthcare Analytics and Intelligence, MS in Supply Chain Management, MBA
Available By: Fall 2019
Course Description: Supply Management is the overarching cross-functional management framework that integrates all activities related to the acquisition and management of resources for the organization. It includes global sourcing, supplier relationship management, procurement and purchasing. Supply Management is now recognized as a key strategic initiative to create value for the corporation. This course reviews the demands placed on today's procurement and supply management from the firm's stakeholders and demonstrates their impact on the competitive success and profitability of the organization. Furthermore, it describes ethical, contractual and legal issues faced by procurement, and recognizes the expanding strategic nature of supply management. The major areas covered are procurement as a functional activity, and how effective supply management impacts on total quality, cost, delivery, technology, and responsiveness to the needs of a firm's external customers (insourcing/outsourcing, supplier evaluation, supplier development,

and global sourcing). We introduce the tools, techniques, and approaches for managing the procurement and sourcing process (cost/price analysis, negotiations, and contract management). Case studies and outside speakers will be used to illustrate the issues discussed in lectures.
Sample Relevant Careers: Procurement Officer, Buyer, Supply Chain Manager, Operations Manager

6.3.14 Course Number: 22:799.623
Course Name: Supply Chain Digital Transformation
Prerequisites: Supply Chain Management Strategies (22:799:607) and Operations Analysis (22:799:564 or 22:799:580)
Credits: 3
Course STEM Designation: Yes
Delivery Mode: In-person
Offered By: MBA
Programs Potentially Accepting Credit Transfer: MS in Supply Chain Analytics, MS in Supply Chain Management, MBA
Available By: Spring 2021
Course Description: This course addresses digital transformation of supply chains. As such, it discusses drivers that are impacting supply chains. These include high-speed data processing capabilities, artificial intelligence, machine learning, big data analytics, new process automation capabilities, rapid communications, cloud computing, sustainability. The course draws on current information and research globally, and other authoritative sources. The teaching approach and objectives include a strong emphasis on providing students with useful content, engaging them in discussions, soliciting and asking questions, discussing practical and real-world examples, and guest speaker talks, with the goal of developing student analytic and human skills, necessary to detect changes in the business environment and to develop plans/strategies as needed. This course will consist of two parts: (1) a broad introduction to Digital Transformation across industries, with an overview of strategy, methodology, tools, and the current state in multiple industries; and (2) Digital Transformation specific to supply chains.
Sample Relevant Careers: Procurement Officer, Buyer, Supply Chain Manager, Operations Manager

6.3.15 Course Number: 22:799.624
Course Name: Supply Chain Risk Analytics
Prerequisites: Data Analysis and Decision Making (22:960:575)
Credits: 3
Course STEM Designation: Yes
Delivery Mode: In-person
Offered By: MBA
Programs Potentially Accepting Credit Transfer: MS in Supply Chain Analytics, MBA
Available By: Spring 2021
Course Description: Risk management is a multidisciplinary field involving finance, economics, mathematics, and computer science. This course covers an introduction to the theory and practice of risk management with an emphasis on techniques and applications. We consider FMEA (Failure

Mode Effect Analysis), FTA (Fault Tree Analysis), HACCP (Hazzard Analysis and Critical Point Control), simulation, portfolio optimization, value at risk, and coherent risk measures. This course emphasizes the use of mathematical models to analyze risk phenomena and the implementation of risk-aware solutions. In this course, we follow a mathematical modeling approach to analyze and solve real-life applications in the context of risk. Our main tools are probability and mathematical optimization. The course develops the student's ability to analyze risk-related issues in a wide range of applications central to today's risk theory and practice. The skills developed in this course can be applied to a broad range of business problems. The examples and student exercises will focus on the following areas: real options, supply chain management, shop floor operation scheduling, project management, and portfolio analysis and optimization.

Sample Relevant Careers: Procurement Officer, Buyer, Supply Chain Manager, Supply Chain Analyst, Operations Manager, Operations Analyst

6.3.16 **Course Number:** 22:630:625
Course Name: Healthcare Marketing
Prerequisites: None
Credits: 3
Course STEM Designation: No
Delivery Mode: Online
Offered By: MS in Healthcare Analytics and Intelligence
Programs Potentially Accepting Credit Transfer: MS in Supply Chain Analytics, MS in Healthcare Analytics and Intelligence, MBA
Available By: Now
Course Description: The market of healthcare services is quite unique: although patients receive the services, the payment comes from insurances and government agencies. So, who to market to and how to market is a complex question that yields unique answers. This course provides an understanding of the frameworks, tools, and strategies for marketing healthcare services. Main topics covered include patient behavior, market segmentation and targeting, pricing, branding, relationship management, marketing research, promotion, and advertising of healthcare services. Students will learn to develop and implement effective and efficient marketing plans for healthcare services.
Sample Relevant Careers: Healthcare Marketing Analyst, Healthcare Marketing Manager, Account Manager, Market Researcher, Healthcare Service Manager

6.3.17 **Course Number:** 22:799:626
Course Name: Commercial Management of Supply Contracts
Prerequisites: None
Credits: 3
Course STEM Designation: No
Delivery Mode: In-person
Offered By: MBA
Programs Potentially Accepting Credit Transfer: MS in Supply Chain Analytics, MBA
Available By: Fall 2020

Course Description: Intense competition is a key driver that elevates supply contracts and their lifetime management to a strategic level. How well supply chain management professionals structure supply contracts and commercially manage supply transactions will continue to be an important part of how organizations improve, reduce costs, and maximize opportunities. The success of critical commercial transactions depends on flawless execution which in turn requires expert contracting and management skills. Billions of dollars are spent every year by corporations procuring goods and services from their suppliers. Therefore, even small changes and improvements in how supplier contracts are managed can have substantial positive impacts on the bottom line. Supply chain and procurement professionals need to be well versed in the subtleties of how to optimally manage supply contracts and their associated commercial challenges. This course provides supply chain management professionals with skills, strategies and techniques to avoid the pitfalls associated with poor contract management. The course focuses on crucial real-world contract management considerations including how sound contract management practices are an important part of being successful in an increasingly competitive global environment; how to assess, minimize and commercially manage supply contracts by early identification of contract management "red flags;" and practical steps for improving and standardizing contract management techniques in organizations.
Sample Relevant Careers: Procurement Officer, Buyer, Supply Chain Manager

6.3.18 **Course Number:** 22:799:627
Course Name: Strategic Directions of Future Supply Chains
Prerequisites: None
Credits: 3
Course STEM Designation: No
Delivery Mode: Online
Offered By: MS in Supply Chain Management
Programs Potentially Accepting Credit Transfer: MS in Supply Chain Analytics, MS in Supply Chain Management, MBA
Available By: Fall 2020
Course Description: This course addresses strategic aspects of future supply chains. As such, it discusses the evolution of future drivers that will impact supply chains, drawing upon information posted by various organizations/sources, such as Capgemini Digital Transformation Institute, Intergovernmental Panel on Climate Change, OECD, United Nations Industrial Development Organization, IMF, Deloitte's 2016 Global Manufacturing Competitiveness Index, World Economic Forum's 2018 Global Competitiveness Index and other authoritative sources. The teaching approach and objectives include strong emphasis on providing students with useful content, engaging them in discussions, soliciting and asking questions, and practical and real-world examples applicable to developing student analytical skills necessary to detect changes in the business environment and to develop plans/strategies as needed.
Sample Relevant Careers: Procurement Officer, Supply Chain Manager, Operations Manager

6.3.19 **Course Number:** 22:799:629
Course Name: Healthcare Law and Ethics
Prerequisites: None

Credits: 1
Course STEM Designation: No
Delivery Mode: Online
Offered By: MS in Healthcare Analytics and Intelligence
Programs Potentially Accepting Credit Transfer: MS in Healthcare Analytics and Intelligence, MBA
Available By: Now
Course Description: This course covers important legal and regulation issues such as Stark law, anti-kickback, anti-trust, and EMTALA, as well as their implications on the operations and management of healthcare services organizations. It provides updates on the last legislation changes and also discusses physician employment models and work ethics issues in healthcare services organizations.
Sample Relevant Careers: Healthcare Service Manager, Healthcare Consultant, Healthcare Advocate, Healthcare Policy Maker

6.3.20 **Course Number**: 22:799:638
Course Name: Healthcare Analytics
Prerequisites: Data Analysis and Decision Making (22:544:575)
Credits: 3
Course STEM Designation: Yes
Delivery Mode: Hybrid
Offered By: MS in Healthcare Analytics and Intelligence
Programs Potentially Accepting Credit Transfer: MS in Supply Chain Analytics, MS in Healthcare Analytics and Intelligence, MBA
Available By: Now
Course Description: Healthcare analytics is the branch of analysis that focuses on offering insights into hospital management based on data collected from four areas: claims and cost data, pharmaceutical and research and development (R&D) data, clinical data, and patient behavioral and sentimental data. This course reviews data sources, data processing, and data analytics models and tools with a focus on care provider performance in cost efficiency, revenue, process, clinical outcomes, and patient safety, and patient experience. Upon completing the course, students should be able to perform business analytics in the above areas. The new course will greatly improve the relevance of healthcare analytics curriculum and also allow students to have hands-on and guided practices of analytics with common data in healthcare industry.
Sample Relevant Careers: Healthcare Analyst, Healthcare Strategist, Healthcare Database Manager, Healthcare Service Manager, Healthcare General Manager, Healthcare IT Professional, Healthcare Consultant

6.3.21 **Course Number:** 22:799:639
Course Name: Supply Chain Risk and Disruption Management
Prerequisites: None
Credits: 3
Course STEM Designation: No
Delivery Mode: In-person, online

Offered By: MS in Supply Chain Management, MBA
Programs Potentially Accepting Credit Transfer: MS in Supply Chain Analytics, MS in Supply Chain Management, MBA
Available By: Now
Course Description: Properly addressing risks and facing possible disruptions are of primary importance to supply chain management. With the wake of high consequence disruptive events, risk identification and disruption response activities have become ever more critical. The objective of the course is to provide an overview of key supply chain risk areas, particularly with the proliferation of outsourcing, use of information technology and global logistics. Equally important is how companies manage the preparation, mitigation and response strategies to major disruptive events. Topics covered include science of catastrophes, vulnerability and threat assessments, resources and capabilities identification/integration, basic crisis management, contingency planning, disaster recovery and business continuity in supply chain settings. Scenario based experiments (table-top exercises) will provide mock situations where students will make decisions on how to handle supply chain disruption. Case-based studies will be used to provide hands-on learning to illustrate the issues discussed in lectures.
Sample Relevant Careers: Procurement Officer, Buyer, Supply Chain Manager, Operations Manager

6.3.22 **Course Number:** 22:799:640 (listed as 22:799:694 by MS in Supply Chain Management)
Course Name: Supply Chain Financial Management
Prerequisites: None
Credits: 3
Course STEM Designation: No
Delivery Mode: In-person
Offered By: MBA
Programs Potentially Accepting Credit Transfer: MS in Supply Chain Analytics, MS in Supply Chain Management, MBA
Available By: Now
Course Description: Supply Chain Management is generally focused on product and information flow but is largely driven by financial and accounting considerations. An often-unknown fact is that the supply chain is designed to enhance the financial value of a corporation, or ultimately to serve the chief financial officer. The objective of the course is to introduce key financial and accounting aspects of SCM and instill a financially oriented mindset by integrating said aspects into the analysis of SCM issues and systems. Topics covered include supply chain costing, working capital management, supply chain financing, supply chain risk management, and supply chain contracts and purchasing. Some case studies will illustrate the concepts learned.
Sample Relevant Careers: Procurement Officer, Buyer, Supply Chain Manager, Operations Manager

6.3.23 **Course Number**: 22:799:641
Course Name: Artificial Intelligence for Supply Chain Management
Prerequisites: Operations Analysis (22:799:580 or 22:799:586)
Credits: 3

Course STEM Designation: Yes
Delivery Mode: In-person
Offered By: MS in Supply Chain Analytics, MBA
Programs Potentially Accepting Credit Transfer: MS in Supply Chain Analytics, MS in Healthcare Analytics and Intelligence, MBA
Available By: Now
Course Description: In the last s3everal decades, the supply chain area has become increasingly data-driven. Traditional statistical techniques have helped supply chain planners improve operations efficiency (e.g., a better match between demand and supply via forecasting). With the growth of data accessibility in the e-commerce age and the power of new programming platforms, innovative AI methods have emerged to help supply chain managers organize/analyze data and derive actionable insights. This SCM graduate elective course will help train students who are interested in connecting AI with supply chain applications and integrating automated data processing tools with supply chain management.
Sample Relevant Careers: Supply Chain Manager, Supply Chain Analyst, Operations Manager, Operations Analyst

6.3.24 **Course Number:** 22:799:651
Course Name: Healthcare Innovation and Technology Management
Prerequisites: None
Credits: 1
Course STEM Designation: Yes
Delivery Mode: Hybrid
Offered By: MS in Healthcare Analytics and Intelligence
Programs Potentially Accepting Credit Transfer: MS in Healthcare Analytics and Intelligence, MBA
Available By: Now
Course Description: The course examines, from a managerial perspective, the critical issues in planning and implementation of healthcare technologies such as electronic health record (EHR), Radio Frequency Identification (RFID), telemedicine, social media and mobile devices, personal health records, and other emerging technologies. It examines salient issues such as benefits from, selection of, and user support of EHR. It also addresses emerging concepts of Regional Health Information Exchanges and provides an overview of Practice Management Systems.
Sample Relevant Careers: Healthcare Service Manager, Healthcare Analyst, Healthcare IT Professional

6.3.25 **Course Number:** 22:799:653
Course Name: Product Design and Supply Chain Alignment
Prerequisites: None
Credits: 1
Course STEM Designation: No
Delivery Mode: In-person
Offered By: MBA
Programs Potentially Accepting Credit Transfer: MBA

Available By: Now
Course Description: It is critical for the success and survival of most organizations to effectively launch new products into the market. New Product Commercialization is the process and associated set of activities related to the development of new products and their subsequent product launch and commercialization into the marketplace. The supply chain plays a critical role in this process. This course will cover the new product design phase, make vs. buy decisions, optimal sourcing decisions, early involvement of suppliers and the use of strategic partners and, finally, the eventual launching of the product to the market and end customers. In many progressive companies, the Supply Chain takes a leadership role to align the business across multiple departments to ensure successful new product launches.
Sample Relevant Careers: Product Manager, Supply Chain Manager, Procurement Officer

6.3.26 **Course Number:** 22:799:670
Course Name: Business Intelligence for Supply Chains and Marketing
Prerequisites: Operations Analysis (22:799:580 or 22:799:586)
Credits: 3
Course STEM Designation: Yes
Delivery Mode: In-person
Offered By: MS in Supply Chain Analytics, MBA
Programs Potentially Accepting Credit Transfer: MS in Supply Chain Analytics, MS in Healthcare Analytics and Intelligence, MBA
Available By: Now
Course Description: Business intelligence (BI) is a set of technologies and processes that allow people at all levels of an organization to access, interact with and analyze data. In a data-rich business environment, BI can help a management team to operate efficiently, discover new market opportunities and improve business performance. This course focuses on data science techniques, analytical toolboxes and business applications in supply chain and marketing management. The course is structured as a combination of lectures, in-class case studies and group projects. All data analysis, optimization and simulation models are implemented in R (https://cran.r-project.org/ and https://www.rstudio.com/). R is a powerful, extensible and free programming language, which is gaining popularity for data scientists and business analysts. Students are expected to learn how to integrate BI with supply chain and marketing management, improve their data/analytical skills and deepen their knowledge of supply chain and marketing science from a quantitative perspective.
Sample Relevant Careers: Procurement Officer, Supply Chain Manager, Supply Chain Analyst, Operations Manager, Operations Analyst, Marketing Analyst

6.3.27 **Course Number:** 22:799:672 (listed as 22:799:699 by MS in Supply Chain Management)
Course Name: Supply Chain Sustainability
Prerequisites: None
Credits: 3
Course STEM Designation: Yes
Delivery Mode: In-person
Offered By: MS in Supply Chain Analytics, MBA

Programs Potentially Accepting Credit Transfer: MS in Supply Chain Analytics, MS in Supply Chain Management, MBA
Available By: Now
Course Description: There are global experiences and examples that show sustainability criteria in the 'upstream' supply chain management and procurement process. Corporations can both improve environmental performance, while addressing ethics, social regeneration, and economic concerns (e.g., the 'triple bottom-line'). This course will allow students to participate in applied research to explore the application of environmentally responsible supply chain principles which includes designing supply chain management and procurement schemes which address environmental, social and ethical considerations in organizational policy development as well as the procurement process. Research themes may include: the public and private supply chain management and procurement process, green purchasing process, contract design, procurement which promotes low carbon emission considerations and zero waste (avoidance and minimization), social and economic regeneration, civic infrastructure policy, e-procurement applications, and cost cutting measures derived from life cycling costing modeling. The goal is to provide students with different experiences to examine environmental management from a supply chain management perspective.
Sample Relevant Careers: Procurement Officer, Production Planner, Supply Chain Manager, Operations Manager

6.3.28 **Course Number:** 22:799:676 (listed as 22:799:690 by MS in Supply Chain Management)
Course Name: Lean Six Sigma
Prerequisites: None
Credits: 3
Course STEM Designation: Yes
Delivery Mode: In-person
Offered By: MBA, MS in Supply Chain Analytics
Programs Potentially Accepting Credit Transfer: MS in Supply Chain Analytics, MS in Healthcare Analytics and Intelligence, MS in Supply Chain Management, MBA
Available By: Now
Course Description: Lean six sigma is an application of the quantitative six sigma quality management techniques within a lean enterprise. The goal is to create an efficient organization that continuously reduces waste and operates at the most efficient levels possible. In addition to covering the fundamentals of Lean and Six Sigma, this course will equip students with other important tools and strategies to improve the performance of business processes. Students will practice solving business problems and improving processes through case studies, team exercises and simulations, self-assessments, and guest lectures. Topics covered will include: six sigma improvement methodology and tools, lean manufacturing tools and approaches, dashboards, and other business improvement techniques. Students will also gain an understanding of the strategic importance of business improvement, the need for fact-based management, the significance of change management, and how to deploy these tools in different parts of the value chain.
Sample Relevant Careers: Procurement Officer, Production Planner, Supply Chain Manager, Operations Manager

6.3.29 **Course Number:** 22:799:678
Course Name: Supply Chain Social Compliance
Prerequisites: None
Credits: 3
Course STEM Designation: No
Delivery Mode: Online
Offered By: MS in Supply Chain Analytics, MBA
Programs Potentially Accepting Credit Transfer: MS in Supply Chain Analytics, MBA
Available By: Fall 2020
Course Description: Today's firms and supply chain managers must take into account demands of consumers and other stakeholders that their supply chains meet international labor and human rights standards. Labor and human rights practices of multi-national corporations have been under increasing scrutiny, and firms must now comply with corporate transparency laws as well as ensure compliance by suppliers across the globe. This course will examine the best practices that firms are implementing to ensure supply chain compliance through procurement, sourcing, monitoring, traceability, and contracts.
Sample Relevant Careers: Human Resources Manager, Procurement Officer, Supply Chain Manager, Operations Manager

6.3.30 **Course Number:** 22:799:679 (listed as 22:799:698 by MS in Supply Chain Management)
Course Name: Global Logistics Management
Prerequisites: None
Credits: 3
Course STEM Designation: No
Delivery Mode: In-person
Offered By: MS in Supply Chain Analytics
Programs Potentially Accepting Credit Transfer: MS in Supply Chain Analytics, MS in Supply Chain Management, MBA
Available By: Now
Course Description: This course is designed to provide students with an understanding of the strategic and tactical elements of logistics management. This course will examine the forward and reverse forms of transportation and storage for supply chain management. In addition to studying transportation modal choices, logistics and transportation infrastructure in the U.S. and around the world will be discussed. Other relevant topics will include cross-docking, reverse logistics tactics, multi-modal freight operations, high-tech automated warehousing and order delivery and current topics in the logistics industry. We will take a total systems approach to the management of all those activities involved in the forward and reverse movement and storage of products and related information through the supply chain. The teaching method will be a combination of case analysis, lecture and class discussion. Also, guest executives will discuss how they created and managed logistics innovation.
Sample Relevant Careers: Procurement Officer, Buyer, Supply Chain Manager, Operations Manager, Transportation Planner, Transportation Coordinator

6.3.31 **Course Number:** 22:799:689
Course Name: Supply Chain Law and Governance
Prerequisites: Business Law for Managers and Entrepreneurs (22:140:592)
Credits: 3
Course STEM Designation: No
Delivery Mode: Online
Offered By: MS in Supply Chain Analytics, MS in Supply Chain Management
Programs Potentially Accepting Credit Transfer: MS in Supply Chain Analytics, MS in Supply Chain Management, MBA
Available By: Now
Course Description: Law impacts every stage of the product and service cycle. Supply chain managers and professionals must therefore be conversant with the substance and language of a number of legal issue areas that are tightly bound with strategic supply chain management. The legal topics covered in the course will include but are not limited to supply chain and procurement contracts, dispute settlement, finance, international trade, transportation, tort, international investment law, and labor and environmental supply chain governance. Students will learn key legal concepts and also learn how to apply them to real life situations.
Sample Relevant Careers: Procurement Officer, Buyer, Supply Chain Manager, Operations Manager

6.3.32 **Course Number:** 22:799:690 (listed as 22:799:676 by MS in Supply Chain Analytics)
Course Name: Lean Six Sigma
Prerequisites: None
Credits: 3
Course STEM Designation: Yes
Delivery Mode: Online
Offered By: MS in Supply Chain Management
Programs Potentially Accepting Credit Transfer: MS in Supply Chain Analytics, MS in Healthcare Analytics and Intelligence, MS in Supply Chain Management, MBA
Available By: Now
Course Description: Lean six sigma is an application of the quantitative six sigma quality management techniques within a lean enterprise. The goal is to create an efficient organization that continuously reduces waste and operates at the most efficient levels possible. In addition to covering the fundamentals of Lean and Six Sigma, this course will equip students with other important tools and strategies to improve the performance of business processes. Students will practice solving business problems and improving processes through case studies, team exercises and simulations, self-assessments, and guest lectures. Topics covered will include: six sigma improvement methodology and tools, lean manufacturing tools and approaches, dashboards, and other business improvement techniques. Students will also gain an understanding of the strategic importance of business improvement, the need for fact-based management, the significance of change management, and how to deploy these tools in different parts of the value chain.
Sample Relevant Careers: Procurement Officer, Production Planner, Supply Chain Manager, Operations Manager

6.3.33 **Course Number:** 22:799:694 (listed as 22:799:640 by MBA)
Course Name: Supply Chain Financial Management
Prerequisites: None
Credits: 3
Course STEM Designation: No
Delivery Mode: Online
Offered By: MS in Supply Chain Management
Programs Potentially Accepting Credit Transfer: MS in Supply Chain Analytics, MS in Supply Chain Management, MBA
Available By: Now
Course Description: Supply Chain Management is generally focused on product and information flow but is largely driven by financial and accounting considerations. An often-unknown fact is that the supply chain is designed to enhance the financial value of a corporation, or ultimately to serve the chief financial officer. The objective of the course is to introduce key financial and accounting aspects of SCM and instill a financially oriented mindset by integrating said aspects into the analysis of SCM issues and systems. Topics covered include supply chain costing, working capital management, supply chain financing, supply chain risk management, and supply chain contracts and purchasing. Some case studies will illustrate the concepts learned.
Sample Relevant Careers: Procurement Officer, Buyer, Supply Chain Manager, Operations Manager

6.3.34 **Course Number:** 22:799:696
Course Name: Healthcare Services Management
Prerequisites: None
Credits: 3
Course STEM Designation: No
Delivery Mode: Hybrid
Offered By: MS in Healthcare Analytics and Intelligence, MBA
Programs Potentially Accepting Credit Transfer: MS in Supply Chain Analytics, MS in Healthcare Analytics and Intelligence, MBA
Available By: Now
Course Description: This course introduces trends, strategies, techniques, and best practices to improve unit, organizational, and integrated delivery system performance by applying key concepts from operations and supply chain management to the healthcare context. The first half of the semester focuses on the value-based purchasing programs including cost/efficiency, patient outcomes, patient safety, patient experience, and clinical processes. The second half of the semester focuses on service components including vertical integration and professional services outsourcing, service process design, quality improvements, healthcare supply chain management, project management, and healthcare analytics. The objective is to effectively manage information, material, and financial exchanges for healthcare provider organizations to improve the quality of services and efficiency.
Sample Relevant Careers: Healthcare Service Manager, Healthcare General Manager, Physician, Nurse, Healthcare Analyst, Healthcare Database Manager, Healthcare Strategist, Healthcare Supply Chain Professional

6.3.35 **Course Number:** 22:799:698 (listed as 22:799:679 by MS in Supply Chain Analytics)
Course Name: Global Logistics Management
Prerequisites: None
Credits: 3
Course STEM Designation: No
Delivery Mode: Online
Offered By: MS in Supply Chain Management
Programs Potentially Accepting Credit Transfer: MS in Supply Chain Analytics, MS in Supply Chain Management, MBA
Available By: Now
Course Description: This course is designed to provide students with an understanding of the strategic and tactical elements of logistics management. This course will examine the forward and reverse forms of transportation and storage for supply chain management. In addition to studying transportation modal choices, logistics and transportation infrastructure in the U.S. and around the world will be discussed. Other relevant topics will include cross-docking, reverse logistics tactics, multi-modal freight operations, high-tech automated warehousing and order delivery and current topics in the logistics industry. We will take a total systems approach to the management of all those activities involved in the forward and reverse movement and storage of products and related information through the supply chain. The teaching method will be a combination of case analysis, lecture and class discussion. Also, guest executives will discuss how they created and managed logistics innovation.
Sample Relevant Careers: Procurement Officer, Buyer, Supply Chain Manager, Operations Manager, Transportation Planner, Transportation Coordinator

6.3.36 **Course Number:** 22:799:699 (listed as 22:799:672 by MS in Supply Chain Analytics and MBA)
Course Name: Supply Chain Sustainability
Prerequisites: None
Credits: 3
Course STEM Designation: Yes
Delivery Mode: Online
Offered By: MS in Supply Chain Management
Programs Potentially Accepting Credit Transfer: MS in Supply Chain Analytics, MS in Supply Chain Management, MBA
Available By: Now
Course Description: There are global experiences and examples that show sustainability criteria in the 'upstream' supply chain management and procurement process. Corporations can both improve environmental performance, while addressing ethics, social regeneration, and economic concerns (e.g., the 'triple bottom-line'). This course will allow students to participate in applied research to explore the application of environmentally responsible supply chain principles which includes designing supply chain management and procurement schemes which address environmental, social and ethical considerations in organizational policy development as well as the procurement process. Research themes may include: the public and private supply chain management and procurement process, green purchasing process, contract design, procurement

which promotes low carbon emission considerations and zero waste (avoidance and minimization), social and economic regeneration, civic infrastructure policy, e-procurement applications, and cost cutting measures derived from life cycling costing modeling. The goal is to provide students with different experiences to examine environmental management from a supply chain management perspective.

Sample Relevant Careers: Procurement Officer, Production Planner, Supply Chain Manager, Operations Manager