The Insider Course Report

Master of Business and Science (MBS) degree

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Rutgers Schedule of Classes

Welcome to the new semester!

This newsletter describes the courses the Professional Science Master's program will offer in spring 2025. We encourage you to chart your path and choose classes tailored to your career goals (remember your Odyssey plans!). Read carefully, and feel free to explore electives outside of your concentration. If you need guidance, check out our student resources and schedule an online session with an academic advisor. Please pay attention to Canvas announcements and your Rutgers email— we share essential information and exciting events!

And now for the courses…

RUTGERS UNIVERSITY

BUSINESS

Business Core Courses

Every semester, we offer all our core business courses.

- **Principles of Finance & Accounting** (16:137:530) is a general course combining both finance and accounting. It's a great business course for new students.
- The popular **Communication & Leadership** (16:137:502) has options for classes on Mondays or Tuesdays (the Tuesday class is reserved for students with 3+ years of work experience). Consider this course if you plan on making a career move. In this class, you'll have the chance to interview leaders in your field. This is an excellent opportunity to speak with someone who can make a difference in your career—consider interviewing your CEO, your boss's boss, a local business leader, or a professional whom you admire. Give yourself enough time to make these connections! This is an opportunity to make a significant, lasting impact on your professional future. Additionally, this course was featured on Rutgers Today for Prof. Cashman's innovative assignment, encouraging students to perform random acts of kindness. And get ready to meet an executive coach – executive coaching is a significant part of this class.
- **Market Assessment for Business & Science** (16:137:507) offers asynchronous online courses or in-person Thursday-night meetings. This class includes a field trip to IKEA (online students will visit their local IKEAs).
- The one-credit **Ethics** (16:137:500) course is also offered this semester.
- **Capstone** (16:137:600) is offered on Wednesday evenings, culminating in a presentation in front of guest judges. We also have a new hybrid version of the class, which will have some class meetings. The final presentation is also open to all students in the program for colloquium credit. We encourage you to join us—especially students who plan to take the capstone in the spring. This is a chance to see what is expected. This course also includes an optional Capstone retreat, where you can join us for a day of learning and connecting with your classmates and instructors. Save the date! The spring 2025 retreat will be held 2/21 and 2/22.

Course Catalog

For more information on courses, check the course catalog.

MBS students attend a Rutgers football game at the latest Capstone retreat ➡️

BUSINESS

Business Elective Courses

One popular business elective is Project Management –the #1 skill for all science and technical jobs! (16:137:601 17098/17099 **Special Topics: Project Management for the Scientific**).

TOPICS IN MANAGEMENT: The Topics in Management course is a shell for some tremendous professional courses offered at Rutgers. <u>Learn more about how to register</u>. The is a popular series of courses given by the Executive Education division of the Rutgers Business School.

Need some work experience or interested in experiential learning? Take a **professional or research internship** as a business or science elective. This is for students who have just received an internship (<u>see our internship page here</u>). The internship course <u>runs alongside a professional or research internship</u> and provides professional development and leadership training from PSM executive coach <u>Abbe Rosenthal</u>. Last but not least—**Externships** are a design-based experience where students work on industry-sponsored projects. <u>Learn more about externships</u>, or attend one of our <u>externship webinars</u> for more information. You can also read about a recent externship <u>partnership with NJ Pathways and NJBDA</u>. Receive credit for the project or complete it simply for experience (participate as "club"—to put on your resume). Externships are available to students in all concentrations and even working students to try something new and build your portfolio! There are even bootcamps where you can try out other careers (like the ever-popular Wall Street Bootcamp!).

Special Topics Courses

We run a number of courses under the title "Special Topics" during the semester that cover a variety of areas. Many courses share the same number—register for the corresponding section/index number for the topic that interests you. Read further to learn more about each topic.

- 16:137:601 17098 and 17099 Special Topics: Project Management
- 16:137:601 22171 Special Topics: Alcoholic Beverage Regulation: Wine, Beer, and Spirits
- 16:137:602 17100 Special Topics: Applied Regression Analysis
- 16:137:602 17101 Special Topics: Frontend Programming & Development
- 16:137:603 17103 Special Topics: Google CyberCert/Security Plus Prep
- 16:137:603 17104 Special Topics: Cyber Security Practicum
- 16:137:606 17106 Special Topics: Sustainable Supply Chain/Green Purchasing
- 16:137:606 17107 and 23266 Special Topics: Data Storytelling

SCIENCE

General Science Electives:

These courses can be used as business electives.

In today's data-driven landscape, no skill is as ubiquitous as the need to clearly see, understand, and communicate insights hidden within our data. We offer two courses to support students learning how to analyze data and visually communicate insights. Both courses leverage Tableau, the industry-leading data visualization software, but which is right for you?

Business Intelligence with Visual Analytics (16:137:553) is required for Analytics concentration students. It focuses on analytics, using Tableau to learn and apply fundamental data visualization, visual analysis, and data storytelling techniques with real-world datasets. This course is software-heavy, and includes minor coding (similar to Excel functions). (Statistics is recommended as a prereq, but not required.)

Special Topics: Data Storytelling (16:137:606 17107) is designed for less technical students and focuses on data storytelling. Students use Tableau at a higher level (zero coding) to build best-practice data visualizations and storytelling presentations that communicate data-driven insights using accessible, real-world data. (Prerequisite: None) Students in all concentrations are invited to take Data Storytelling. Read more about this course on our blog.

Keep an Eye Out!

We host events throughout the semester including networking events, panels with industry experts, series for professional growth, and more! Keep an eye out for emails through Canvas or follow us on X (formerly Twitter), LinkedIn, Facebook, and Instagram.

AI in Modern Drug Discovery & Development panel →

SCIENCE

Life Sciences

The **Fundamentals of Personal Care Science** (16:137:570) is not just for Personal Care Science students —it's also excellent as an elective for students in Biotechnology, Drug Discovery and Development, Food Science, and Global Food Technology to learn about cosmetic chemistry. We also offer a follow-up course: **Product Development & Formulations for Personal Care Science** (16:137:571), taught by the energetic Dr. Ricardo Diez online on Tuesday nights.

For those in Food Science: **Global Food Supply & Quality Management** (16:137:579) is excellent for both Food Science and Personal Care Science students. **Food Business Innovation** (16:137:575) is also running – and appropriate for Personal Care and even Drug Discovery. Lastly, **Special Topics: Alcoholic Beverage Regulation: Wine, Beer, and Spirits** (16:137:601 22171) is an excellent course for those interested in regulatory and alcohol (sorry, there is no tasting in the class 😊—but you can read more about it on our blog).

For Biotech: **Fundamentals of Biological Chemistry in the Biotech Industry** (16:137:514) is offered online on Wednesday nights. This is a biochemistry course that studies biochemical pathways as they relate to the discovery of new drugs in several therapeutic areas, such as oncology. The course is suitable for students in any of the life science concentrations. **NextGen Biotech/Genomics** (16:137:616) and **Bioinformatics: Tools for Genomic Analysis** (16:137:617) are great electives for those in Drug Discovery and Development, Food Science, Personal Care Science, and Chemistry. If you want to strengthen your skills in bioinformatics, consider taking the Python, regression, database, and BI courses we offer.

For Drug Discovery and Development: we offer **Drug Discovery Through Pre-Clinical Development** (16:137:511 – our "practicum" class for Drug Discovery) and **Practical Aspects of Clinical Trial Design/Conduct** (16:137:580). These courses are also great electives for Biotech and Personal Care Science (cosmetic regulatory!) folks. We also offer **Concepts in Corporate Sustainability** (16:137:555), which examines corporate engagement with regard to the environment.

For Sustainability: we offer **Special Topics: Sustainable Supply Chain/Green Purchasing** (16:137:606 17106). Professor Kevin Lyons leads this project course. This is an excellent course for engineering management students and sustainability students (and counts as a science course). It is open to all other students who want to do a project around sustainability, supply chain, and green purchasing (especially for food science and global food – Lyons will discuss case studies related to the food industry). Students will work with companies and implement sustainability solutions.

SCIENCE

Computer/Information/Engineering Students

For those in IT, Engineering, Analytics, and UXD, several core and elective courses are offered this spring. The **Essentials of Cybersecurity and Secure Systems** (16:137:561) course covers the fundamentals of cybersecurity and building secure systems. The ever-popular **Enterprise Software Architecture** (16:137:541), offered online on Monday nights, provides comprehensive coverage of the IT industry and where IT is used. It is also great for those in Cybersecurity, as one of the skills that comes up for Cyber (and for analytics) is the ability to design and analyze software systems. This class also covers Agile Development, a crucial skill for Product Managers (another popular skill in job postings!). For Cyber students, we've also introduced the certification course **Special Topics: Google CyberCert/Security Plus Prep** 16:137:603 17103) and the practicum course **Special Topics: Cyber Security Practicum** (16:137:603 17104) with Cybersecurity Coordinator Lars Sorensen.

Every semester, we run the popular **Python Methodologies** (16:137:552). This course is appropriate for anyone who needs to know Python programming and scripting. The course is offered entirely asynchronously or asynchronously with a few in-person meetings. It is taught by the ever-popular "Big Lars"—if you thought programming couldn't be fun (or funny), check out Lars's lectures! **Database & Data Warehousing** (16:137:538) covers the basics of database technology – perfect for those in Analytics, UXD, IT, and for those interested in learning about informatics. Most importantly, it covers the #1 programming skill for almost all science/tech jobs – SQL.

Fundamentals of Analytics (16:137:550) is offered online on Wednesday nights. **Special Topics: Applied Regression Analysis** (16:137:602 17100) is provided online with a synchronized office hour/lecture on Fridays – this is an MBS regression class that uses SAS and R to teach regression. **Applied Artificial Intelligence from Concept to Market** (16:137:562) is also offered online on Tuesday nights. It utilizes Google TensorFlow. This hands-on class is essential for any science or engineering student who wants to learn AI. If you have Python, you can take this AI course. This spring, we also offer Introduction to **Cloud & Big Data Systems** (16:137:539) and **Advanced Analytics and Practicum** (16:137:551).

Introduction to **User Experience Design** (16:137:531), required for IT and UXD and one of our most popular courses, is online in the spring (the 1-week in-person section is in the fall). UXD covers how to think about developing a website/ web presence/ computer application from the user's perspective. If you are thinking about growing a business involving the web, whether in cosmetics or biomedical devices, this course could help! **Contextual Inquiry** (16:137:532, a course in UXD sequence) is running this semester. This is a required course for those in UXD and an elective for those interested in learning more about UXD. We are also offering **User Experience Design Practicum** (16:137:536), **Introduction to Visual Design for User Experience** (16:137:533), and **Frontend Programming & Development** (16:137:602 17101—learn TypeScript and React!).

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Computer/Information/Engineering Students Continued

For those in analytics, check out **Data Structures and Algorithmic Problem Solving in Python** (56:198:501). This course covers the fundamentals of data structures. If you are interested in data science, computing, or want to understand computer science fundamentals – take this course! It is the only data structures course in Python. Remote students can still take this course–the lectures are live-streamed. The course is offered through Rutgers - Camden.

Lastly, **Fundamentals of Systems Engineering for Engineering Management** (16:137:560) covers the design requirements of putting together a big project. It's a fantastic course if you're interested in a business analyst (BA) role, systems engineering, UX, engineering management, software engineering, software management, cybersecurity, product management, or IT management. While some IT background is necessary, it is not too tech-heavy and a perfect course for anyone who will eventually have to lead an IT project (even from the business perspective) or is part of a technology team (like UXD). This course also covers systems thinking—a hot topic.

OTHER COURSES OF INTEREST:

Here are courses of interest to MBS students offered by other Rutgers departments.
- (16:540:520) **Supply Chain and Logistics Engineering** – offered online on Tuesday nights.
- (16:540:580) **Quality Management** – This course is offered by Industrial Engineering and covers the basics of quality and reliability. Appropriate for all engineering, especially engineering management, and those working in the life sciences and bio/pharma area (biotech, drug discovery & development, personal care, food science).
- (16:765:585) **Bioinformatics** – a basic course in bioinformatics and super-important for those in biotech & drug discovery. For those who are interested in bioinformatics, Python is the language of choice.
- (34:970:523) **Environmental Law & Policy** – offered through the Bloustein School of Planning and Public Policy, meets Tuesdays in downtown New Brunswick.
- (34:970:655) **Sem. Urban Planning: Technology, Science, and Global Development** - Prof. Salzman will be talking about technology, (ethics) and global development. This is a great course for those engineers and scientists looking for a business analysis and interested in technology development.

Need to take a semester off?

If you are a current MBS student and you need to take a temporary leave (fall/spring) due to extenuating circumstances such as work travel, illness, etc, register for **matriculation continued** (16:137:800) for a maximum of two consecutive terms. This is essentially a placeholder to keep your status active. Please also notify your advisor.