The Insider Course Report – Spring 2023

Welcome to a new semester and a new year. This newsletter provides descriptions of the courses that the Professional Science Master’s program will offer in spring 2023. We encourage you to chart your own path and choose courses tailored to your own personal career goals (remember your odyssey plans, and if you want to learn more about them – attend our DYL workshop). Read carefully and feel free to explore electives outside of your concentration. If you need guidance, schedule an online session with an academic advisor.

1. BUSINESS

Business Required Core Classes:

**Principles of Finance & Accounting** is a general course combining both finance and accounting (asynchronous online or in-person on Tuesdays). It is a great business course for new students. The popular **Communication & Leadership** has options for synchronous online classes on Mondays or Tuesdays (the Tuesday class is reserved for students with work experience). Consider this course if you plan on making a career move. In this class, students interview leaders in their field or professionals that they want to impress and meet. Think carefully about who you want to interview. This is an opportunity to get in front of someone who can make a difference in your career—previous students have interviewed their own CEOs. Plan ahead to take advantage! This is an opportunity to make a major and lasting impact on your professional future! **Market Assessment for Business & Science** offers asynchronous online courses or in-person meetings on Thursday nights. This class includes a field trip to IKEA. Online students will visit their local IKEAs. There are guest lecturers that are open to everyone–so make sure to check out the events. The 1 credit **Ethics** course is also offered this semester. Finally, the **Capstone** course is offered online on Wednesday evenings, which culminates in a presentation in front of guest judges. 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, it is important to see the expectations. Check the events listing on the [mbs.rutgers.edu](https://mbs.rutgers.edu) website for the final presentation date and time. You can also read about past capstone presentations.

Business Electives:

One popular business elective is Project Management – this is the #1 skill for all science and technical jobs! (16:137:601 **Special Topics**: section 90, *Project Management for the Scientific*). Another popular business skill is supply chain—check out our **Sustainable Supply Chain/Green Purchasing** (16:137:606) under the Life Sciences section of this report. The Business Intelligence course (see below) is also popular and can be taken as a business elective.

**TOPICS IN MANAGEMENT:** The topics in management course is a shell for some great professional courses offered at Rutgers. Students have the option to take any of **Mini-MBA** courses (16:137:651 **Topics in Management and Professional Development**). The Mini-MBA is a popular series of courses given by the Executive Education division of the Rutgers Business School. In addition to the Mini-MBA

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there are other executive education classes available (these are labeled “CCPD” and include the important tech electives such as CompTIA certifications and Certified Ethical Hacker, etc.).

Another great elective is the Business Intelligence with Visual Analytics (16:137:553) class. See the description later in this course report. This can be used as a business elective (or science elective for some concentrations).

Need some work experience or just experiential learning? Students can take a professional internship or research internship as either a business or science elective. This is for students who have just received an internship (see our internship page here). The internship course has an online component taught by Abbe Rosenthal. We also offer externships—a design-based experience where students work on industry-sponsored projects. Visit our website to learn more about externships, or attend one of our externship webinars for more information. Read about the recent Microsoft Design Thinking Product externship. You can 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 (try out the Wall Street Bootcamp).

2. SCIENCE

Life Sciences:

The Fundamentals of Personal Care Science (16:137:570) is now offered both semesters! This spring it is offered online on Monday nights. While required for the personal care concentration, this course is great 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). It is a popular course taught by Dr. Ricardo Diez online on Tuesday nights. For those in Food Science: Global Food Supply & Quality Management (16:137:579) is great for food science, global food technology and personal care science students. Food Business Innovation (16:137:575) is also running – and appropriate for personal care and even drug discovery. Lastly, the new (16:137:601) Special Topics: section 91, Alcoholic Beverage Regulation: Wine, Beer and Spirits is a great course for those interested in regulatory and alcohol (sorry, there is no tasting in the class 😞).

For Biotech: 16:137:514 Fundamentals of Biological Chemistry in the Biotech Industry is offered online on Wednesday nights. 16:137:616 NextGen Biotech/Genomics (online on Thursday nights) and 16:137:617 Bioinformatics (in-person on Wednesday afternoons) are great electives for those in Drug Discovery and Development, Food Science, Personal Care Science and Chemistry. If you are looking to strengthen your skills in bioinformatics, consider taking the python, regression, database and BI courses offered.
For Drug Discovery and Development: we offer 16:137:511 Drug Discovery Through Pre-Clinical Development (follow up to 510), 16:137:582 Fundamentals of Regulatory Affairs (asynchronous class with a few in-person/hybrid meetings), and 16:137:580 Practical Clinical Trials. These courses are also great electives to the biotech and personal care science (cosmetic regulatory!). 16:137:514 Fundamentals of Biological Chemistry in the Biotech Industry (online Wednesday nights) 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.

For Sustainability: we offer Sustainable Supply Chain/Green Purchasing (16:137:606). This project course is led by Professor Kevin Lyons. This is a great 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 be working with companies and implementing sustainability solutions.

Computer/Information/Engineering Sciences:

For those in information technology, engineering, analytics, and UXD, there are several core and elective courses offered this spring. The Cybersecurity and Secure Systems (16:137:561) course covers fundamentals of cybersecurity and building secure systems. Cybersecurity is increasingly important in today’s job market as we become more digital. 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 came 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. For those in cybersecurity, please make sure to give yourself time to take the certifications (like CompTIA) which are offered through the Topics in Management course (see above).

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. 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. Applied Regression Analysis (16:137:602) is offered 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 will be utilizing Google TensorFlow. This hands-on class is important for any science or engineering student who wants to learn AI. If you have python, you can take this AI course. Read more about the final presentations for this course on our blog. We also offer Introduction to Cloud & Big Data Systems (16:137:539) this spring and Advanced Analytics and Practicum (16:137:551) on Tuesdays.

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For those in analytics, also check out (56:198:501) **Data Structures and Algorithmic Problem Solving in Python**. This course covers the fundamentals of data structures. If you are interested in data science, computing or want to really understand the fundamentals of computer science – **TAKE THIS COURSE!** It is the only data structures course in python and it is hybrid – all lectures are through zoom.

**Business Intelligence with Visual Analytics** (16:137:553) teaches BI and visualization. It uses Tableau, a popular visualization tool which is a popular skill in many job postings. It is a must for those in analytics and engineering management and a great elective for those in all other concentrations. **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. The very popular **User Experience Design** (16:137:531, required for IT and UXD) is also offered online on Monday and Wednesday nights. UXD covers how to think about developing a web site/web presence/computer application from the user’s perspective. If you are considering developing a business that involves the web, this course could help. This is also a key course for anyone thinking about product management or product design. We are also offering **User Experience Design (UXD) Practicum** (16:137:536).

**Some other courses of interest:**

- For those that want an in-person course: **Project Management** (22:799:691 14670)–this is an RBS course open to non-RBS students.
- (16:540:520) **Supply Chain and Logistics Engineering** – offered online on Tuesday nights.
- (34:970:523) **Environmental Law & Policy** – offered through the Bloustein School of Planning and Public Policy, meets Tuesdays in downtown New Brunswick.
- (16:790:558) **Politics of Cyber Warfare** – offered through the department of Political Science.

**QUICK LINKS**

- Special permission numbers
- Contact an advisor
- MBS events