

## MSPA Software Survey

### MSPA Software Survey

This is a fourteen-item survey that should take less than fifteen minutes of your time.

The current twelve-course MSPA curriculum includes many courses with primary software identified as Python, R, or SAS. Software systems or languages associated with courses in a typical student curriculum are as follows:

- PREDICT 400 Math for Modelers (Python)
- PREDICT 401 Introduction to Statistical Analysis (R)
- PREDICT 410 Regression and Multivariate Analysis (SAS)
- PREDICT 411 Generalized Linear Models (SAS)
- PREDICT 413 Time Series Analysis and Forecasting (R)
- PREDICT 420 Database Systems and Data Preparation (Python)
- PREDICT 422 Practical Machine Learning (R)
- PREDICT 450 Marketing Analytics or PREDICT 451 Risk Analytics (R)
- PREDICT 452 Web Analytics and Network Data Science or PREDICT 453 Text Analytics (Python)
- PREDICT 455 Data Visualization or Other Elective (R)

As you can see, a typical student curriculum includes three courses with Python, five with R, and two with SAS.

The first three items of this survey ask you to distribute 100 points across five options identified with computer languages or software systems. If you were to distribute these 100 points according to the current MSPA curriculum, you would have the following distribution of points:

- Java/Scala/Spark (0 points)
- JavaScript/HTML/CSS (0 points)
- Python (30 points)
- R (50 points)
- SAS (20 points)

\* 1. Distribute 100 points across the five software options based on your desire to learn each language or software system.

Java/Scala/Spark

JavaScript/HTML/CSS

Python

R

SAS

\* 2. Distribute 100 points across the five options based on your professional need to learn each language or software system.

Java/Scala/Spark

JavaScript/HTML/CSS

Python

R

SAS

\* 3. Distribute 100 points across the five options based on how you see their importance and prevalence in your industry.

Java/Scala/Spark

JavaScript/HTML/CSS

Python

R

SAS

4. Explain your point distributions in questions 1 through 3, describing your feelings about the use of the five languages or software systems across the MSPA curriculum.

5. The School of Professional Studies is thinking about offering four new courses relating to information technology for data science, or what is sometimes called data engineering. These courses would count as electives in the MSPA program. The next four questions ask for your level of interest in each of the proposed elective courses.

Python for Data Analysis. Python programming language is becoming the language of choice for programmers and practitioners when dealing with a broad set of data analysis tasks. In this course, the students will learn the basic programming constructs and packages in Python. Students will acquire Python programming skills to store, retrieve, process, and transform data from different data sources, including SQL database engines. The course will discuss Python packages such as Pandas and Matplotlib that are used for data-intensive applications, data analysis, exploratory computing and data visualization when generating the statistical data analysis reports that are used to support the decision-making process. This is a programming-based course that will harness the expressive power of Python in tackling a broad set of data analysis, statistical computing, and information processing problems. Prerequisites: None. [Likely language and system: Python and Jupyter notebook.]

Use this slider to indicate your level of interest in this course. (0 means there is no chance of your including this course as part of your curriculum. 100 means that you would certainly include this course in your curriculum.)

0

Level of Interest in Course

100

6. Foundations of Data Engineering. This course provides an overview of software and systems for data science as well as methods of software development. Students learn about computer languages while working on data and text analysis projects. Students gain experience with open-source software, text editors, and integrated development environments. They employ best practices in software development, utilizing tools for syntax checking, testing, debugging, and version control. Prerequisites: None. [Likely languages and systems: Python, R, and Jupyter notebook.]

Use this slider to indicate your level of interest in this course. (0 means there is no chance of your including this course as part of your curriculum. 100 means that you would certainly include this course in your curriculum.)

0

Level of Interest in Course

100

7. Analytics Application Development. This course covers programming components essential to the development of analytics applications. The focus is analytics software engineering. Students learn to develop single-system/desktop solutions as well as client-server solutions. They learn about web-based, client-server solutions employing a variety of front-end and back-end system components. Students develop software, working on open-source programming, database, and systems integration projects. They employ best practices in software development. Prerequisites: Database Systems and Data Preparation. [Likely languages and systems: Python, JavaScript/HTML/CSS, Linux bash shell, relational and NoSQL database systems.]

Use this slider to indicate your level of interest in this course. (0 means there is no chance of your including this course as part of your curriculum. 100 means that you would certainly include this course in your curriculum.)

0

Level of Interest in Course

100

☐

8. Data Science Systems Analysis. This course provides a detailed treatment of software and systems for data science as well as methods for testing and evaluating software and systems. Students learn about the systems architecture, alternative software stacks, design of scalable systems, and computer system security. Students gain experience with methods for benchmarking analytics software in production environments, testing system performance across various system loads. They learn tools of systems analysis as applied to stand-alone and distributed systems. They evaluate benefits and risks associated with in-house versus cloud-based distributed systems. Prerequisites: Database Systems and Data Preparation. [Likely languages and systems: Python, R, Java/Scala/Spark, JavaScript/HTML/CSS, Linux bash shell, relational and NoSQL database systems.]

Use this slider to indicate your level of interest in this course. (0 means there is no chance of your including this course as part of your curriculum. 100 means that you would certainly include this course in your curriculum.)

0

Level of Interest in Course

100

☐

9. The current MSPA program introduces students to Python, R, and SAS, as well as relational and NoSQL databases. Are there other languages or software systems that should be included in the MSPA curriculum? (Please indicate whether you feel the language or software system should be included in core courses, standard elective courses, and/or special topics courses.)

10. Regarding information technology training for analytics and data science professionals, are there things that we could do better across the MSPA curriculum?

11. Do you have any other information you would like to share about the MSPA curriculum and software utilized in the curriculum?

12. Are you an MSPA student or faculty member?

- ☐ MSPA Student
- ☐ MSPA Faculty Member
- ☐ Other

## MSPA Software Survey

### MSPA Software Survey (Student Information)

13. By the end of fall term 2016, how many courses will you have completed in the MSPA curriculum?

14. Which courses with a programming component will you have completed by the end of fall term 2016?  
(Check all that apply)

- ☐ PREDICT 400 Math for Modelers (Python)
- ☐ PREDICT 401 Introduction to Statistical Analysis (R)
- ☐ PREDICT 410 Regression and Multivariate Analysis (SAS)
- ☐ PREDICT 411 Generalized Linear Models (SAS)
- ☐ PREDICT 413 Time Series Analysis and Forecasting (R)
- ☐ PREDICT 420 Database Systems and Data Preparation (Python)
- ☐ PREDICT 422 Practical Machine Learning (R)
- ☐ PREDICT 450 Marketing Analytics (R)
- ☐ PREDICT 451 Risk Analytics (R)
- ☐ PREDICT 452 Web Analytics and Network Data Science (Python)
- ☐ PREDICT 453 Text Analytics (Python)
- ☐ PREDICT 454 Advanced Modeling Techniques (R)
- ☐ PREDICT 455 Data Visualization (R)
- ☐ PREDICT 456 Sports Performance Analytics (R)
- ☐ PREDICT 457 Sports Management Analytics (R)
- ☐ Other Course with Python as the Primary Language
- ☐ Other Course with R as the Primary Language
- ☐ Other Course with SAS as the Primary Language

Other (please specify)

15. When do you expect to graduate with your MSPA degree?

- ☐ Fall 2016
- ☐ Winter 2017
- ☐ Spring 2017
- ☐ Summer 2017
- ☐ Fall 2017
- ☐ Winter 2018
- ☐ Spring 2018
- ☐ Summer 2018
- ☐ Fall 2018
- ☐ Winter 2019
- ☐ Spring 2019
- ☐ Summer 2019
- ☐ Fall 2019
- ☐ 2020 or Later