Recommended MOOC for potential MSDA applicants to obtain/brush up on some of the skills:

Probability and Statistics
The Coursera course from Duke on Data Analysis and Statistical Inference is an excellent introduction, and uses the same primary text as our first semester prob/stats course
https://www.coursera.org/course/statistics

This course is light on probability; there are many good courses on both Coursera and edx on probability and statistics. Another good introduction to prob/stats is the three part series on edx by UC Berkeley:

- Introduction to Statistics: Probability, https://www.edx.org/course/introduction-statistics-probability-uc-berkeleyx-stat2-2x
- Introduction to Statistics: Descriptive Statistics, https://www.edx.org/course/introduction-statistics-descriptive-uc-berkeleyx-stat2-1x, and
- Introduction to Statistics: Inference, https://www.edx.org/course/introduction-statistics-inference-uc-berkeleyx-stat2-3xhttps://www.edx.org/course/introduction-statistics-inference-uc-berkeleyx-stat2-3x

Calculus
For Calculus, we recommend Jim Fowler's excellent Coursera course. It's free and on demand.
https://www.coursera.org/learn/calculus1

Fowler's Calculus 2 course (that just covers sequences and series) is also excellent:
https://www.coursera.org/learn/advanced-calculus

Programming Languages

In our program, we focus on using R and Python, which are arguably the two most important data science programming languages. We don't assume that you know either, but we do assume that you come in solid with at least one programming language.

Python
We recommend that you start with Python. There are also references to learning material on R, but I'd suggest you first build up your proficiency in Python.

We recommend starting with The University of Michigan/Coursers 5-course series, "Python for Everybody." One of the courses also covers SQL databases.
https://www.coursera.org/specializations/python

To get a good high level overview of the kind of work that we do in the MSDA program, you could follow-up the above series with the Wesleyan/Coursera five course series on "Data Analysis and Interpretation:"
https://www.coursera.org/specializations/data-analysis

Please note that all of the Coursera and edx courses have free options in addition to the pay for certification option.

R
The best place to start in my opinion is Coursera's 10 course "Data Science" specialization. The first course in the series is really just an overview; Doing this course and the second course on R programming would give you a lot of relevant background.
https://www.coursera.org/specializations/jhu-data-science