

Big Data and Materials Informatics

MSE 479, MSE 544, CHEM 443, CHEM 543

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Big Data and Materials Informatics is a course developed by Materials Science and Engineering Department and Chemistry Department in collaboration with eScience, and UW-IT. This class focuses on the unique challenges and opportunities in the Big Data era for materials science and chemistry research, and the computational methods and tools that can provide solutions to the Big Data challenges.

Two main approaches will be introduced to address the data-management and data-processing challenge: high-performance computation and cloud-based parallel computing.

Students will learn about several Big Data methods, including the use of cloud-hosted virtual machines, Docker, serverless apps, parallel computing, batch processing, automated data analysis, data storage and databases, GPU, and other cloud-based big data processing and machine learning tools that are suitable for materials science research, including natural language processing for data mining, image classification, and object detection, etc..

This is unique class that provide knowledge and training of applications of cloud computing resources. Class is sponsored by Microsoft Azure Cloud and is one of the UW Data Science Minor electives. We welcome any student who has interests in data science and satisfies prerequisites to take this class. See details and prerequisite in <https://myplan.uw.edu/course/#/courses/MSE544>

