

Accelerated 1-Year M.S. in Materials Science and Engineering with Data Science

Materials science and engineering is a discipline that extends from the basic science of materials micro-structure and properties to the design and evaluation of materials in engineering systems. **Data science and analytics** seeks to identify statistically significant relationships, model development, and predictive behavior of large data sets generated by e.g. manufacturing technologies. This degree program, which extends classical education in materials science and engineering with data science and analytics, will be completed in one calendar year.

The Department of Materials Science and Engineering (DMSE) at Case Western Reserve University (CWRU) is a research-centered educational environment whose mission is to enhance the productivity, quality, and benefit of materials-related learning to its students, faculty, and community. DMSE bears a commitment to the improvement of materials technology, DMSE is equipped with state-of-the-art facilities for mechanical characterization as well as micro-characterization of materials (conventional and advanced methods of electron microscopy and spatially resolved surface analysis). The synergy of these facilities and applying them to a broad spectrum of cutting-edge materials research consistently thrust us among the top tiers of materials research institutions in the nation.

The program consists of nine (9) courses taken over three semesters.

Fall Semester

1. Thermodynamics of Solids
2. Structure of Materials
3. Structural Materials by Design* – or –

Fundamentals of Materials Engineering and Science*

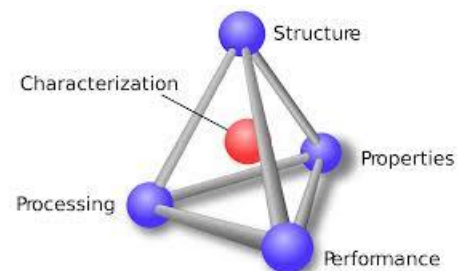
* Dependent on placement exam

Spring Semester

4. Phase Transformations, Kinetics and Microstructure
5. Properties of Materials
6. World Perspective on Materials
7. Data Science Modeling, Prediction & Statistical Learning

Summer Semester

8. Applied Data Science Research
9. Analytical Methods in Materials Science



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