Become the engineer who confidently leads the transformation of big data into informed, high-impact actions.

What You Learn

- Understand and apply appropriate data analysis tools and methods to drive improvements to products and processes, research, design, testing, and operations.
- Apply best methods and practices for the capture, storage, cleaning, querying, analysis, and visualization of data.
- Evaluate and implement the most effective computing technology, modeling techniques, and analysis methods for your engineering projects.
- Sharpen your ability to effectively lead change efforts by improving your skills in project management, team leadership, and professional communications.

Where and How You Learn

Where: Online; you may start in the fall or spring semester of any year.
How: Complete 15-credit core curriculum in data analytics and 15 elective credits that span either additional data science courses or other online engineering and professional development courses.

Classes meet online once a week; each class is recorded, so you can participate regardless of your travel schedule or location.

―
I selected the MEDA program as a way to supplement my engineering background in a world inundated with data. The program has delivered by providing new skills, directly improving the value of my work.

John Kroening, Oshkosh Corp.
# Sample Plan of Study

## Classes and Credits

<table>
<thead>
<tr>
<th>Class Number</th>
<th>Class Name</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st FA</td>
<td>ECE 532 Matrix Methods in Machine Learning</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>LIS 751 Database Design for Information Professionals</td>
<td>3</td>
</tr>
<tr>
<td>1st SP</td>
<td>ISyE 612 Applied Temporal Data Analytics for Engineers</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ME 548 Introduction to Design Optimization</td>
<td>3</td>
</tr>
<tr>
<td>1st SU</td>
<td>ISyE 512 Inspection, Quality Control, and Reliability</td>
<td>3</td>
</tr>
<tr>
<td>2nd FA</td>
<td>ME 459 Computing Concepts for Applications in Engineering</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ISyE 602 Interactive Data Visualization</td>
<td>3</td>
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<tr>
<td>2nd SP</td>
<td>ME 759 High-Performance Computing for Applications in Engineering</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ISyE 620 Simulation Modeling and Analysis</td>
<td>3</td>
</tr>
<tr>
<td>3rd FA</td>
<td>Choose an elective</td>
<td>3</td>
</tr>
</tbody>
</table>

*Listed courses and schedule are subject to change.*

## Choose from a Broad Selection of Elective Courses in Four Concentrations

Add electives from one or more concentrations to reach degree requirements of 30 credits. You develop your custom plan of study in consultation with the program director.

### Leadership
- Engineering Economics and Management ................................................... 3 cr.
- Technical Project Management ................................................................. 3 cr.
- Fostering and Leading Innovation ......................................................... 3 cr.

### Manufacturing
- Fundamentals of Industrial Data Analytics ................................................ 3 cr.
- Quality Engineering and Quality Management ............................................ 3 cr.
- Design and Analysis of Manufacturing Systems ......................................... 3 cr.

### Sustainable Systems
- Core Competencies of Sustainability ....................................................... 3 cr.
- Special Topics: Distributed Renewable Systems Design .......................... 3 cr.
- Sustainable Approaches to System Improvement ......................................... 4 cr.

### Polymers
- Engineering Design with Polymers ......................................................... 3 cr.
- Polymer Characterization .......................................................... 3 cr.
- Polymer Coatings ........................................................................... 3 cr.
- Plastics Recycling and Sustainability ..................................................... 3 cr.

### Professional Development Electives
- Connected Learning Essentials ............................................................... 1 cr.
- Presentations for Professionals ............................................................. 1 cr.
- Writing for Professionals ........................................................................ 1 cr.
- Marketing for Non-Marketing Professionals .............................................. 1 cr.
- Organizational Communication and Problem Solving .................................... 1 cr.
- Change Management ............................................................................. 1 cr.
- Leading Teams ....................................................................................... 1 cr.
- Creating Breakthrough Innovations .......................................................... 1 cr.
- Ethics for Professionals .......................................................................... 1 cr.
- Effective Negotiation Strategies ............................................................. 1 cr.

Positively challenging. Advanced topics with direct professional applications.

Omar Saleh, WEC Energy Group