

# SEM CONCENTRATIONS

Concentration	Description *Prerequisites
<b>Business and Data Analytics</b>	<ul style="list-style-type: none"> <li>• SYSM 6335 Organizing for Business Analytics: Systems Approach</li> <li>• BUAN 6312 Applied Econometrics &amp; Time Series Analysis *(<i>SYSM 6303 or BUAN 6359</i>)</li> <li>• BUAN 6320 Database Foundations</li> <li>• BUAN 6324 BA with SAS</li> <li>• BUAN 6356 BA with R *(<i>BUAN 6359</i>)</li> <li>• BUAN 6359 Advanced Statistics for Data Science</li> <li>• BUAN 6337 Predictive Analytics *(<i>SYSM 6303 or BUAN 6359</i>)</li> <li>• OPRE 6398 Prescriptive Analytics</li> </ul>
<b>Control and Mechatronic Systems</b>	<ul style="list-style-type: none"> <li>• SYSM 6302 Dynamics of Complex Networks and Systems</li> <li>• SYSM 6307 Linear Systems</li> <li>• SYSE 6324 Nonlinear Systems *(<i>SYSM 6307</i>)</li> <li>• SYSE 6326 Robot Control *(<i>SYSM 6307</i>)</li> <li>• SYSE 6325 Optimal Estimation &amp; Kalman Filter *(<i>SYSM 6307</i>)</li> <li>• EEPE 6357 Control Modeling &amp; Simulation in Power Electronics *(<i>EEPE 6354</i>)</li> <li>• MECH 6326 Optimal Control &amp; Dynamic Programming</li> <li>• MECH 6327 Convex Optimization in Systems &amp; Controls</li> </ul>
<b>Cybersecurity</b>	<ul style="list-style-type: none"> <li>• MIS 6330 Cybersecurity Fundamentals</li> <li>• MIS 6333 Digital Forensics &amp; Incident Management *(<i>MIS 6330</i>)</li> <li>• MIS 6337 Information Tech Audit &amp; Risk Management</li> <li>• MIS 6343 Advanced Cybersecurity Management *(<i>MIS 6330</i>)</li> <li>• MIS 6363 Cloud Computing</li> <li>• MIS 6384 Preparing for Cybersecurity Threats</li> </ul>
<b>Energy and Sustainability</b>	<ul style="list-style-type: none"> <li>• ENGY 6332 Energy &amp; Sustainability</li> <li>• ENGY 6330 Energy Law &amp; Contracts</li> <li>• EEPE 6359 Renewable Energy Systems* (<i>EEPE6354</i>)</li> <li>• MECH 6342 Renewable Energy &amp; Grid Integration</li> <li>• OPRE 6389 Managing Energy: Risk, Investment, Technology</li> <li>• MECO 6318 Energy Economics &amp; Cost Regulation *(<i>SYSM6319</i>)</li> </ul>
<b>Mechanical &amp; Manufacturing Design</b>	<ul style="list-style-type: none"> <li>• SYSM 6305 Optimization Theory &amp; Practice</li> <li>• MECH 6303 Computer Aided Design</li> <li>• MECH 6333 Materials Design &amp; Manufacturing</li> <li>• MECH 6335 Flexible Manufacturing Strategies</li> <li>• MECH 6337 Systems Engineering, Architecture &amp; Design</li> <li>• MECH 6339 Multidisciplinary Design Optimization</li> </ul>

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<b>Entrepreneurship and Innovation Management</b>	<ul style="list-style-type: none"> <li>• SYSM 6315 Entrepreneurial Experience</li> <li>• SYSM 6316 Managing Innovation Within the Corporation</li> <li>• SYSM 6332 Technology and New Product Development</li> <li>• ENTP 6370 Innovation &amp; Entrepreneurship</li> <li>• ENTP 6378 Managing the Emerging Enterprise <i>*(ENTP 6370)</i></li> <li>• ENTP 6380 Market Entry Strategies <i>*(ENTP 6370 or SYSM 6318)</i></li> <li>• ENTP 6390 Business Model Innovation <i>*(ENTP 6370)</i></li> </ul>
<b>Global Supply Chain and Operations Management</b>	<ul style="list-style-type: none"> <li>• SYSM 6304 Risk &amp; Decision Analysis</li> <li>• SYSM 6334 Systems Operations Management</li> <li>• OPRE 6340 Flexible Manufacturing Strategies</li> <li>• OPRE 6364 Quality Control (Lean Six Sigma)</li> <li>• OPRE 6366 Global Supply Chain Management <i>*(SYSM 6334)</i></li> <li>• OPRE 6370 Logistics and Distribution <i>*(SYSM 6334)</i></li> <li>• OPRE 6371 Purchasing and Sourcing Management</li> <li>• OPRE 6379 Product Lifecycle Management</li> </ul>
<b>Information Technology &amp; Management</b>	<ul style="list-style-type: none"> <li>• MIS 6309 Business Data Warehousing</li> <li>• MIS 6326 Data Management</li> <li>• MIS 6344 Web Analytics</li> <li>• MIS 6346 Big Data</li> <li>• MIS 6380 Data Visualization</li> <li>• MIS 6383 Advanced Data Management <i>*(MIS 6326)</i></li> </ul>
<b>Optimization Theory</b>	<ul style="list-style-type: none"> <li>• SYSM 6305 Optimization Theory and Practice</li> <li>• MECH 6327 Convex Optimization in Systems &amp; Controls</li> <li>• MECH 6339 Multidisciplinary Design Optimization</li> <li>• MECO 6350 Game Theory</li> <li>• OPRE 7310 Probability &amp; Stochastic Processes</li> </ul>
<b>Telecom and Multimedia Networks</b>	<ul style="list-style-type: none"> <li>• SYSM 6302 Dynamics of Complex Networks and Systems</li> <li>• MIS 6316 Data Communication</li> <li>• MIS 6363 Cloud Computing</li> <li>• EESC 6340 Intro to Telecommunication <i>*(EESC 6349)</i></li> <li>• EESC 6349 Probability, Random Variables, &amp; Statistics</li> <li>• EESC 6352 Digital Communication Systems <i>*(ENGR3341)</i></li> <li>• EESC 6353 Broadband Digital Communications <i>*(EESC 6349)</i></li> </ul>