

Name _____

ID# _____

A total of 30 units is required for this degree, beyond the B.S. degree.

REQUIRED COURSES

<u>Semester</u>	<u>Course</u>	<u>Title</u>
_____	CSCI 585	Database Systems (4, FaSpSm), OR
_____	ISE 510	Advanced Computational Design and Manufacturing (3)
_____	ISE 511L	Mechatronic Systems Engineering (3, Sp)
_____	ISE 517	Modern Enterprise Systems (3, FaSp), OR
_____	ISE 576	Industrial Ecology: Technology - Environment Interaction (3)
_____	ISE 525	Design of Experiments (3, FaSp), OR
_____	AME 525	Engineering Analysis (3, FaSp)

ELECTIVE COURSES (17 units):

From the provided list of electives or with consent of Program Director, elective courses will be available to provide focused specialties for each student with the aid of the student’s advisor. A maximum of 6 units of electives may be taken from non-engineering departments such as School of Business. A large number of relevant engineering courses are available to students. Students may select a combination of the following elective courses to complete their plan of study. Courses below 500 level may not be acceptable for the students who have their B.S. degree in the respective discipline.

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Master of Science in Manufacturing Engineering (2017-18)

APPROVED ELECTIVES IN SPECIALIZATION AREAS

Business & Entrepreneurship

- BAEP 551: Introduction to New Ventures
- BAEP 557: Technology Transfer & Commercialization
- ISE 585: Strategic Management of Technology

Aerospace Engineering

- AE 481 Aircraft Design
- AE 501 Spacecraft System Design
- AE 516ab Flight Vehicle Stability and Control
- AE 529 Aircraft Structures Analysis
- AE 546 Basic Aeroelasticity

Computer Science

- CS 455x Intro. to Programming Systems Design
- CS 460 Introduction to Artificial Intelligence
- CS 477L Design and Construction of Large Software Systems
- CS 480 Computer Graphics
- CS 482 Introduction to Geometric Modeling
- CS 485 File & Database Management
- EE 547 Software Methods in Robotics
- CS 551 Computer Communications
- EE 554 Real Time Computer Systems
- EE 559 Mathematical Pattern Recognition
- EE 560L Advanced Microcomputer-Based Design
- EE 561 Artificial Intelligence
- EE 574 Computer Vision
- CS 577ab Software Engineering
- CS 582 Geometric Modeling
- CS 583 Computational Geometry
- CS 584 Intelligent Systems for Design and Manufacture
- CS 585 Database Systems
- CS 598 Expert Systems
- CS 615 Robotic Motion Planning

Electrical Engineering

- EE 454L Introduction to Systems Design Using Microprocessors
- EE 472 Intro. to Lasers and Laser Systems
- EE 479 Intro. to Integrated Circuit Design
- EE 482 Linear Control Systems
- EE 504L Solid State Processing & IC Laboratory
- EE 536 Integrated Circuit Analysis & Design
- EE 537 Survey of Modern Solid State Devices
- EE 543abL Digital Control
- EE 544 Optimal Control
- EE 545 Introduction to Robotics
- EE 546L Basic Robotics Laboratory
- EE 562a Random Processing in Engineering
- EE 569 Intro. to Digital Image Processing
- EE 577 VLSI System Design
- EE 584 Chaotic Systems
- EE 585 Linear Systems Theory

- EE 587 Nonlinear Control Systems
- EE 588 Linear Quadratic Control
- EE 593 Multivariable Control
- EE 657 Parallel Processing
- EE 666 Data Communication
- EE 680 Computer Aided Design of Digital Systems
- EE 684 Optimum Stochastic Control
- EE 685 Parameter Identification & Adaptive Control

Industrial & Systems Engineering

- ISE 410 Production Planning and Control
- ISE 411 Facilities Analysis and Design
- ISE 415 Industrial Automation
- ISE 426 Statistical Quality Control
- ISE 435 Discrete Systems Simulation
- ISE 511L Computer-Aided Manufacturing
- ISE 513 Inventory Systems
- ISE 514 Industrial Scheduling
- ISE 515 Engineering Project Management
- ISE 516 Facilities Location and Layout
- ISE 517 Manufacturing Enterprise System
- ISE 527 Quality Management for Engineers
- ISE 528 Advanced Statistical Aspects of Engineering Reliability
- ISE 530 Optimization Methods For Analytics
- ISE 535 Continuous Systems Simulation
- ISE 538 Stochastic Processes
- ISE 540 Advanced Topics in Work Measurement & Methods
- Analysis
- ISE 561 Advanced Engineering Economics
- ISE 580 Performance Modeling and Simulation

Materials Science

- MS 472 Polymer Science and Engineering
- MS 475 Physical Properties of Polymers
- MS 511 Materials Preparation
- MS 513 Multilayered Materials & Properties
- MS 518 Semiconductor Materials for Devices
- MS 560 Fatigue and Fracture
- MS 583 Materials Selection
- MS 584 Fracture Mechanics and Mechanisms

Mechanical Engineering

- ME 403 Stress Analysis
- ME 407 Computer Graphics for Mechanical Engineers
- ME 408 Computer-Aided Design of Mechanical Systems
- ME 451 Linear Control Systems I
- ME 503 Advanced Mechanical Design
- ME 504 Metallurgical Design
- ME 541 Linear Control Systems II
- ME 542 Nonlinear Control Systems
- ME 544 Computer Control of Mechanical Systems
- ME 548 Analytical Methods in Robotics