**Electronic Delivery of Gator Engineering (EDGE)**

**Master of Science in Materials Science & Engineering** [30 credits total **– at least 21 credits in MSE** (EMA Courses)] Please discuss selection of courses with the Graduate Coordinator

**Core Courses - Required**

EMA 6313 Material Structures & Mechanical Prop. [Fall]

EMA 6316 Materials Thermodynamics [Fall]

EMA 6136 Kinetics [Spring]

EMA 6114 Properties of Functional Materials [Spring]

**Electives (Select 6)**

EMA 6001 Properties of Materials- A Survey EMA 6106 Advanced Phase Diagrams

EMA 6165 Polymer Physical Science EMA 6507 SEM & Microanalysis

EMA 6107 High Temp Materials EMA 6461 Polymer Characterization

EMA 6625 Advanced Metals Processing EMA 6580 Science of Biomaterials

EMA 6808 Error Analysis & Optimization Meth EMA 6616 Adv. Electronic Materials Process

EMA 6510 Survey of Materials Analysis Tech EMA 6715 Fracture of Brittle Materials

EMA 6518 Transmission Electron Microscopy EMA 6110 Electronic Theory of Materials

EMA 6516 X-Ray Methods of Materials Analysis

EGS 6626 Engineering Project Management EEE 5426 Intro Quantum Mech for Nanodevices

EEE 5354L Semiconductor Device Fabrication EEE 6397 Semiconductor Dev Theory

EML 5526 Finite Element Analysis and Application EEE 5400 Future of Microelectronics Techniques

EML 5233 Failure of Materials in Mechanical Design EEE 6382 Semiconductor Phys Electronics

EGM 5533 Applied Elasticity & Adv Mech of Solids EGM 6341 Num. Meth. Of Engineering Analysis

EGM 6570 Principles of Fracture Mechanics EGM 6321 Principles of Engineering Analysis 1

EGS 6039 Engineering leadership EGS 6681 Advanced Engineering leadership

EGS 6626 Fundamentals of Engineering Project Management EGN 6640 Engineering Entrepreneurship

EGN 6642 Engineering Innovation

**Certificates**

**Materials Characterization Certificate (Choose 3)**

EMA 6510 Survey of Materials Analysis Techniques (mandatory)

EMA 6516 X-Ray Methods of Materials Analysis (optional)

EMA 6507 Scanning Electron Microscopy & Microanalysis (optional)

EMA 6518 Transmission Electron Microscopy (optional)

#####  ENGINEERING LEADERSHIP CERTIFICATE

REQUIRED COURSES

[EGS 6039](https://catalog.ufl.edu/search/?caturl=%2Fsearch&search=EGS+6039) – Engineering Leadership – 3 credits
[EGS 6681](https://catalog.ufl.edu/search/?caturl=%2Fsearch&search=EGS+6681) – Advanced Engineering Leadership Development – 3 credits\*
And one of the following:
[EGS 6626](https://catalog.ufl.edu/search/?caturl=%2Fsearch&search=EGS+6626) – Fundamentals of Engineering Project Management – 3 credits
[EGN 6640](https://catalog.ufl.edu/search/?caturl=%2Fsearch&search=EGN+6640) – Engineering Entrepreneurship – 3 credits
[EGN 6642](https://catalog.ufl.edu/search/?caturl=%2Fsearch&search=EGN+6642) – Engineering Innovation – 3 credits

##### ENGINEERING PROJECT MANAGEMENT CERTIFICATE

###### **REQUIRED COURSES**

[EGS 6626](https://catalog.ufl.edu/search/?caturl=%2Fsearch&search=EGS+6626) **– Fundamentals of Engineering Project Management – 3 credits**
[EGS 6628](https://catalog.ufl.edu/search/?caturl=%2Fsearch&search=EGS+6628) **– Advanced Practices in Engineering Project Management – 3 credits \***
**And one of the following:**
[ESI 6323](https://catalog.ufl.edu/search/?caturl=%2Fsearch&search=ESI+6323) **– Models for Supply Chain Management – 3 credits**
[EIN 6510](https://catalog.ufl.edu/search/?caturl=%2Fsearch&search=EIN+6510) **– Principles of Manufacturing Systems Engineering – 3 credits**
[ESI 6529](https://catalog.ufl.edu/search/?caturl=%2Fsearch&search=ESI+6529) **– Digital Simulation Techniques – 3 credits**
[ESI 6555](https://catalog.ufl.edu/search/?caturl=%2Fsearch&search=ESI+6555) **– Systems Management – 3 credits**
[CCE 5035](https://catalog.ufl.edu/search/?caturl=%2Fgraduate&search=CCE+5035)**– Construction Planning and Scheduling – 3 credits**
[EML 6324](https://catalog.ufl.edu/search/?caturl=%2Fgraduate&search=EML+6324)**– Fundamentals of Production Engineering – 3 credits**