

# M.S. in Power and Energy Systems

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## Degree Requirements

### Bridge Program

Students who have earned a Bachelor of Science in Engineering Technology (B.S.E.T.) degree, or who lack an appropriate background may be admitted and be required to take selected courses in addition to the degree requirements in order to make up deficiencies. They must attain a grade of B or better in each course. At the discretion of the department, students who have taken courses equivalent to these may have their bridge programs reduced accordingly.

### Master's Program

This master's program consists of 30 credits. As a requirement for graduation, students must achieve a 3.0 cumulative GPA in graduate-level courses, not including the master's thesis or project. The project grade must be B or better.

### Master's Project/Master's Thesis

If a student chooses to do a Master's Project, the student should take 9 courses plus ECE 700B Master's Project. If a student would like to do a Master's Thesis, the student should first take 8 courses plus the 700B MS Project course, and receive a satisfactory (S) grade in 700B before taking 701B MS Thesis in the immediate following semester with the same advisor. The MS thesis topic should be continuation of the work done in 700B.

## M.S. in Power and Energy Systems

| Code                                 | Title  | Credits   |
|--------------------------------------|--|-----------|
| <b>Bridge Courses</b>                |  |           |
| ECE 321                              | Random Signals and Noise                               | 3         |
| ECE 232                              | Circuits and Systems II                                | 3         |
| ECE 333                              | Signals and Systems                                    | 3         |
| ECE 361                              | Electromagnetic Fields                                 | 3         |
| ECE 372                              | Electronic Circuits II                                 | 3         |
| <b>Total Credits</b>                 |  | <b>15</b> |
| <b>Core Courses</b>                  |  |           |
| ECE 601                              | Linear Systems   | 3         |
| ECE 610                              | Power System Steady-State Analysis                     | 3         |
| <b>Specialized Courses/Electives</b> |  |           |
| Select three of the following:       |  | 9         |
| ECE 611                              | Transients in Power Systems                            |           |
| ECE 616                              | Power Electronics                                      |           |
| ECE 618                              | Photovoltaic Semiconductors and Renewable Energy       |           |
| ECE 698                              | Selected Topics in Electrical and Computer Engineering |           |
| MGMT 620                             | Management of Technology                               |           |
| <b>Electives</b>                     |  | <b>15</b> |
| ECE 613                              | Protection of Power Systems                            |           |
| ECE 617                              | Economic Control of Interconnected Power Systems       |           |
| ECE 698                              | Selected Topics in Electrical and Computer Engineering |           |
| ECE 698                              | Selected Topics in Electrical and Computer Engineering |           |
| ECE 605                              | Discrete Event Dynamic Systems                         |           |
| ECE 620                              | Electromagnetic Field Theory                           |           |
| ECE 637                              | Internet and Higher-Layer Protocols                    |           |
| ECE 658                              | VLSI Design I  |           |
| ECE 661                              | Control System Components                              |           |
| ECE 664                              | Applied Advanced Control Systems                       |           |
| ECE 673                              | Random Signal Analysis                                 |           |
| ECE 681                              | High Performance Routers and Switches                  |           |

|         |  |
|---------|--|
| ECE 692 | Embedded Computing Systems                             |
| ECE 788 | Selected Topics in Electrical and Computer Engineering |
| ME 607  | Advanced Thermodynamics                                |
| ME 610  | Applied Heat Transfer                                  |
| ENE 671 | Environmental Impact Analysis <sup>1</sup>             |
| IE 614  | Safety Engineering Methods                             |

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**Total Credits**

**30**

<sup>1</sup> MGMT 692 Strategic Management and other business and management courses can be included as optional electives based on the student background, instructor approval and advisor approval.