Universidad Politécnica de Puerto Rico
Graduate School
Master Program in Electrical Engineering

<table>
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<tbody>
<tr>
<td>Core Courses: 9 credit-hours</td>
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<tr>
<td>Electives: 15 credit-hours</td>
<td>Electives: 30 credit-hours</td>
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<tr>
<td>Thesis: 6 credit-hours</td>
<td>Total: 39 credit-hours</td>
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<td>Total: 30 credit-hours</td>
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</tbody>
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Communication Systems
Area of Interest

Core Courses

- EE 6020 – Stochastic Processes
- EE 6760 – Digital Communications

Elective Courses*

- EE 6030 – Linear Systems
- EE 6720 – Pattern Recognition
- EE 6770 – Satellite Communication Systems
- EE 7712 – Image Processing
- EE 7714 – Satellite Remote Sensing

(Thesis option requires 15 credit-hours. Non-thesis option requires 30 credit-hours)

**In addition to the current list of elective courses, the student could select as an elective any course with GMP code that is not specified in this list.

**Must be taken if not completed during the undergraduate studies.

The student may include up to 6 credit-hours selected from this list:

- EE 5714 – Digital Communications Systems**
- EE 5720 – Digital Signal Processing**
- EE 5730 – RF Circuit Design

The student may include up to 6 credit-hours selected from this list:

- CECS 6120 – Computer Architecture
- CECS 6130 – Data Comm. and Comp. Networks
- CECS 6150 – Object Oriented Design
- CECS 6510 – Software Engineering
- CECS 6010 – Advanced Design and Analysis of Algorithms
- CECS 6240 – Technology-Based Start-Up
- CECS 7550 – Artificial Intelligence

Thesis or Project

- EE 7800 – Thesis
- EE 7801 – Thesis Extension
- EE 7790 – Project for Master in Electrical Engineering
- EE 7791 – Project Extension for Master in Electrical Engineering

Contact Information:
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Rev. WI-16
**M.S.E.E. (Thesis Option)**

- Core Courses: 9 credit-hours
- Electives: 15 credit-hours
- Thesis: 6 credit-hours
- Total: 30 credit-hours

**M.Eng.E.E. (Non Thesis Option)**

- Core Courses: 9 credit-hours
- Electives: 30 credit-hours
- Total: 39 credit-hours

### Digital Signal Processing

**Area of Interest**

**Core Courses**
- EE 6020 – Stochastic Processes
- EE 6030 – Linear Systems

**Elective Courses**

- **(Thesis option requires 15 credit-hours)**
  - EE 6032 – Non-Linear Control
  - EE 6660 – Advanced Robotics Manipulators
  - EE 6720 – Pattern Recognition
  - EE 6740 – Intelligent Control
  - EE 6760 – Digital Communications
  - EE 6770 – Satellite Communication Systems
  - EE 7712 – Image Processing

- **(Non-thesis option requires 30 credit-hours)**
  - EE 7714 – Satellite Remote Sensing
  - EE 7716 – Computer Vision
  - EE 7730 – Speech Processing
  - EE 7740 – Algorithms for Digital Signal Processing
  - EE 7772 – Wireless Communications
  - EE 7780 – Special Topics in Digital Signal Processing

**Elective Courses**

- The student may include up to 6 credit-hours selected from this list:
  - EE 5714 – Digital Communications Systems
  - EE 5720 – Digital Signal Processing**
  - EE 5730 – RF Circuit Design

- The student may include up to 6 credit-hours selected from this list:
  - CECS 6120 – Computer Architecture
  - CECS 6130 – Data Comm. and Comp. Networks
  - CECS 6150 – Object Oriented Design
  - CECS 6510 – Software Engineering
  - CECS 6010 – Advanced Design and Analysis of Algorithms
  - CECS 6240 – Technology-Based Start-Up
  - CECS 7550 – Artificial Intelligence

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* In addition to the current list of elective courses, the student could select as an elective any course with GMP code that is not specified in this list.
** Must be taken if not completed during the undergraduate studies.

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**Thesis or Project**

- EE 7800 – Thesis
- EE 7801 – Thesis Extension
- EE 7790 – Project for Master in Electrical Engineering
- EE 7791 – Project Extension for Master in Electrical Engineering

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Rev. WI-16
Core Courses:  9 credit-hours  
Electives:  30 credit-hours  
Total:  39 credit-hours

**Power Systems and Renewable Energy Area of Interest**

**Core Courses**  
(3 credits each)  
EE 6010 – Mathematical Methods for Signal Processing  
EE 6400 – Direct Energy Conversion and Renewables  
EE 6402 – Market, Environmental and Public Policy Issues of Energy Systems

**Elective Courses**  
(3 credits each)  
Student must complete the remaining 30 credit-hours by selecting courses from this list of electives, of which may include up to six (6) credit-hours of the Advanced Undergraduate Courses.

**Oriented Electives**

EE 6410 – Smart Grids and Distributed Generation  
EE 6412 – Energy Management  
EE 6420 – Power Systems Transients  
EE 6422 – Power Systems Dynamic Stability  
EE 6424 – Power Systems Operation, Control and Planning  
EE 7410 – Drives and Controls for Energy Conservation and Alternate Sources  
EE 7420 – Advanced Electrical Power Quality  
EE 7422 – Grounding Systems

**Advanced Undergraduate Electives**

EE 4422 – Electric Power Quality  
EE 4432 – Power System Protection  
EE 4438 – Smart Distribution System Engineering  
EE 4452 – Alternative Generation Systems  
EE 4462 – Electrical Construction Project Management  
EE 4466 – Renewable Energy Systems

* In addition to the current list of elective courses, the student could select as an elective any course with GMP code, MMP – Industrial Automation courses and MEM – Renewable Resources Management or Construction Management that is not specified in this list.

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Rev. FA-21