ELECTRICAL ENGINEERING - MASTER OF ENGINEERING IN ELECTRICAL ENGINEERING

Requirements and Options for the MEEE Degree

The Program Educational Objectives for the Master of Engineering Program in Electrical Engineering are:

1. That graduates successfully apply advanced skills and techniques in one or more areas of emphasis.
2. That graduates obtain relevant, productive employment with the private sector or in government and/or pursue additional advanced degrees.

The MEEE is a coursework-only option for obtaining a master's degree. The requirement is a total of 30 credits of graduate course work, including passing with a grade of B or better six Graduate Expanded Core Courses from at least three different areas of emphasis. No oral exam is required for the MEEE.

Prefix	Title	Credits
Graduate Expanded Core Courses: choose 6 from at least 3 different areas [1]		**18-21**
Electromagnetics		
E E 515	Electromagnetic Theory I [2]	
E E 521	Microwave Engineering	
E E 541	Antennas and Radiation	
E E 548	Introduction to Radar	
E E 549	Smart Antennas	
E E 615	Computational Electromagnetics	
Microelectronics/VLSI		
E E 510	Introduction to Analog and Digital VLSI	
E E 512	ASIC Design	
E E 523	Analog VLSI Design [2]	
E E 567	ARM SOC Design	
Photonics		
E E 528	Fundamentals of Photonics [2]	
E E 577	Fourier Methods in Electro-Optics	
E E 578	Optical System Design	
Electric Energy Systems		
E E 502	Electricity Markets	
E E 533	Power System Operation	
E E 534	Power System Relaying	
E E 537	Power Electronics	
E E 540	Photovoltaic Devices and Systems	
E E 542	Power Systems II	
E E 543	Power Systems III [2]	
E E 544	Distribution Systems	
Digital Signal Processing		
E E 545	Digital Signal Processing II [2]	
E E 565	Machine Learning I [3]	
E E 576	Geometric Algebra [3]	
E E 587	Deep Learning for Image Processing	
E E 588	Advanced Image Processing	
E E 596	Digital Image Processing [2,3]	
E E 597	Neural Signal Processing	
Computer Engineering		
E E 506	Quantum Computing	
E E 556	Hardware & Software Codesign	
E E 558	Hardware Security and Trust	
E E 562	Computer Systems Architecture [2]	
E E 563	Computer Performance Analysis I	
E E 590	Selected Topics (Applications of Parallel Computing XSEDE Collaborative Course)	
E E 593	Mobile Application Development	
Communications		
E E 571	Random Signal Analysis [2]	
E E 572	Modern Coding Theory	
E E 573	Signal Compression	
E E 581	Digital Communication Systems I	
E E 583	Wireless Communications	
E E 586	Information Theory	
Controls & Robotics		
E E 551	Control Systems Synthesis [2]	
E E 553	Noncooperative Game Theory	
E E 565	Machine Learning I [3]	
E E 576	Geometric Algebra [3]	
E E 596	Digital Image Processing [3]	
Graduate Electives: choose 3 to 4 courses [4]		**12-9**
Total Credits		**30**

[1] The graduate expanded core courses must be passed with a grade of B or better. Note--a grade of B- (or lower) in a graduate expanded core course will not satisfy completion of that course for the MEEE.

[2] This course is one of the MSEE Graduate Core Courses. Students pursuing the MEEE who wish to pursue the Ph.D. in the future are encouraged to select three courses from this subset of courses to satisfy one of the requirements for the Ph.D. Qualifying exam (see https://ece.nmsu.edu/grad-study/phd-qualifying.html) for more information.

[3] This course is included in multiple areas of emphasis. Students may use this course to satisfy **one** area of emphasis.

[4] E E courses must be numbered 500 or higher. Non-E E courses must be numbered 450 or higher. Credits of E E 590 Selected Topics which are not subtitled are limited to a total of 6.

Other limitations and requirements that apply to all master's degrees are described elsewhere in this catalog.

Included Prefixes

Graduate course work credits from the following prefixes are permitted for the MEEE degree. If a graduate course outside this list of prefixes logically fits into the MEEE program, see your graduate advisor about requesting an exception.

Prefix	Title	Credits
College of Agriculture/Consumer/Environmental Sciences		
AEEC		
ENVS		
GENE		
College of Arts and Sciences		
ASTR		
BCHE		

BIOL
C S
CHEM
GEOL
GPHY
LING
MATH
MOLB
PHYS
STAT
College of Business
ECON
MGMT
College of Engineering
A E
A EN
CHME
E E
ENVE
I E
M E
SUR

New Mexico State University master's accelerated program provides **the opportunity for academically qualified undergraduate students** to begin working on a master's degree **during their junior and senior years** while completing a bachelor's degree. Typically, a bachelor's degree requires four years to complete, and a master's degree requires an additional two years. The master's accelerated programs allow students the opportunity to complete a graduate program in an accelerated manner. Students can take up to 12 credits of E E graduate courses and get dual course credit that can be applied to both an undergraduate and master's degree. You can also check NMSU's catalog for additional information about our programs.

MAP Requirements

- The Graduate School allows qualified junior or senior students to substitute its graduate courses for required or elective courses in an undergraduate degree program and then subsequently count those same course as fulfilling graduate requirements in a related graduate program.
- Undergraduate students may apply for acceptance to the accelerated master's program after completing 60 semester hours of undergraduate coursework of which a minimum of 25 semester credit hours must be completed at NMSU.
- The grade point average must be at a minimum of 2.75.
- Students must receive a grade of B or higher in this coursework to be counted for graduate credit. If a grade of B- or lower is earned, it will not count toward the graduate degree.

Accepted MAP Courses

The following courses are accepted for use in the MAP program. Any other E E 500+ course that is taught concurrently with an E E 400+ course may be considered after a consultation with an advisor. An exception will need to be made to the degree audit in order for the additional course(s) to be included on both the Undergraduate and Graduate degrees. E E 450+ courses are not eligible for MAP credit nor are E E 500+ courses that are not taught concurrently with an E E 400+ course. The following course list specifies which undergraduate

BSEE concentration electives may count toward the MAP. Courses are listed according to the most relevant BSEE concentration, but some courses may count toward multiple concentrations; please refer to the corresponding BSEE concentrations in the NMSU catalog for more details on concentration courses.

Prefix	Title	Credits
Artificial Intelligence, Machine Learning, & Data Science		
E E 506	Quantum Computing	3
E E 565	Machine Learning I	3
Communications and Signal Processing		
E E 573	Signal Compression	3
E E 581	Digital Communication Systems I	3
E E 588	Advanced Image Processing	3
E E 596	Digital Image Processing	3
E E 597	Neural Signal Processing	3
Computers and Microelectronics		
E E 510	Introduction to Analog and Digital VLSI	3
E E 512	ASIC Design	3
E E 523	Analog VLSI Design	3
E E 556	Hardware & Software Codesign	3
E E 558	Hardware Security and Trust	3
E E 562	Computer Systems Architecture	3
E E 567	ARM SOC Design	3
E E 593	Mobile Application Development	3
Controls & Robotics		
E E 551	Control Systems Synthesis	3
E E 576	Geometric Algebra	3
Electromagnetics and Photonics		
E E 521	Microwave Engineering	3
E E 528	Fundamentals of Photonics	4
E E 541	Antennas and Radiation	4
E E 548	Introduction to Radar	3
E E 549	Smart Antennas	3
Power		
E E 502	Electricity Markets	3
E E 537	Power Electronics	3
E E 540	Photovoltaic Devices and Systems	3
E E 542	Power Systems II	3
E E 543	Power Systems III	3