

# Navajo Technical University

Name: \_\_\_\_\_

ID#: \_\_\_\_\_

## Bachelor of Science Degree – Electrical Engineering (129 Credits)

A student needs to complete general courses and general education electives within the first two years of study with a grade point average of 2.0 or better before taking the upper level core courses (300 and 400-level courses). However, to complete the program within four years, a credit load of 15 to 18 is recommended.

The electrical engineering program is designed to prepare students to design and improve electrical, electronic and computer systems. The program combines practical exposure to the most modern technologies available with a theoretical foundation that empowers students to master future changes and innovations.

- **Pre-EE Requirements - 15 Credits**
- **General Education Requirements - 39 Credits**
- **Core EE Requirements - 60 Credits**
- **Concentration Electives – 15 Credits**

Students can select the following area of concentration:

- Computer Engineering/Digital Systems
- Electric Power and Energy Systems
- Manufacturing

Semester ONE		Credits	Prerequisites	Semester/Transfer	Grade
ENGL 1110	Composition I	3	ENGL100 or satisfactory placement scores		
CS 101	Programming I	3			
ENGR 123	Computer Skills for Engineering	3			
ENGR 130	Engineering Graphics	3			
MATH 1510	Calculus I	4	MATH 1240		
SSC 100	College Success	1			
<b>Semester TWO</b>					
EE 101	Electrical Engineering	3	CS 101, MATH 1215		
ENGR 103	Introduction to Engineering	3	ENGR 130		
ENGR 143	Characteristics of Engineering Materials	3			
ENGR 169	Basic Statistics & Probability	3	MATH 1215		
ENGL 1120	Composition II	3	ENGL 1210 or 1110		
NAVA 2230	Navajo Government	3			
<b>Semester THREE</b>					
EE 102	DC Circuits & Systems	3	EE 101 & MATH 1220		
EE 103	Digital Circuits & Systems	3	EE 101 & MATH 1220		
CHEM 1217C	General Chemistry I with Laboratory	4	MATH 1220, CHEM 1120C		
MATH 1520	Calculus II	4	MATH 1510		
PHYS 1230C or PHYS 1310C	Algebra- Based Physics I or Calculus-Based Physics I	4	SEE CATALOG		
<b>Semester FOUR</b>					
EE201	AC Circuits & Systems	3	EE 102 & MATH 1230		
EE207	Intro to Modeling & Simulation	3	SEE CATALOG		
EE212	Instrumentation	2	EE 101		
EE296	Sophomore Project	1	EE 207		
PHYS 1240C or PHYS 1320C	Algebra-Based Physics II or Calculus Based Physics II	4	SEE CATALOG		
NAVA 2210	Navajo Culture	3			
<b>Semester FIVE</b>					
EE 340	Electronic Circuits & Systems	3	MATH 1230, EE 201		
EE 312	Instrumentation II	2	EE 212		
MATH 2410	Differential Equations	4	MATH 1520		
HUMXXX	Humanities	3	HUMXXX		
SSCXXX	Social Science	3	SSCXXX		
<b>Semester SIX</b>					

EE 303	Probability & Random Signals	3	ENGR 169, EE 207		
EE 301	Signals & Systems	3	MATH 2410, EE 640		
EE 396	Junior Research Project	3	PHYS 1240C, PHYS 1320C		
MTH 410	Linear Algebra	3	MATH 1520		
MTHXXX	MATH 2530, MATH 1350, or MTH 415	3	SEE CATALOG		
<b>Summer After Junior Year</b>					
EE313	Summer Internship	3			
<b>Semester SEVEN</b>					
EE422	Senior Project	3			
EE498	FE Exam Prep	3			
XXX	Concentration Course	3			
XXX	Concentration Course	3			
Creative Fine Arts Course	ENGL 2310, ENGL 2320, ENGL 2330, NAVA 1310	3	SEE CATALOG		
<b>Semester EIGHT</b>					
EE 423	Capstone Design **	3	IE 380		
XXX	Concentration Course	3			
XXX	Concentration Course	3			
XXX	Concentration Course	3			
<b>TOTAL REQUIRED CREDIT HOURS:</b>		<b>122</b>			

**Listing of Concentrations: choose one concentration**

Computer Engineering/Digital Systems Concentration		Credits	Prerequisites	Semester/Transfer	Grade
CS 200	Data Structures I	3			
EE 230	Introduction to VHDL and FPGA	3			
EE 330	Computer Organization & Assembly Language Programming	3	EE 230		
EE 430	Computer Architecture and Design	3	EE 230		
EE 440	Operating Systems I	3	EE 430		
XXX	Technical Elective (Computer Engineering)	3			
<b>Electrical Power and Energy Systems Concentration</b>					
EE 370	Electrical Machinery	3	EE 302		
EE 460	Electrical Power Plants	3	EE 304		
EE 470	Electric Power Devices	3	EE 304		
EE 471	Power System Analysis	3	EE 460		
EE 472	Power Electronics & Power Management	3	EE470		
XXX	Technical Elective (Electrical Power)	3			
<b>Manufacturing Concentration</b>					
IE 235	Lean Production	3			
ENGR 313	Engineering Economics	3	MATH 1215		
IE 363	Design of Experiment	3	ENGR 236		
IE 413	Quality Control	3	IE 363		
IE 483	Rapid Prototyping	3	IE223		

**Listing of Technical Electives:**

EE 223 Semiconductors I	EE 230 Introduction to VHDL/ FPGA	EE 330 Computer Organization & Assembly Language Programming
EE 343 Introduction to VLSI Design3	EE 370 Electrical Machinery	EE 313 Summer Internship*
EE 403 Digital VLSI	EE 407 Communication Systems	EE 413 Analog VLSI
EE 430 Computer Architecture & Design	EE 460 Electrical Power Plants	EE 470 Electric Power Devices
EE 471 Power System Analysis	EE 472 Power Electronics & Power Mgmt.	EE 440 Operating Systems I
IT 315 Multicore Programming	MTH 410 Linear Algebra	MTH433 Numerical Analysis w/ Computers
EE-x95 Topics in EE	EE 196 Freshman Research Project	EE 296 Sophomore Research
EE 396 Junior Research Project	Other Courses Approved by Dept.	

	Signatures	Date
Student:		
Advisor:		
Registrar:		
Graduation Date:		

Revised 4/25/2022