Electrical Engineering, BS

Energy Concentration

Engineering & Design
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Pre-major Advisor
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ET 204

Plan of Study 2019-2020 Academic Year

144-148 Total Credits for Major

*ABET accredited

*All students must initially declare as a pre-major in Electrical Engineering; students cannot apply for the Major unless all pre-major prerequisites have been satisfied with a grade of C- or better. Admission to the program is competitive.

*Course offerings/schedule are subject to change
*Shaded areas below are Pre-major courses

	Fall Quarter	Winter Quarter	Spring Quarter
Year 1 Pre-major	**Math 124 Calc I** (5) FWS	**MATH 125 Calc II** (5) FWS	**MATH 204 Elem Linear Alg** (4) FWS
	PHYS 161 Phys w/ Calc I (5) FW	**PHYS 162 Phys w/ Calc II** (5) WS	PHYS 163 Phys w/ Calc III (5) FS
	CSCI 140/141 Programming Fund(4) FWS	**EE 110 Into to Electrical Eng** (2) W	**EE 111 Circuits Analysis I** (4) S
		CHEM 161 Gen Chemistry (5) FWS	GUR: B/CCOM

EE Pre-majors apply to the major at the end of Spring quarter. Courses above in BOLD are the minimum requirements to apply.

Year 2 Major	EE210 Circuit Analysis II (4) F	EE 220 Electronics Design (4) W	EE 310 Continuous Systems (4) S
	EE233 Digital Electronics (4) F	EE 244 Embedded Microcontrollers (4) W	ECON206 Microeconomics (4) FWS
	MATH 224 Mult Calc & Geo (5) FWS	MATH 331 Differential Equations (4) FWS	MATH 345 Engineering Statistics (4) FWS
	ENRG 380 Energy & Environment(3) FW	GUR: ACOM	GUR: HUM

Year 3 Major	EE372 Electromechanical Devices (4) F	EE 360 Communications Systems (4) W	EE 361 Signal Propagation (4) S
	EE 344 Embedded Microcont II (4) F	EE 374 Energy Processing (4) W	EE 378 Smart & Renewable Power (4) S
	EE 320 Electronics II (4) F	EE 444 Embedded Systems (4) W	ENRG 386 Electricity Economics (4) FS
	GUR: HUM	ENRG 320 Energy Science I (3) W	GUR: SSC

Year 4 Major	EE 471 Energy Project Proposal (2) F	EE 472 Energy Project Res & Dev (4) W	EE 473 Project Implementation (4) S
	ENG 302 Technical Writing (WP) (5) FWS	Technical Elective	Technical Elective
	EE 480 Control Systems (4) F	GUR: ACGM	GUR: SSC
	GUR: BCGM	GUR: HUM	

NOTES:

1. EE courses are offered once per year and have a strong prerequisite structure. Not following the sequence may delay graduation.
2. Students not enrolled in MATH 125 and PHYS 162 by *Winter of Year 1* will not be able to complete the degree in four years.
3. EE 110 may be waived for transfer students. It must be taken the first winter quarter at WWU.
4. MATH 341 may be substituted for MATH 345.
5. The EE program satisfies the SCI/LSCI, QSR, and Writing Proficiency (WP) General University Requirements (GURs). The GUR categories listed on this Planning Guide are what a student would need to complete beyond what the Major fulfills. Refer to the WWU Degree Planning Guide for further information and a list of GUR course options. http://www.wwu.edu/depts/registrar/gurs.shtml

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Admissions—

Program Admissions: Admission to the Electrical Engineering major is a two-phase process. When students initially declare, they are designated as pre-majors. Students must complete the courses listed below in order to apply to the major. Admission to full major status is determined by academic performance and other factors including an application questionnaire about the applicant's experience, motivation, and goals. Admission to the major is competitive. Neither completion of the prerequisites nor attainment of any specific GPA guarantees admission.

Major Prerequisite courses: MATH 124, MATH 125, MATH 204, PHYS 161, PHYS 162, CSCI 140, EE 110, and EE 111. Students must obtain at least a C- in the above courses and an overall GPA in them of 2.0 or higher to be considered. AP scores are converted to GPA as follows: 5 = A; 4 = B; 3 = C. Decisions are based on cumulative GPA in the prerequisite courses, and other required Major courses, overall GPA, and questionnaire responses.

Spring Quarter: Applications are due **on the Friday before finals week**. Only complete, on-time applications will be considered. Applicants will be notified by the end of the week following finals week. *Students who are accepted must register for Fall quarter EE courses before the end of Phase I registration. Students who do not register by the end of Phase I registration may lose their major status.*

Fall Quarter: Applications are also accepted at the beginning of Fall quarter on a **space available** basis. In order to be considered, applications are due to by **Noon** on the Friday before the start of classes. Accepted students will be notified by the start of Phase III registration.

Transfer Students: A transfer student that will be transferring into Fall quarter, Year 2, will be designated as a pre-major and will need to follow the standard application process above except for EE 110, which must be taken at the first opportunity on-campus. A transfer student that has previous coursework that can be transferred to EE core courses and will be entering the program sequence after Fall quarter, Year 2, may apply at any time. Acceptance will be based on space availability and academic performance. Transfer students who are interested in pursuing the EE program should contact the department pre-major advisor early to discuss their options.

Approved Technical Electives *(6 credits total required)*: Other courses may be accepted; see program advisor.

BIOL 204, 205, or 206 INTRODUCTORY SERIES (4)
BIOL 348 HUMAN ANATOMY AND PHYSIOLOGY (5)
CHEM 162, 163 GENERAL CHEMISTRY II, III (5, 4)
CSCI 145 COMPUTER PROGRAM. & LINEAR DATA STRUCT. (4)
CSCI 247 COMPUTER SYSTEMS I (5)
CSCI 241 DATA STRUCTURES (4)
CSCI 3XX AND CSCI 4XX
EE 300 DIRECTED INDEPENDENT STUDY
EE 311 DISCREET SYSTEMS (4)
EE 333 DIGITAL SYSTEM DESIGN (4)
EE 400 DIRECTED INDEPENDENT STUDY
EE 433 DIGITAL SIGNAL PROCESSSING (4)
EE 495 DIRECTED RESEARCH (1-3)
ENRG 420 ENERGY SCIENCE II (3)
ENRG 480 APPLICATIONS ENERGY PRODUCTION (4)
ENGR 170 INTRO TO MATERIALS SCIENCE & ENGR (4)
ENGR 214 STATICS (4)
ENGR 225 MECHANICS OF MATERIALS (5)
MATH 225 MULTIVARIABLE CALC. AND GEOM. II (4)
MATH 226 LIMITS AND INFINITE SERIES (4)
MATH 302 INTRO TO PROOFS VIA NUMBER THEORY (4)
MATH 304 LINEAR ALGEBRA (4)
MATH 307 MATHEMATICAL COMPUTING (4)
MATH 309 INTRO TO PROOF DISCRETE MATH (4)
MATH 342 STATISTICAL METHODS I (4)
MATH 343 STATISTICAL METHODS II (4)
MATH 344 HONORS PROBABILITY AND STATS (4)
MATH 410 MATHEMATICAL MODELING (4)
MATH 430 FOURIER SERIES/DIFFNTL EQNS (4)
MATH 432 SYSTEMS OF DIFFERENTIAL EQUATIONS (4)
MATH 441 PROBABILITY (4)
MATH 458 STOCHASTIC PROCESSES (4)
MATH 473 NUMERICAL LINEAR ALGEBRA (4)
M/CS 335/375 LINEAR OPTIMIZATION/ NUMERICAL COMPUTATION (4)
M/CS 435, 475 NONLINEAR OPTIMIZATION/NUMERICAL ANALYSIS (4)
MFGE 341 QUALITY ASSURANCE (4)
MFGE 342 DESIGN OF EXPERIMENTS (4)
MFGE 453 INDUSTRIAL ROBOTICS (4)
OPS 360, 460 OPERATIONS MANAGEMENT/DESIGNING OPS (4)
OPS 461, 463 PROJECT MANAGEMENT (4)
OPS 463 ENTERPRISE RESOURCE PLANNING SYSTEMS (4)
PHYS 220 PHYSICS W/ CALCULUS IV (4)
PHYS 224 MODERN PHYSICS I (4)
PHYS 225 MODERN PHYSICS II (3)
PHYS 339 OPTICS (3)
PHYS 350 ENGINEERING THERMODYNAMICS (3)
PHYS 368 ELECTROMAGNETISM I (3)
PHYS 369 ELECTROMAGNETISM II (3)

Contact Information for *Electrical Engineering* professors:

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