Engineering

Degree Type
Bachelor of Science in Engineering

Administrator: Chair, Department of Physics and Engineering

Requirements: 90 credits

Required Courses:

Item #	Title	Credits
ENGR1010	Introduction to Engineering	3
ENGR1050	Engineering CAD and Prototyping	3
ENGR1100	Engineering Software Skills	3
ENGR2100	Engineering Statics	3
ENGR2110	Engineering Dynamics	3
ENGR2200	Digital Systems	3
ENGR2200L	Digital Systems Laboratory	1
ENGR2210	Electrical Circuits	3
ENGR2210L	Electrical Circuits Laboratory	1
ENGR2310	Instrumentation and Measurements Laboratory	1
ENGR3100	Mechanics of Materials	3
ENGR3110	Engineering Thermodynamics	3
ENGR3110L	Materials and Thermodynamics Laboratory	1
ENGR3400	Control Systems	3
ENGR3400L	Control Systems Laboratory	1
ENGR3410	Engineering Economics and Ethics	3
ENGR4971	Senior Design Project I/Capstone	2
ENGR4972	Senior Design Project II/Capstone	2
MATH2510	Calculus I	4
MATH2520	Calculus II	4
MATH3530	Calculus III	4
MATH3540	Differential Equations	4
PHYS2110	Physics for Science and Engineering I	3
PHYS2110L	Physics for Science and Engineering I Laboratory	1
PHYS2120	Physics for Science and Engineering II	3
PHYS2120L	Physics for Science and Engineering II Laboratory	1
PHYS3500	Statistical Analysis for Physics and Engineering	3
CHEM2230	General Chemistry for Engineering Students	3
CHEM2230L	General Chemistry for Engineering Students Laboratory	1

ENGR4971, *ENGR4972: must be taken at Northwest Nazarene University.*

Student must complete one of the following concentrations:

Agricultural Engineering Concentration: 17 credits

Item #	Title	Credits
COMP3230	Introduction to Spatial Analysis	3
ENGR4100	Fluid Mechanics	3
ENGR4110	Machine Design	3
ENGR4120	Fluids and Thermal Laboratory	1
ENGR4130	Mechatronics	3
ENGR4130L	Mechatronics Laboratory	1
ENGR4170	Agricultural Automation	3

Computer Engineering Concentration: 17 credits

Item #	Title	Credits
COMP2220	Computer Programming I	3
COMP2220L	Computer Programming I Laboratory	1
COMP2630	Computer Architecture	3
COMP2750	Data Structures	3
COMP3630	Networks and Data Communications I	3
ENGR4230	Embedded Systems	3
ENGR4230L	Embedded Systems Laboratory	1

Electrical Engineering Concentration: 17 credits

Item #	Title	Credits
ENGR4210	Microelectronics	3
ENGR4210L	Microelectronics Laboratory	1
ENGR4230	Embedded Systems	3
ENGR4230L	Embedded Systems Laboratory	1
ENGR4250	Electromagnetics	3
ENGR4260	Communication Systems	3
ENGR4270	Advanced Circuits	3

Mechanical Engineering Concentration: 17 credits

Item #	Title	Credits
ENGR4100	Fluid Mechanics	3
ENGR4110	Machine Design	3
ENGR4120	Fluids and Thermal Laboratory	1
ENGR4130	Mechatronics	3
ENGR4130L	Mechatronics Laboratory	1
ENGR4140	Vibrations	3
ENGR4150	Heat Transfer	3

Engineering Physics Concentration: 17 credits

Item #	Title	Credits
ENGR4100	Fluid Mechanics	3
ENGR4120	Fluids and Thermal Laboratory	1
ENGR4250	Electromagnetics	3
PHYS3130	Modern Physics	3
PHYS3130L	Modern Physics Laboratory	1
PHYS3410	Analytic Mechanics	3
PHYS4810	Fundamentals of Quantum Mechanics	3

All engineering students are required to take and pass the Fundamentals of Engineering exam during their last semester before graduation in order to earn an 'A' in ENGR4972 - Senior Design Project II/Capstone.

Total Credits		**90**