

# NUCLEAR ENGINEERING, MINOR IN

The minor in nuclear engineering consists of 21 credits. It is designed to allow students in other departments (CHEM, CLSE, EGRB, BIOL, PHYS, CMSC, MATH, STAT, ECE) to hybridize their curriculum with nuclear science, engineering and technology to complete this minor during their four-year college degree plan.

Course	Title	Hours
<b>Required courses</b>		
CHEM 101	General Chemistry I	3
EGMN 351	Nuclear Engineering Fundamentals	3
<b>Electives</b>		
Select three courses from:		9
EGMN 352	Nuclear Reactor Theory	
EGMN 355	Radiation Safety and Shielding	
EGMN 359	Nuclear Power Plants	
EGMN 510	Probabilistic Risk Assessment	
EGMN 530	System Analysis of the Nuclear Fuel Cycle	
EGMN 550	Energy and Sustainability	
EGMN 560	Monte Carlo Simulations	
EGMN 575	Fast Breeder Reactors	
Select two from:		6
BIOL 300	Cellular and Molecular Biology	
BIOL 450	Biology of Cancer I	
CHEM 313	Physical Chemistry I	
CHEM 510	Atomic and Molecular Structure	
CLSE 312	Chemical Reaction Engineering	
CLSE 320	Instrumentation Laboratory	
CMSC 304	Programming Languages	
CMSC 435	Introduction to Data Science	
EGRB 307	Biomedical Instrumentation	
EGRB 410	Cellular Engineering	
EGRE 309	Introduction to Electromagnetic Fields	
EGRE 428	Introduction to Integrated Systems Design	
EGRE 429	Advanced Digital Systems Design	
EGRE 471	Power System Analysis	
MATH 415	Numerical Methods	
MATH 435	Mathematical and Computational Modeling	
PHYS 376	Electromagnetism I	
PHYS 380	Quantum Physics I	
STAT 443	Regression	
STAT 447	Introduction to Statistical Data Science	
<b>Total Hours</b>		<b>21</b>

## Note on prerequisites

Prerequisite for EGMN 351 is MATH 200 with a minimum grade of C or permission of the instructor.

Prerequisite for CHEM 101 is MATH 139, MATH 141, MATH 151, MATH 200, MATH 201 or satisfactory score on the VCU mathematics placement test within the one-year period immediately preceding the beginning of the course; and CHEM 100 with a minimum grade of B or satisfactory score on the chemistry placement exam/assessment within the one-year period immediately preceding the beginning of the course.