Nuclear and Radiological Engineering Concentration

Woodruff School of Mechanical Engineering, Georgia Institute of Technology

Introduction

- Concentrations are optional, not required.
- Concentrations are 15 hours and the classes satisfy the Design Elective, the ME Elective (usually) and 9 hours of free electives. In the Nuclear & Radiological Concentration, the ME elective will not be satisfied so the student will need to take a separate ME elective to complete the BSME degree requirements.
- Concentrations are different than minors because they allow students to specialize in a particular area within ME.
- Classes used for a concentration may not also be used towards a minor, an additional concentration, or a second degree.
- This concentration is only available to ME majors who are following the 2019-2020 Catalog Year or later.

Concentration Requirements - To satisfy a concentration, students must do each of the following:

- If necessary, change your curriculum to the 2019-2010 Catalog Year or later by filling out a change of major form.
- Declare your concentration in OSCAR. www.degreeworks.gatech.edu/images/training/concentration_mgt.pdf
- Complete all of the required classes and the correct number of elective classes in the table listed below. The classes required for the concentration will satisfy the Design Elective and 12 hours of free electives.

Course Number and Name	Credit Hours	Lab [3]	Pre-Requisites and Co-Requisites*	Projected Offering	
				Fall	Spring
Required Class					
NRE 2120 Elements of Nuclear & Radiolog. Eng.	3		MATH 1551, PHYS 2211*	X	X [2]
Required ME Design Elective (Choose 1)					
ME 4315 Energy Systems Analysis and Design	3		ME 2110, ME 3345	X	X
ME 3180 Machine Design	3		ME 2110, COE 3001	X	X
Elective Classes (Choose 3)					
Select 9 hours of any NRE 3XXX or NRE 4XXX classes excluding NRE 4699 or NRE 4903 [4, 6.] The list below give most options, but is not a complete list.					
NRE 3301 Radiation Physics	3		MATH 1552*, NRE 2120*, PHYS 2211		X
NRE 3112 Radiation Detection	3	X	NRE 3301	X	
NRE 3208 Nuclear Reactor Physics	3		CS 1371, Math 2552, NRE 2120 or 3301	X	
NRE 3026 Experimental Nuclear Reactor Physics	3	X	NRE 3112, NRE 3208		X
NRE 3316 Radiation Protection Engineering	3		NRE 3301, Math 2552		X
NRE 4214 Reactor Engineering	3		ME 3345, NRE 3208	X	
NRE 4210 Nuclear Reactor Physics II	3		NRE 3208, Math 2552	X	
NRE 4750 Diagnostic Imaging	3		NRE 3112		X
NRE 4803 Nuclear Safeguards	3		NRE 3301		X [2]
NRE 4407 Radiation Biology & Oncology	3		NRE 3301, NRE 3316*	X	
NRE 4795 Nuclear Reactor Materials [5]	3		MSE 2001		

Notes

1. This chart is a projected schedule of class offerings and may change at any time. Students should check OSCAR for exact class offerings during each semester. This table should only be used as a guide.
2. This class is sometimes offered during this semester.
3. This indicates that the course contains a lab component.
4. Students must complete the pre-requisite and co-requisite requirements for each NRE class.
5. This class can count as an ME Elective since it is cross-listed across ME and NRE.
6. NRE classes are only offered one time per year, so plan accordingly. Students need to check OSCAR to see when the classes will be offered.