Nuclear Energy 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 and 9 hours of free electives. In the Nuclear Energy Concentration, the ME elective will not be satisfied if no ME classes are taken outside of the required design elective. If this occurs, 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 or an additional concentration.
- This concentration is only available to ME majors who are following the 2014-2015 Catalog Year or later.

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

- If necessary, change your curriculum to the 2014-2015 Catalog Year or later by filling out a change of major form. The earliest you can do this is spring 2014 semester.
- 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, the ME Elective (possibly) and 9 or 12 hours of free electives.

Course Number and Name	Credit Hours	Lab [3]	Pre-Requisites and Co-Requisites*	ME Elective	Projected Offering (Fall, Spring or Summer) [1]		
					Fall	Spr	Sum
Required Classes							
NRE 3301 Radiation Physics	3		MATH 1552*, PHYS 2211			X	
NRE 3208 Nuclear Reactor Physics I	3		NRE 3301, MATH 2552			X	
Required Design Elective Class (Choose 1)							
ME 4315 Energy Systems Analysis and Design	3		ME 2110, ME 3345	Design	X	X	
ME 3180 Machine Design	3		ME 2110, COE 3001	Design	X	X	X
Elective Classes (Choose 2 classes in one cluster area) • **At least one class in the cluster area MUST be an NRE class.** • **Students who do not take an ME elective within the concentration must still take an ME elective to finish the BSME degree.**							
Fusion Systems Cluster							
NRE 4610 Intro to Plasma Physics & Fusion	3		Senior Standing		X [2]		
ME/NRE 4803 Nuclear Reactor Materials	3		MSE 2001	X	X [2]		
ECE 3072 Energy Systems	3	X	ECE 3710		X	X	X [2]
ECE 3025 Electromagnetics	3		ECE 3710, MATH 2551, MATH 2552, NRE 3301		X	X	X [2]
Power Systems Cluster							
NRE 4214 Reactor Engineering	3		ME 3345, NRE 3208		X		
ME 4340 Applied Fluid Mechanics [4]	3		ME 3345	X			
ECE 3072 Energy Systems	3	X	ECE 3710		X	X	X [2]
Nuclear Reactor Materials Cluster							
ME/NRE 4803 Nuclear Reactor Materials	3		MSE 2001	X	X [2]		
ME 4214 Mechanical Behavior of Materials [4]	3		COE 3001	X			
MSE 4010 Environmental Degradation	3		MSE 2001			X	

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. These classes are not offered on a regular basis. Students need to check OSCAR to see when the classes will be offered.