

# NRE Undergraduate Curriculum (Catalog: 2017 - 2018)

<b>Freshman</b>	<b>Fall</b>	<b>CHEM 1310</b> General Chemistry (See Note 2) 3-3-4	<b>MATH 1551</b> Differential Calculus (Minimum Grade C) 2-0-2	<b>MATH 1553</b> Linear Algebra (Minimum Grade C) 2-0-2	<b>Legislative</b> HIST 2111, HIST 2112, POL 1101, INTA 1200, or PUBP 3000 [ Social Science ] 3-0-3	<b>ENGL 1101</b> English Composition 1 3-0-3	<b>Wellness</b> APPH 1040 or APPH 1050 2-0-2	
	<b>Spring</b>	<b>PHYS 2211</b> Physics 1 3-3-4 <small>MATH 1551, MATH 1552*</small>	<b>MATH 1552</b> Integral Calculus (Minimum Grade C) 4-0-4 <small>MATH 1551</small>	<b>CS 1371</b> Computing for Engineers 3-0-3	<b>NRE 2110</b> Intro to NRE 2-0-2	<b>ENGL 1102</b> English Composition 2 3-0-3 <small>ENGL 1101</small>	= 16 hours  = 16 hours	
<b>Sophomore</b>	<b>Fall</b>	<b>PHYS 2212</b> Physics 2 3-3-4 <small>PHYS 2211</small>	<b>MATH 2551</b> Multivariable Calculus (Minimum Grade C) 4-0-4 <small>MATH 1552, MATH 1553</small>	<b>COE 2001</b> Statics 2-0-2 <small>MATH 1552, PHYS 2211</small>	<b>MSE 2001</b> Engineering Materials 3-0-3 <small>CHEM 1310</small>	<b>Economics</b> ECON 2100, 2101, 2105 or 2106 (See Note 4) 3-0-3	= 16 hours	
	<b>Spring</b>	<b>PHYS 2213</b> Introduction to Modern Physics 3-0-3 <small>PHYS 2212</small>	<b>MATH 2552</b> Differential Equations (Minimum Grade C) 4-0-4 <small>MATH 1552, MATH 1553</small>	<b>NRE 3301</b> Radiation Physics 3-0-3 <small>MATH 1552*, PHYS 2211</small>	<b>ECE 3710</b> Circuits & Electronics 2-0-2 <small>PHYS 2212</small>	<b>Social Science Elective</b> (See Note 5) 3-0-3	= 15 hours  = 16 hours	
<b>Junior</b>	<b>Fall</b>	<b>NRE 3112</b> Radiation Detection (See Note 1, No W's) 2-3-3 <small>NRE 3301</small>	<b>ME 3322</b> Thermodynamics 3-0-3 <small>PHYS 2211, MATH 2552</small>	<b>ME 3340</b> Fluid Mechanics (See Note 7) 3-0-3 <small>COE 2001, ME 3322*,                      MATH 2551, MATH 2552,                      ME 2202 (See Note 7)</small>	<b>ECE 3025</b> Electro-magnetics 3-0-3 <small>ECE 3710, MATH 2551                      MATH 2552, NRE 2110</small>	<b>ECE 3741</b> Instrument & Electronics Lab 0-3-1 <small>ECE 3710</small>	<b>Humanities Elective</b> (See note 5) 3-0-3	
	<b>Spring</b>	<b>NRE 3208</b> Nuclear Reactor Physics I 3-0-3 <small>NRE 3301, MATH 2552</small>	<b>NRE 3316</b> Radiation Protection Engineering 3-0-3 <small>NRE 3301, MATH 2552</small>	<b>COE 3001</b> Mechanics of Deformable Bodies 3-0-3 <small>COE 2001, MATH 2552*</small>	<b>ME 3345</b> Heat Transfer 3-0-3 <small>ME 3322, ME 3340,                      MATH 2552</small>	<b>ISYE 3025</b> Engineering Economics 1-0-1 <small>ECON 2100, 2101, 2105                      or 2106</small>	<b>MATH 3670</b> Statistics & Applications (Minimum Grade C) 3-0-3 <small>MATH 2551</small>	= 16 hours
<b>Senior</b>	<b>Fall</b>	<b>NRE 4208</b> Nuclear Reactor Physics II 4-0-4 <small>NRE 3208, MATH 2552</small>	<b>NRE 4214</b> Reactor Engineering 3-0-3 <small>ME 3322, ME 3340,                      ME 3345</small>	<b>NRE 4328</b> Radiation Sources & Applications 3-0-3 <small>NRE 3301, NRE 3316</small>	<b>Technical Elective</b> (See Note 3) 3-0-3	<b>Social Science Elective</b> (See Note 5) 3-0-3	= 16 hours  = 16 hours	
	<b>Spring</b>	<b>NRE 4206</b> Radiation Physics Lab (See Note 1, No W's) 1-3-2 <small>NRE 3112, NRE 4208</small>	<b>NRE 4232</b> NRE Design (See Note 1, No W's) 1-9-4 <small>NRE 4328, NRE 4208</small>	<b>Technical Elective</b> (See Note 3) 3-0-3	<b>Technical Elective</b> (See Note 3) 3-0-3	<b>Humanities Elective</b> (See Note 5) 3-0-3	= 15 hours	

**NOTES:** \* Class co-requisites have an asterisk (\*) after it. These classes can be taken prior to or at the same time.

1. NRE 3112, 4206 & 4232 cannot be dropped after registration ends without documented medical reasons.
2. **CHEM 1310:** CHEM 1211K can substitute for CHEM 1310. CHEM 1211K & 1212K are recommended for pre-health students.
3. **Technical Electives** are any 3000 level courses or above from the Colleges of Engineering, Science or Computing that do not duplicate any other class used for the BSNRE degree. See back for more information.
4. **Economics:** Students can receive credit for only one of ECON 2100, ECON 2101, ECON 2105 & ECON 2106. The only exception is that students can receive 6 hours credit for both ECON 2105 and ECON 2106.
5. **Humanities Electives and Social Science Electives:** See page 2 for a link to the list of classes.
6. **Ethics Overlay** is taken as either a humanities elective or social science elective in the NRE curriculum.  
 Humanities Ethics: PHIL 3105, PHIL 3109, PHIL 3127 and PHIL 4176      Social Science Ethics: HTS 2084, INTA 2030
7. NRE students do not take ME 2202, so NRE 3301 or NRE 2110 will satisfy the pre-req for registration.

126 Total Hours

<b>Overlay Area</b>
<b>Ethics</b>
PHIL 3105, PHIL 3109, PHIL 3127, PHIL 4176, HTS 2084 or INTA 2030 ( See Note 6 ) 3-0-3

# Undergraduate Curriculum Sheet Explained

## Understanding the Curriculum Guide

**Class Number** → NRE 4206

**Notes about** → Radiation Physics Lab

**Lecture Hours (per week)** → 1-3-2

**Pre-Requisites & Co-Requisites\*** → NRE 3112, NRE 4208

**Class** → NRE 4206

**Lab Hours** → [Dark Blue Box]

**Total Credit** → [Dark Blue Box]

**Included in Major GPA if filled in with dark color** → [Dark Blue Box]

**Pre-requisites:** These classes must be completed before you can take the class.

**\*Co-requisites:** These classes can be taken at the same time or before the class. You must register for the co-req first to avoid registration errors.

## GPA & Grade Requirements

- All classes taken for the BSNRE degree must be taken LETTER GRADE. This includes all electives.
- Overall GPA:**
  - Must be 2.00 or above (truncated) at graduation.
- Required Grades:**
  - Minimum grade of a D or better is required for each class except as noted.
  - C or better is required for MATH 1551, MATH 1552, MATH 1553, MATH 2551, MATH 2552 and MATH 3670.
- Major GPA:**
  - All NRE classes are used to calculate the major GPA. Technical electives are used if they are NRE classes.
  - Must be 2.00 or above (truncated) at graduation.

## Technical Electives

- Technical Electives may be selected from any course offered in the College of Engineering, Science or Computing at the 3000 level or above, excluding Psychology (PSYC) and Applied Physiology (APPH).
- Technical electives cannot overlap any other course which you intend to use for your BSNRE.
- Students who are eligible to take graduate level classes may use most as technical electives.
- Research:** Students may use 4 hours maximum of 4699 or 4903 for technical elective credit. Research does not have to be NRE specific research; it can be from the colleges of engineering, science or computing.

## Humanities, Social Science and Overlay Requirement (Ethics)

- Humanities Electives:** See <http://catalog.gatech.edu/academics/undergraduate/core-curriculum/core-area-c/>
- Social Science Electives:** See <http://catalog.gatech.edu/academics/undergraduate/core-curriculum/core-area-e/>
- Ethics Overlay:** Ethics must be one of PHIL 3105, PHIL 3109, PHIL 3127, PHIL 4176, HTS 2084 or INTA 2030. Ethics can be used for a humanities elective or a social science elective depending on which class is selected.  
*Humanities Versions of Ethics:* PHIL 3105, PHIL 3109, PHIL 3127 or PHIL 4176  
*Social Science Versions of Ethics:* HTS 2084 or INTA 2030

## Frequency of Class Offerings

Class	Semesters Available
NRE 2110	Spring Only
NRE 3112	Fall Only
NRE 3208	Spring Only
NRE 3301	Spring Only
NRE 3316	Spring Only
NRE 4206	Spring Only
NRE 4208	Fall Only
NRE 4214	Fall Only
NRE 4232	Spring Only
NRE 4328	Fall Only
COE 2001	Summer, Fall, Spring *
COE 3001	Summer, Fall, Spring *
ECE 3025	Summer, Fall, Spring *
MATH 3670	Summer, Fall, Spring *
ME 3322	Summer, Fall, Spring *
ME 3340	Summer, Fall, Spring *
ME 3345	Summer, Fall, Spring *

\* Summer classes may be cancelled due to low enrollments.