

NRE Undergraduate Curriculum (Catalog: 2009 - 2010)

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|------------------|---------------|--|--|---|---|--|---|
| Freshman | Fall | CHEM 1310 General Chemistry 3-3-4 | MATH 1501 Calculus 1 (Minimum Grade C) 4-0-4 | HISTORY HIST 2111, HIST 2112, POL 1101, INTA 1200, or PUBP 3000 (Social Scien, See Note 4) 3-0-3 | HPS 1040 Wellness 2-0-2 | ENGL 1101 English Composition 1 [Humanities] 3-0-3 | = 16 hours |
| | Spring | PHYS 2211 Physics 1 3-3-4 <small>MATH 1501</small> | MATH 1502 Calculus 2 (Minimum Grade C) 4-0-4 <small>MATH 1501</small> | CS 1371 Introduction to Computing 3-0-3 | NRE 2110 Introduction to Nuclear & Rad. Engineering 2-0-2 | ENGL 1102 English Composition 2 [Humanities] 3-0-3 <small>ENGL 1101</small> | |
| Sophomore | Fall | PHYS 2212 Physics 2 3-3-4 <small>PHYS 2211</small> | MATH 2401 Calculus 3 (Minimum Grade C) 4-0-4 <small>MATH 1502</small> | COE 2001 Statics 2-0-2 <small>MATH 1502, PHYS 2211</small> | Economics ECON 2100, ECON 2105 or ECON 2106 [Social Science] (See Note 5) 3-0-3 | Humanities Elective 3-0-3 | = 16 hours |
| | Spring | PHYS 2213 Introduction to Modern Physics 3-0-3 <small>PHYS 2212</small> | MATH 2403 Differential Equations (Minimum Grade C) 4-0-4 <small>MATH 1502</small> | NRE 3301 Radiation Physics 3-0-3 <small>MATH 1502, PHYS 2211</small> | MSE 2001 Engineering Materials 3-0-3 <small>CHEM 1310</small> | ECE 3710 Circuits & Electronics 2-0-2 <small>PHYS 2212</small> | |
| Junior | Fall | NRE 3112 Nuc. Radiation Detection (See Note 6, No W's) 2-3-3 <small>NRE 3301</small> | ME 3322 Thermodynamics 3-0-3 <small>PHYS 2211, MATH 2403</small> | ME 3340 Fluid Mechanics (See Note 7) 3-0-3 <small>COE 2001, MATH 2403 ME 2202 (See Note 7), ME 3322*</small> | ECE 3025 Electro-magnetics 3-0-3 <small>ECE 3710, MATH 2401 MATH 2403, NRE 2110</small> | ECE 3741 Instrument & Electronics Lab 0-3-1 <small>ECE 3710</small> | Social Science Elective 3-0-3 |
| | Spring | NRE 3208 Nuclear Reactor Physics I 3-0-3 <small>NRE 3301, MATH 2403</small> | NRE 3316 Radiation Protection Engineering 3-0-3 <small>NRE 3301, MATH 2403</small> | COE 3001 Mechanics of Deformable Bodies 3-0-3 <small>COE 2001, MSE 2001*, MATH 2403*</small> | ME 3345 Heat Transfer 3-0-3 <small>ME 3322, ME 3340, MATH 2403</small> | ISYE 3025 Engineering Economics 1-0-1 <small>(ECON 2100, 2105 or 2106)</small> | MATH/ISYE 3770 Statistics (Minimum Grade C) 3-0-3 <small>MATH 2401</small> |
| Senior | Fall | NRE 4208 Nuclear Reactor Physics II 4-0-4 <small>NRE 3208, MATH 2403</small> | NRE 4214 Reactor Engineering 3-0-3 <small>ME 3322, ME 3340, ME 3345</small> | NRE 4328 Radiation Sources & Applications 3-0-3 <small>NRE 3301, NRE 3316</small> | Technical Elective (See Note 2) 3-0-3 | Ethics HTS 2084, INTA 2030, PST 3105, PST 3109, PST 3127 or PST 4176 (See Notes 1 & 3) 3-0-3 | = 16 hours |
| | Spring | NRE 4206 Radiation Physics Lab (See Note 6, No W's) 1-3-2 <small>NRE 3112, NRE 4208</small> | NRE 4232 NRE Design (See Note 6, No W's) 1-9-4 <small>NRE 4328, NRE 4208</small> | Technical Elective (See Note 2) 3-0-3 | Technical Elective (See Note 2) 3-0-3 | Social Science or Humanities Elective (See Note 3) 3-0-3 | = 15 hours |

NOTES:

1. **Ethics** - PST 3105, 3109, 3127 & 4176 are humanities (HUM). HTS 2084 & INTA 2030 are social sciences (SS).
 2. **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). This course cannot overlap any course used for your BSNRE. See backside for rules about using research for TE's.
 3. If **Ethics** is humanities, social science elective is required for the **Social Science or Humanities Elective**. If **Ethics** is social science, humanities elective is required for the **Social Science or Humanities Elective**.
 4. Credit is only awarded for INTA 1200 or POL 1101, not both. Classes are exactly the same.
 5. Credit is awarded for only Econ 2100 or Econ 2101 or (Econ 2105 and/or Econ 2106).
 6. NRE 3112, 4206 & 4232 cannot be dropped after registration ends without documented medical reasons.
 7. NRE students do not take ME 2202, so NRE 3301 or NRE 2110 will satisfy the pre-req for registration.
- * Class co-requisites have an asterick (*) after the class. Pre-reqs do not have an asterick behind the class.

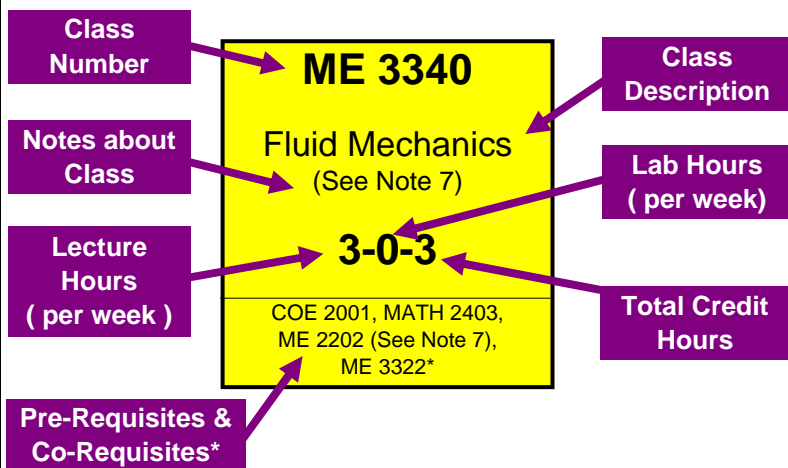
126 Total Hours

General Requirements

- A. All classes must be taken LETTER GRADE.
- B. Minimum grade of D required for each class, except as noted.
- C. Overall GPA must be greater than 2.00 at graduation.
- D. NRE GPA (including all NRE classes) must be greater than 2.00 at graduation.

Undergraduate Curriculum Sheet Explained

Understanding the Curriculum Guide



Pre-requisites: These classes must be completed before this class.

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

Core Classes

Humanities Electives (12 hours total)

ENGL 1101 (3 hrs)
 ENGL 1102 (3 hrs)
 Humanities Elective (3 hrs)
 * Humanities Elective (3 hrs)

Social Science Electives (12 hours total)

Economics (3 hrs) - ECON 2100, ECON 2105 or ECON 2106
 History (3 hrs) - HIST 2111, HIST 2112, POL 1101, INTA 1200 or PUBP 3000
 Social Science Elective (3 hrs)
 * Social Science Elective (3 hrs)

*** Note:** One humanities or social science elective must be ethics. Ethics must be selected from:

PST 3105 (Humanities) PST 4176 (Humanities)
 PST 3109 (Humanities) INTA 2030 (Social Science)
 PST 3127 (Humanities) HTS 2084 (Social Science)

Electives: Classes that satisfy social science electives and humanities electives can be found at:

<http://www.catalog.gatech.edu/students/ugrad/core/core.php>

Technical Electives

- 1. 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 substantially overlap any course which you intend to use for your BSNRE.
- 3. Research:** Students may use 4 hours maximum of 4699/4903 for technical elective credit. Research does not have to be NRE specific research; it can be from the college of engineering, science or computing.

2009-2010 Curriculum Change

NRE 3112 - Nuclear Radiation Detection

- *Fall 2010 & Later:* Class will be a fall only class

NRE 3208 - Nuclear Reactor Physics 1

- *Spring 2010 & Later:* New spring only class

NRE 3212 - Fundamentals of NRE

- *Spring 2009 & Later:* Class is removed from curriculum

NRE 3301 - Radiation Physics

- *Fall 2009:* Class taught under old format. Pre-reqs: PHYS 2213*
- *Spring 2010 & Later:* Spring class only taught under new format
- *Spring 2010 & Later:* Pre-reqs are Math 1502 and PHYS 2211

NRE 4204 - Nuclear Reactor Physics

- *After Fall 2010:* Class will be removed from curriculum.

NRE 4206 - Radiation Physics Lab

- *Through Spring 2011:* Prereqs are NRE 3112 and NRE 4204
- *Spring 2012 & Later:* Prereqs are NRE 3112 and NRE 4208

NRE 4208 - Nuclear Reactor Physics 2

- *Fall 2011 & Later:* New fall only class

NRE 4232 - NRE Design

- *Through Spring 2011:* Pre-reqs are NRE 4328 and NRE 4204
- *Spring 2012 & Later:* Pre-reqs are NRE 4328 and NRE 4208

Key: **New Class (green)**, **Obsolete Class (red)**, **Modified Class (black)**

* Indicates class is a co-req. These classes can be taken at the same time.

Class Offerings

| Class | Frequency of Offering |
|----------------|---|
| NRE 2110 | Spring |
| NRE 3112 | Fall (starting Fa '10, see transition plan) |
| NRE 3208 | Spring (starting Sp '10) |
| NRE 3212 | No Longer Offered |
| NRE 3301 | Spring (starting Sp '10, see transition plan) |
| NRE 3316 | Spring |
| NRE 4204 | Fall (Fall '10 is last offering) |
| NRE 4206 | Spring |
| NRE 4208 | Fall (starting Fa '11) |
| NRE 4214 | Fall |
| NRE 4232 | Spring |
| NRE 4328 | Fall |
| COE 2001 | Every Semester * |
| COE 3001 | Every Semester * |
| ECE 3025 | Every Semester * |
| ISYE/MATH 3770 | Every Semester * |
| ME 3322 | Every Semester * |
| ME 3340 | Every Semester * |
| ME 3345 | Every Semester * |

* Summer classes may be cancelled due to low enrollments.

2009-2010 Curriculum Change - Class Transition Schedule

| Year | Fall 2009 | Spring 2010 | Fall 2010 | Spring 2011 | Fall 2011 | Spring 2012 |
|--------|----------------------------------|---|----------------------------------|---|----------------------------------|--|
| Fresh. | -- | NRE 2110 | -- | NRE 2110 | -- | NRE 2110 |
| Soph. | -- | NRE 3301 (new prereqs) | -- | NRE 3301 (new prereqs) | -- | NRE 3301 (new prereqs) |
| Junior | NRE 3301 (old prereqs) | NRE 3112 NRE 3316 NRE 3208 ** | NRE 3112 | NRE 3208 NRE 3316 | NRE 3112 | NRE 3208 NRE 3316 |
| Senior | NRE 4204 NRE 4214 NRE 4328 | NRE 4206 (old prereqs) NRE 4232 (old pre-reqs) | NRE 4204 NRE 4214 NRE 4328 | NRE 4206 (old prereqs) NRE 4232 (old pre-reqs) | NRE 4208 NRE 4214 NRE 4328 | NRE 4206 (new prereqs) NRE 4232 (new prereqs) |

** NRE 3208 in Spring 2010 is only for students who are off the regular schedule and missed NRE 3212 in Spring 2009.