Approved Program of Study for Undergraduate Minors
Georgia Institute of Technology
Office of the Registrar
2014 -2015
Minor in Energy Systems
(Track for Biology Students)

Please type or print in ink:

<table>
<thead>
<tr>
<th>Name (first/last):</th>
<th>GT Student ID Number:</th>
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<tbody>
<tr>
<td>GT Email Address:</td>
<td>Daytime Phone:</td>
</tr>
<tr>
<td>Major:</td>
<td>Anticipated Graduation Date:</td>
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In addition to the guidelines listed below, you are responsible for reviewing and following the general guidelines for minors: http://www.catalog.gatech.edu/academics/minorguide.php

The minor includes requirements for courses which cut across disciplines. These courses are intended to add breadth of knowledge in areas outside the student’s major but important to energy systems. A terminal “capstone” or project course provides an opportunity for students from multiple disciplines to work together in multidisciplinary teams on a significant project in the energy area.

The breadth courses and the capstone project course, courses taken by all students completing the minor, require one or more pre-requisites; specifically, basic economics, mathematics, and lab science courses. List of required prerequisites and curriculum requirements and options for this minor are on the following pages. All courses in the minor also must be 3000 level and above.

It is the major advisor’s responsibility to verify that students are not using any courses required by name and number for their major, that they are not using any core area A-E courses (including humanities and social sciences), and that they are not using any courses for more than one minor or certificate. Free electives and technical electives may be used towards minors.

List the courses completed for the requested minor:

<table>
<thead>
<tr>
<th>Course and Section</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Grade</th>
<th>Semester Completed</th>
</tr>
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<tbody>
<tr>
<td>GT 4813</td>
<td>Project in Energy Systems</td>
<td>3</td>
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Student Signature:

Major School Signature:

Minor School Signature (Management):
Prerequisite Courses
The prerequisites needed for one or more of the courses required for the minor (breadth courses and the capstone project course) are (all existing courses):

a) Mathematics (MATH 1501, 1502, 2401)
b) Physics (PHYS 2211, 2212)
c) Chemistry (CHEM 1310 or 1211)
d) Economics ECON 2100 or 2101 or (2105 and 2106)

Students ordinarily pursue the minor upon completion of the needed prerequisites. However, the depth course requirements (see below) may be taken as soon as students have met the relevant prerequisites.

Depth Courses
The minor requires six hours of depth courses related to energy systems. A list of acceptable courses which meet the depth requirement is provided by each major approving the minor. Depth courses may be taken in the student’s major to ensure the depth in that major needed to peruse a multidisciplinary minor. All acceptable depth courses must be consistent with the goals of the minor. Examples of acceptable courses include science courses which cover energy science like biomass or other relevant basic science.

Menus of Depth Courses by Program
The Depth Courses below may have additional prerequisites; please check http://www.catalog.gatech.edu/courses/index.php to view the current prerequisites.

Biology
BIOL 4221 Biological Oceanography
BIOL 4410 Microbial Ecology
BIOL 4418 Microbial Physiology
BIOL 4440 Plant Physiology
CHEM 3511 Survey of Biochemistry
CHEM 4511 Biochemistry I
CHEM 4512 Biochemistry II
EAS 4410 Climate and Global Change
EAS 3110 Energy, the Environment, and Society

Breadth Courses
The minor requires six hours of breadth courses (two courses). Students should strive to complete the necessary prerequisites and the depth courses prior to enrolling in the breadth courses. However, depth courses may be taken concurrently with the courses taken to meet the breadth requirement.

- ME 3700 Introduction to Energy Systems Engineering
- ECON 3300 Economics of International Energy Markets
- PUBP 3350  Energy Policy

Capstone Course
GT 4813  Project in Energy Systems

Ordinarily, students must complete all minor requirements before they can register for the Project in Energy Systems course.