






**Sustainable Engineering Discipline Tracks (Recommended Courses):**

 <b>Alternative &amp; Renewable Energy</b>	 <b>Sustainable Infrastructure</b>	 <b>Sustainable Materials</b>	 <b>Water Resources Sustainability</b>	 <b>Sustainable Systems</b>
<ul style="list-style-type: none"> <li>• <b>ECE7800 Renewable Energy Systems (Sp)</b></li> <li>• ECE7000 Renewable Energy Policy (Su)</li> <li>• ECE7580 Intro to Power Electronics (Fa, even)</li> <li>• ECE7810 Power System Modeling (Sp)</li> <li>• ECE8815 Smart Energy Systems (Fa, odd)</li> <li>• EGR7850 Electro-chemical Power Sources (Sp)</li> <li>• CHE7651 Survey of Biomass Conversion (Fa, even)</li> <li>• EGR7123 ICT &amp; Energy for Development (Sp, odd) *</li> </ul>	<ul style="list-style-type: none"> <li>• <b>EGR9015 Sustainable Infrastructure (Sp)</b></li> <li>• EGR8113 Sustainable Bldgs. &amp; Operations (Sp)</li> <li>• EGR8111 Advanced LCA (Fa) *</li> <li>• EGR7200 Biomimicry (Sp)</li> <li>• CEE8303 Urban Planning (Sp, odd)</li> <li>• CEE8201 Urban Transportation Engineering (Fa, odd)</li> <li>• GEV7040 Intro to GIS (Fa &amp; Sp)</li> </ul>	<ul style="list-style-type: none"> <li>• <b>EGR7113 Sustainable Materials &amp; Design (Fa)</b></li> <li>• EGR7200 Biomimicry (Sp)</li> <li>• ME7040 Intro to Finite Element Analysis (Sp, odd)</li> <li>• ME7250 Nano/ Micro Scale Material Behavior (Fa, even)</li> <li>• ME7501 Reinforced Composites (Sp)</li> <li>• CHE7570 Polymer Science &amp; Engineering (Su)</li> <li>• CEE8439 CE Materials (Fa, odd)</li> <li>• EGR8111 Advanced LCA (Fa) *</li> </ul>	<ul style="list-style-type: none"> <li>• CEE7111 Intro to Hydraulics &amp; Hydrology (Su) *</li> <li>• CEE7211 Water Resources Planning &amp; Management (Fa) *</li> <li>• CEE8510 Groundwater Hydrology (Sp, odd) *</li> <li>• CEE8501 Surface Water Hydrology (Fa) *</li> <li>• CEE8503 Open Channel Hydraulics (Fa) *</li> <li>• CEE8502 Watershed Modeling (Sp, odd) *</li> <li>• CEE8507 Enviro Fluids (Sp, even)</li> <li>• CEE8508 Urban Hydrology (Sp, even) *</li> <li>• EGR7121 Sustainable WASH (Sp, even) *</li> <li>• GEV7040 Intro to GIS (Fa &amp; Sp)</li> </ul>	<ul style="list-style-type: none"> <li>• <b>EGR7115 Sustainable Engineering Systems (Sp)</b></li> <li>• EGR7113 Sustainable Materials (Fa)</li> <li>• EGR7120 International Development (Fa)</li> <li>• EGR7200 Biomimicry (Sp)</li> <li>• EGR8111 Advanced LCA (Fa) *</li> <li>• EGR8112 Sustainable Supply Chain (Sp)</li> <li>• EGR9015 Sustainable Infrastructure (Sp)</li> <li>• ECE7800 Renewable Energy Systems (Sp)</li> <li>• GEV7040 Intro to GIS (Fa &amp; Sp)</li> </ul>

Notes on engineering discipline tracks:

- Courses listed in bold are required for the track.
- Courses with additional pre-requisites beyond the general program pre-requisites are denoted with a \*.
- The Water Resources Sustainability Track requires additional pre-requisites, including undergraduate courses in Statics and Fluid Mechanics. CEE7111 Intro to Hydraulics & Hydrology or an undergraduate equivalent is a foundational course and is a pre-requisite for most other courses in the track. A two-course sequence of either CEE8501 + CEE8502 or CEE8503 + CEE8507 is also required to complete the track. Please contact [iajn.hunt@villanova.edu](mailto:iajn.hunt@villanova.edu) if you are interested in pursuing the Water Resources Sustainability Track.
- GEV7040 Intro to GIS requires special permission as the course is offered outside of the College of Engineering.
- The courses listed above represent a current list of recommended track courses. As courses in the Engineering Departments are evolving, this list will be periodically updated to stay current.

- **\*Note for taking courses outside of Graduate Engineering:** “The Sustainable Engineering program allows students to take up to two graduate-level courses outside of the College of Engineering, in the areas of Chemistry, Physics, Math and Geography/Environment. These requests will be reviewed on a case-by-case basis and must be approved by the student’s advisor and the graduate chair of Sustainable Engineering. The courses must fit into the student’s track and research topic, and also allow students to meet the requirements for completing core and research courses.”