# Environmental and Sustainable Engineering Planning Checklist (B.S.)

## General Education

| Art | Math |
| Challenges in the 21st Century | Natural Sciences |
| Foreign Language | Social Science |
| Humanities | US History |
| International Perspectives | Writing and Critical Inquiry |

## Environmental and Sustainable Engineering Core Courses (44 Credits)

- ESE 110: Intro to Engineering (2)**
- ESE 201: Statics (3)
- ESE 202: Strength of Materials (3)
- ESE 221: Intro to Sustainable Engineering (3)
- ESE 301: Introduction to ESE (3)
- ESE 321: Engineering Applications in Sustainable Design (3)
- ESE 351: Fluid Mechanics (3)
- ESE 381: Energy Engineering (3)
- ESE 411: Water and Wastewater Treatment (3)
- ESE 412: Advanced Wastewater Engineering (3)
- ESE 431: Air Pollution Control (3)
- ESE 432: Air Quality Modeling (3)
- ESE 451: Water Resources Engineering (3)
- ESE 471: Hazardous Waste Management (3)
- ESE 497: Senior Capstone Design (3) [Seniors]

Pre/Co-requisite: AMAT 100, 112 or 118
Pre: AMAT 113 Co-requisite AMAT 214
Pre-requisite: ESE 201 and AMAT 214
Pre-requisite: AMAT 113 and ACHM 121
Pre-requisite: ESE 221
Pre-requisite: ESE 201, A PHY 140 or A PHY 142, A MAT 214
Pre-requisite: AMAT 112 or 118; APHY 140 or 142
Pre: AMAT 113 or 119 or TMAT 119: Calculus II (4)**
Pre: AMAT 112 OR 118 OR TMAT 118: Calculus I (4)**
Pre: AMAT 113 OR 119 OR TMAT 119: Calculus II (4)**
Pre: AATM 210/210Z
Pre: AATM 210/210Z
Pre-requisite: ESE 351
Pre-requisite: ESE 301, ESE 351
Pre-requisite: Senior standing and permission of dept.

## Interdisciplinary Core Courses: Atmospheric & Env, Env Health Sci, Comp Eng (20 Credits)

- AATM 210: Atm Structure, Thermodynamics, and Circulation (3) [Fall]
- AENV 250: Sustain. Develop: Energy and Resources (3) [Spring]
- HSPH 321: Global Env. Issues & Effect on Human Health (3)
- IEHS 560: Sustainability, Green Design and Public Health (3) [Seniors]
- ICSI/IECE 201: Intro to Computer Science (4)
- ICSI/IECE 210: Discrete Structures (4)

Pre: AMAT 112 or 118; APHY 140 or 142
Pre: ACHM 120 or 130, AMAT 111 or 112, APHY 140 or 142
Pre: One semester of college level bio or chem
Pre: Permission of instructor
Pre-requisite: AMAT 112

## Mathematics and Science Courses (34 Credits)

- ACHM 120: General Chemistry I (3)**
- ACHM 124: General Chemistry Lab I (1)
- ACHM 121: General Chemistry II (3)**
- ACHM 125: General Chemistry Lab II (1)
- ABIO 130: Biology I (3)
- ABIO 201: Introduction to Biological Investigations I (1) [Fall]
- APHY 140/142: Physics I: Mechanics (3)
- APHY 145: Physics Lab I (1) [Fall]

Pre AMAT 112 OR 118 OR TMAT 118: Calculus I (4)**
Pre: AMAT 113 OR 119 OR TMAT 119: Calculus II (4)**
Pre: AMAT 214: Calculus of Several Variables (4)
Pre: AMAT 311: Ordinary Differential Equations (3)
Pre: AMAT 370: Prob. & Stat. for Eng. & the Sci (3) [Fall]

## ESE Electives (9 Credits)

- AATM 200: Natural Disasters (3)
- AATM 301: Surface Hydrology and Hydrometeorology (3)
- AGOG 496: Geographic Information Systems (3)
- AATM 304/304Z: Air Quality and Pollution Policy (3)
- HSPH 323: Environmental Laboratory Perspectives in Public Health (3)
- EHS 520: Environmental Chemistry (3)
- AUSP 452: CADD in Planning (3)
- AENV 315: Environmental Statistics and Computation (4)
- IESE 452: Groundwater Hydrology (3)

Pre: AATM 210 [alternate fall semesters: 2019…]
Pre: familiarity w/ maps and coordinate systems
Pre: A ATM 210; A MAT 112 or T MAT 118; A PHY 140 or T PHY 141
Pre: A ATM 210, A MAT112 or T MAT 118; A PHY 140 or T PHY 141
Pre: AATM 210
Pre: 2 years of college chemistry or instructor consent
Pre: A ATM 210, A MAT112 or T MAT 118; A PHY 220 recommended

Pre: IESE 451

** Grade of C or better required to progress in major