INDUSTRIAL ENGINEERING, B.S.

Degree Requirements (120 hours)

See College of Engineering and Computing (https://academicbulletins.sc.edu/undergraduate/engineering-computing/) for progression requirements and special academic opportunities.

Program of Study

Requirements	Credit Hours
1. Carolina Core	34-43
2. College Requirements	0
3. Program Requirements	44-53
4. Major Requirements	33

Founding Documents Requirement

All undergraduate students must take a 3-credit course or its equivalent with a passing grade in the subject areas of History, Political Science, or African American Studies that covers the founding documents including the United State Constitution, the Declaration of Independence, the Emancipation Proclamation and one or more documents that are foundational to the African American Freedom struggle, and a minimum of five essays from the Federalist papers. This course may count as a requirement in any part of the program of study including the Carolina Core, the major, minor or cognate, or as a general elective. Courses that meet this requirement are listed here (https://academicbulletins.sc.edu/undergraduate/founding-document-courses/).

1. Carolina Core Requirements (34-43 hours)

CMW – Effective, Engaged, and Persuasive Communication: Written (6 hours)

- ENGL 101 - *must be passed with a grade of C or higher.*
- ENGL 102

ARP – Analytical Reasoning and Problem Solving (8 hours)

Must be passed with a grade of C or higher.

- MATH 141
- MATH 142

SCI – Scientific Literacy (8 hours)

- `Any CC-SCI course including two laboratories.`

GFL – Global Citizenship and Multicultural Understanding: Foreign Language (0-6 hours)

Score two or better on foreign language placement test; or complete the 109 and 110 courses in FREN, GERM, LATN or SPAN; or complete the 121 course in another foreign language.

- CC-GFL courses (https://academicbulletins.sc.edu/undergraduate/carolina-core-courses/)

GHS – Global Citizenship and Multicultural Understanding: Historical Thinking (3 hours)

- any CC-GHS course (https://academicbulletins.sc.edu/undergraduate/carolina-core-courses/)

GSS – Global Citizenship and Multicultural Understanding: Social Sciences (3 hours)

- any CC-GSS course (https://academicbulletins.sc.edu/undergraduate/carolina-core-courses/)

AIU – Aesthetic and Interpretive Understanding (3 hours)

- any CC-AIU course (https://academicbulletins.sc.edu/undergraduate/carolina-core-courses/)

CMS – Effective, Engaged, and Persuasive Communication: Spoken Component [1] (0-3 hours)

- any overlay or stand-alone CC-CMS course (https://academicbulletins.sc.edu/undergraduate/carolina-core-courses/)

INF – Information Literacy [1] (0 hours)

- ENGL 102 (CMW/INF overlay)

VSR – Values, Ethics, and Social Responsibility [1] (0-3 hours)

- any overlay or stand-alone CC-VSR course (https://academicbulletins.sc.edu/undergraduate/carolina-core-courses/)

[1] **Carolina Core Stand Alone or Overlay Eligible Requirements** — Overlay-approved courses offer students the option of meeting two Carolina Core components in a single course. A maximum of two overlays is allowed. The total Carolina Core credit hours must add up to a minimum of 34 for the BS in Industrial Engineering.

2. College Requirements (0 hours)

No college-required courses for this program.

3. Program Requirements (44-53 hours)

Supporting Courses (30-35 hours)

Course	Title	Credits
Foundational Courses (12)		**12**
Take all of the following with a minimum of 12 hours:		
INDE 190	Introduction to Industrial Engineering	
or ENCP 101	Introduction to Engineering	
ECON 421	Engineering Economics	
MATH 344	Applied Linear Algebra	
STAT 509	Statistics for Engineers	
CAD Electives (3)		**3**
Select at least three hours from the following:		
ENCP 102	Introduction to Computer-Aided Design	
ECIV 111	Introduction to Engineering Graphics and Visualization	
EMCH 111	Introduction to Computer-Aided Design	
Computing Electives (6-8)		**6-8**
Select at least six hours from the following:		

CSCE 102	General Applications Programming	
CSCE 106	Scientific Applications Programming	
CSCE 145	Algorithmic Design I	
CSCE 146	Algorithmic Design II	
ENCP 201	Introduction to Applied Numerical Methods	
or ECIV 201	Computational Methods for Civil Engineering	
or EMCH 201	Introduction to Applied Numerical Methods	
ITEC 104	Program Design and Development	
or CSCE 104	Program Design and Development	
ITEC 352	Software Design	
Math and Science Electives (9-12)		**9**
Select at least nine hours from the following:		
MATH 151 – MATH 599		
STAT 506 – STAT 650		
ASTR 101 – ASTR 599		
BIOL 110 – BIOL 690		
CHEM 101 – CHEM 659		
ENVR 101 – ENVR 572		
GEOL 101 – GEOL 699		
MSCI 101 – MSCI 627		
PHYS 101 – PHYS 599		
Total Credit Hours		**30-32**

Electives (9-23 hours)

The program requires a minimum of 120 total credit hours. The number of electives depends upon how a student fulfills other program requirements. UNIV 101 is recommended.

4. Major Requirements (33 hours)

Course	Title	Credits
Take all of:		
INDE 291	Materials & Manufacturing	3
INDE 292	Work Design & Ergonomics	3
INDE 391	Production Engineering & Management	3
INDE 392	Operations Research in Engineering	3
INDE 397	Industrial Engineering Laboratory	3
INDE 490	Quality Engineering	3
INDE 496	Facilities Planning & Material Handling	3
INDE 497	Industrial Engineering Capstone Project	3
INDE 591	Smart Manufacturing	3
INDE 593	Supply Chain Engineering	3
INDE 595	Systems Simulation	3
Total Credit Hours		**33**