

**POLYTECHNIC UNIVERSITY OF PUERTO RICO
COLLEGE OF ENGINEERING AND GEOMATIC SCIENCES
INDUSTRIAL ENGINEERING DEPARTMENT**

BACHELOR OF SCIENCE IN INDUSTRIAL ENGINEERING CURRICULUM (146 CRDS)

Course No.	Course Title	Course Type	Crds.	Pre-Requisites	Co-requisites
DEVELOPMENTAL STUDIES (33 CRDS)					
ATUL 0100	Adjustment to University Life	R	3		
ENGL 0100	Preparatory English	R	3		
ENGL 0110	English Grammar	R	3	ENGL 0100 or PAO	
SPAN 0100	Preparatory Spanish	R	3		
SPAN 0110	Spanish Grammar	R	3	SPAN 0100 or PAO	
MATH 0102	Preparatory Mathematics	R	3	College Board 200-549	
MATH 0106	Elementary Algebra	R	3	College Board 550-649 or Math 102	
MATH 0110	Intermediate Algebra	R	3	College Board 650-699 or Math 0106	
MATH 1330	Precalculus I	R	3	MATH 0110 or PAO	
MATH 1340	Precalculus II	R	3	MATH 1330	
SCIE 0110	Introduction to Physics	R	3	MATH 0110	

MATHEMATICS (18 CRDS)

MATH 1350	Calculus I	R	4	MATH 1340 or Equivalent	
MATH 1360	Calculus II	R	4	MATH 1350	
MATH 1370	Calculus III	R	4	MATH 1360	
MATH 2350	Differential Equations	R	3	MATH 1370, SCIE 1440	
MATH 2360	Linear Algebra	R	3	MATH 1360	

SOCIO HUMANISTIC & LANGUAGES (21 CRDS)

SPAN 1010	Linguistic Analysis of Literary Genres	R	3	SPAN 0110 or Equivalent	
SPAN 2020	Business Spanish	R	3	SPAN 1010	
ENGL 1010	The Study of the Essay as a Literary Genre	R	3	ENGL 0110 or Equivalent	
ENGL 2020	Business English and Communication	R	3	ENGL 1010	
SOHU 2010	Socio-Humanistic Studies	R	3	NONE	
SOHU 2040	Ethics, Global, and Contemporary Issues	R	3	SOHU 2010	
	Socio-Humanistic Studies or Language Elective	E	3	Vary according to selected course	

BASIC SCIENCES (14 CRDS)

SCIE 1210	Principles of Chemistry	R	4	MATH 1340 or Equivalent	SCIE 1211
SCIE 1211	Principles of Chemistry Laboratory	R	0	MATH 1340 or Equivalent	SCIE 1210
SCIE 1430	Physics I (Mechanics)	R	4	MATH 1350	SCIE 1431
SCIE 1431	Physics I Laboratory	R	1	MATH 1350	SCIE 1430
SCIE 1440	Physics II (Heat and Electricity)	R	4	MATH 1360, SCIE 1430, SCIE 1431	SCIE 1441
SCIE 1441	Physics II Laboratory	R	1	MATH 1360, SCIE 1430, SCIE 1431	SCIE 1440

GENERAL ENGINEERING (28 CRDS)

ENGI 1110	Engineering Graphics	R	3	NONE	
ENGI 2110	Engineering Mechanics -Statics	R	3	MATH 1360, SCIE 1430	MATH 1370
ENGI 2120	Mechanics of Materials I	R	3	ENGI 2110	
ENGI 2260	Engineering Economics	R	3	MATH 1350	
ENGI 2310	Computer Programming and Algorithms	R	3	MATH 1350	
ENGI 2320	Principles of Electrical Engineering	R	3	SCIE 1440	
ENGI 2410	Engineering Mechanics - Dynamics	R	3	ENGI 2110	
ENGI 3510	Engineering Materials	R	3	SCIE 1210, SCIE 1440	
ENGI 3520	Thermal Systems Engineering	R	4	ENGI 2410	

MINIMUM GRADUATION REQUIREMENTS BY COMPONENT

COMPONENT	CRDS
Mathematics	18
Basic Sciences	14
Socio Humanistic & Languages	21
General Engineering	28
Industrial Engineering	62
Free Elective	3
Minimum Program Total Credits	146

BACHELOR OF SCIENCE IN INDUSTRIAL ENGINEERING CURRICULUM (146 CREDITS)

Course No.	Course Title	Course Type	Crd.	Pre-Requisites	Co-requisites
INDUSTRIAL ENGINEERING (62 CRDS)					
IE 1000	Introduction to Industrial Engineering	R	3	MATH 1330	
IE 1611	Computer Tools for IE's Lab I	R	1	ENGI 1110	
IE 2110	Financial and Cost Accounting	R	3	SOHU 2040, IE 1611	
IE 2210	Probability for Engineers	R	3	MATH 1350	IE 1611
IE 2220	Statistics for Engineers	R	3	IE 1611, IE 2210	
IE 2310	Work Design and Human Factors	R	3	ENGI 2110, IE 2210	
IE 2311	Work Design and Human Factors Lab.	R	1		IE 2310
IE 2611	Computer Tools for IE's Lab II	R	1	IE 1611	
IE 3222	Statistical Quality Control	R	3	IE 2220	
IE 3360	Job Design and Work Measurement	R	3	ENGI 2260, IE 2310	IE 3222
IE 3361	Job Design and Work Measurement Lab.	R	1	IE 2311	IE 3360
IE 3410	Materials Management and Inventory Control	R	3	IE 2110, IE 2220	
IE 3422	Operations Research Models I	R	3	MATH 2360, IE 2210	
IE 3500	Service Engineering and Management	R	3	IE 2611, IE 3222	
IE 3510	Production Planning and Control	R	3	IE 3360, IE 3410	
IE 3522	Operations Research Models II	R	3	IE 2220, IE 3422	
IE 3530	Industrial Organizational Behavior	R	3	IE 2310, IE 2311	
IE 3710	Industrial Manufacturing Processes	R	3	ENGI 3510	
IE 4212	Lean Six Sigma	R	3	IE 2611, IE 3222	
IE 4560	Project Management Techniques	R	3	ENGI 2260, IE 2210	
IE 4910	Facilities Planning and Design	R	3	IE 3361, IE 3422, IE 3510	
IE 4915	Facilities Planning and Design Project	R	1	IE 4910	
IE 4990	Capstone Design Course	R	3	IE 4212, IE 4910 & Deptmt. Head Approval	IE 4915
IE 4995	Capstone Design Course Extension	R	3	IE 4990	

Free Elective Component (3 CRDS)

	Free Elective	E	3		
--	---------------	---	---	--	--

IE Elective Courses

IE 4960	Industrial Engineering Practice	E	3	Deptmt. Head Approval	
IE 5220	Design of Experiments	E	3	IE 2220	
IE 5224	Quality Management Systems	E	3	IE 3500	
IE 5228	Lean Servicing	E	3	IE 3500	
IE 5990	Special Topics	E	3	Deptmt. Head Approval	

Revisión Curricular 2012/BSIE 146 REV 10-2012