Engineering BSE

Note: This program is not accepting applications for the 2024-2025 academic year.

The following information is for students who matriculated into this program in the 2022-2023 academic year.

Overview

The cross-disciplinary 128-credit **Bachelor of Science in Engineering**, offered by the Department of Engineering, Technology and Management, combines learning from several areas to create unique skill sets that are highly marketable. The curriculum not only takes courses from several departments and offers concentrations or study plans in engineering but also provides a basis for further study in business, law, medicine or further study in an engineering graduate program. The optional interdisciplinary concentrations and study plans include:

- Computer Hardware and Software Engineering (study plan)
- Electromechanical Engineering (concentration)
- Energy and Power Engineering (concentration)
- Engineering Fundamentals (study plan)

To give students the opportunity to understand these specialties, the College provides a strong foundation in the basic sciences and mathematics in a common first year. The Department of Engineering, Technology, and Management then aims to bring together the in-demand cross-functional skill sets desired in many industries, including the analysis, design and development of systems for diverse applications. The curriculum emphasizes a rigorous treatment of the mathematical and scientific approach to the solution of engineering problems. The program has design across the curriculum and is capped with an integrated design experience in the form of a senior project.

The Bachelor of Science in Engineering program shall produce graduates who:

1. will be employed in industries, academia and state or federal government agencies;
2. will advance their professional standing through graduate and/or professional degrees or lifelong learning; and
3. will contribute to their profession and to society.

Campus Location: Main

Program Code: EN-ENGR-BSEN

Learn more about the Bachelor of Science in Engineering.

Students who matriculated prior to fall 2024 should refer to the Archives *to view the requirements for their Bulletin year.*

Summary of Requirements

University Requirements

All new students are required to complete the university's General Education (GenEd) curriculum.

All Temple students must take a minimum of two writing-intensive courses for a total of at least six credits. The writing-intensive course credits are counted as part of the major; they are not General Education (GenEd) or elective credits. The writing-intensive courses must be completed at Temple University and students may not transfer in credits to satisfy this requirement. The specific writing-intensive courses required for this major are:

Code	Title	Credit Hours
ENGR 2196	Technical Communication	3
or ENGR 2996	Honors Technical Communication	
ENGR 4296	Capstone Senior Design Project	3
or ENGR 4996	Honors Capstone Senior Design Project	

Department and Major Requirements

Code	Title	Credit Hours
Required Math & Basic Science Courses		
MATH 1041	Calculus I	4
or MATH 1941	Honors Calculus I	
MATH 1042	Calculus II	4

or MATH 1942	Honors Calculus II	
MATH 2041	Differential Equations I	3
or MATH 2941	Honors Differential Equations I	
MATH 2043	Calculus III	4
or MATH 2943	Honors Calculus III	
Select one of the following:		3
ENGR 2011	Engineering Analysis and Applications	
MEE 3011	Analysis and Computation of Linear Systems in Mechanical Engineering	
Select one of the following:		3
CEE 3048	Probability, Statistics & Stochastic Methods	
ISE 2101	Applied Statistical Methods for Industrial and System Engineers	
PHYS 1061	Elementary Classical Physics I	4
or PHYS 1961	Honors Elementary Classical Physics I	
PHYS 1062	Elementary Classical Physics II	4
or PHYS 1962	Honors Elementary Classical Physics II	
CHEM 1035	Chemistry for Engineers	3
CHEM 1033	General Chemistry Laboratory I	1
or CHEM 1953	Honors Chemical Science Laboratory I	
Required General Education Courses		
Select one of the following:		4
ENG 0802	Analytical Reading and Writing	
ENG 0812	Analytical Reading and Writing: ESL	
ENG 0902	Honors Analytical Reading and Writing	
IH 0851	Intellectual Heritage I: The Good Life	3
or IH 0951	Honors Intellectual Heritage I: The Good Life	
IH 0852	Intellectual Heritage II: The Common Good	3
or IH 0952	Honors Intellectual Heritage II: The Common Good	
GenEd 08xx or 09xx (U.S. Society)		3
GenEd 08xx or 09xx (Global/World Society)		3
GenEd 08xx or 09xx (Human Behavior)		3
GenEd 08xx or 09xx (The Arts)		3
GenEd 08xx or 09xx (Race and Diversity)		3
Required Engineering Courses		
ENGR 1101	Introduction to Engineering and Engineering Technology	3
or ENGR 1901	Honors Introduction to Engineering	
ENGR 1102	Introduction to Engineering Problem Solving	3
ENGR 1117	Engineering Graphics	2
or MEE 1117	Fundamentals of Mechanical Engineering Design	
ENGR 2196	Technical Communication (WI)	3
or ENGR 2996	Honors Technical Communication	
ENGR 2331	Engineering Statics	3
or ENGR 2931	Honors Engineering Statics	
ENGR 2332	Engineering Dynamics	3
ENGR 2333	Mechanics of Solids	3
or ENGR 2933	Honors Mechanics of Solids	
ENGR 3001	Engineering Economics	3
ENGR 3201	Material Science for Engineers	3
ENGR 3553	Mechanics of Fluids	3
or ENGR 3953	Honors Mechanics of Fluids	
ENGR 3571	Classical and Statistical Thermodynamics	3
ENGR 4169	Engineering Seminar	1
ENGR 4172	Senior Design Project I for Engineering	2

ENGR 4296	Capstone Senior Design Project (WI) [1]	3
or ENGR 4996	Honors Capstone Senior Design Project	
ECE 2332	Principles of Electric Circuits	4
ECE 2333	Principles of Electric Circuits Lab	1
MEE 2305	Instrumentation and Data Acquisition Lab	1
MEE 3305	Materials Laboratory	1
MEE 3506	Fluid Mechanics Laboratory	1
CIS 1057	Computer Programming in C	4
or ECE 1111	Engineering Computation I	
Technical Elective #1		3
Technical Elective #2		3
Technical Elective #3		3
Technical Elective #4		3
Required Business Elective Courses		
Select two of the following:		6
ACCT 2101	Financial Accounting	
or ACCT 2901	Honors Financial Accounting	
ACCT 2102	Managerial Accounting	
or ACCT 2902	Honors Managerial Accounting	
ECON 1101	Macroeconomic Principles	
or ECON 1901	Honors Macroeconomic Principles	
ECON 1102	Microeconomic Principles	
or ECON 1902	Honors Microeconomic Principles	
HRM 1101	Leadership and Organizational Management	
or HRM 1901	Honors Leadership and Organizational Management	
HRM 2501	Introduction to Human Resource Management	
MKTG 2101	Marketing Management	
or MKTG 2901	Honors Marketing Management	
MSOM 3101	Operations Management	
RMI 2101	Introduction to Risk Management	
or RMI 2901	Honors Introduction to Risk Management	
Required Additional Electives		
Free Elective		2
Total Credit Hours		**128**

Suggested Academic Plan

Please note that this is a **suggested** academic plan. Depending on your study plan, your academic plan may look different.

Bachelor of Science in Engineering

Year 1		
Fall		**Credit Hours**
ENGR 1101	Introduction to Engineering and Engineering Technology	3
or ENGR 1901	or Honors Introduction to Engineering	
MATH 1041	Calculus I	4
or MATH 1941	or Honors Calculus I	
CHEM 1035	Chemistry for Engineers	3
CHEM 1033	General Chemistry Laboratory I	1
or CHEM 1953	or Honors Chemical Science Laboratory I	
ENG 0802	Analytical Reading and Writing [GW]	4
or ENG 0812	or Analytical Reading and Writing: ESL [GW]	
or ENG 0902	or Honors Analytical Reading and Writing [GW]	
	Credit Hours	**15**

Spring		
MATH 1042 or MATH 1942	Calculus II or Honors Calculus II	4
PHYS 1061 or PHYS 1961	Elementary Classical Physics I or Honors Elementary Classical Physics I	4
ENGR 1102	Introduction to Engineering Problem Solving	3
Select one of the following:		2
ENGR 1117	Engineering Graphics	
MEE 1117	Fundamentals of Mechanical Engineering Design	
Select one of the following:		4
CIS 1057	Computer Programming in C	
ECE 1111	Engineering Computation I	
	Credit Hours	**17**
Year 2		
Fall		
MATH 2043 or MATH 2943	Calculus III or Honors Calculus III	4
PHYS 1062 or PHYS 1962	Elementary Classical Physics II or Honors Elementary Classical Physics II	4
ENGR 2331 or ENGR 2931	Engineering Statics or Honors Engineering Statics	3
ECE 2332	Principles of Electric Circuits	4
IH 0851 or IH 0951	Intellectual Heritage I: The Good Life [GY] or Honors Intellectual Heritage I: The Good Life [GY]	3
	Credit Hours	**18**
Spring		
MATH 2041 or MATH 2941	Differential Equations I or Honors Differential Equations I	3
ECE 2333	Principles of Electric Circuits Lab	1
ENGR 2332	Engineering Dynamics	3
ENGR 2333 or ENGR 2933	Mechanics of Solids or Honors Mechanics of Solids	3
GenEd Breadth Course		3
IH 0852 or IH 0952	Intellectual Heritage II: The Common Good [GZ] or Honors Intellectual Heritage II: The Common Good [GZ]	3
	Credit Hours	**16**
Year 3		
Fall		
ENGR 3201	Material Science for Engineers	3
ENGR 3571	Classical and Statistical Thermodynamics	3
ENGR 2196 or ENGR 2996	Technical Communication [WI] or Honors Technical Communication [WI]	3
MEE 2305	Instrumentation and Data Acquisition Lab	1
Business Elective #1		3
Select one of the following:		3
ENGR 2011	Engineering Analysis and Applications	
MEE 3011	Analysis and Computation of Linear Systems in Mechanical Engineering	
	Credit Hours	**16**
Spring		
ENGR 3553 or ENGR 3953	Mechanics of Fluids or Honors Mechanics of Fluids	3
MEE 3506	Fluid Mechanics Laboratory	1
Technical Elective #1		3
MEE 3305	Materials Laboratory	1

GenEd Breadth Course		3
ENGR 4169	Engineering Seminar	1
Select one of the following:		3
CEE 3048	Probability, Statistics & Stochastic Methods	
ISE 2101	Applied Statistical Methods for Industrial and System Engineers	
	Credit Hours	**15**
Year 4		
Fall		
ENGR 4172	Senior Design Project I for Engineering	2
ENGR 3001	Engineering Economics	3
Technical Elective #2		3
Technical Elective #3		3
GenEd Breadth Course		3
GenEd Breadth Course		3
	Credit Hours	**17**
Spring		
ENGR 4296 or ENGR 4996	Capstone Senior Design Project [WI] or Honors Capstone Senior Design Project [WI]	3
Business Elective #2		3
Technical Elective #4		3
GenEd Breadth Course		3
Free Elective		2
	Credit Hours	**14**
	Total Credit Hours	**128**

Approved Technical Electives

Code	Title	Credit Hours
ECE 2612	Digital Circuit Design	3
ECE 2613	Digital Circuit Design Laboratory	1
ENGR 2181	Co-Op Work Experience I	3
Any Civil Engineering Course 3000 or above [1]		
Any Electrical Engineering Course 3000 or above [1]		
Any Engineering Course 3000 or above [1]		
Any Mechanical Engineering Course 3000 or above [1]		
Any Computer & Information Sciences Course 1068 or above [1]		

[1] Students should consult with the Director of the BSE Program when selecting courses from these subject areas.