TRINITY COLLEGE DEGREE REQUIREMENTS FOR B.S. IN ENGINEERING - 2019/2020

Updated April 2019

CORE REQUIREMENTS

Basic Math and Science (8 courses, 9.5-9.75 credits)

Sem	Course	
_____	MATH 131	Calculus I (1.25 credits)
_____	MATH 132	Calculus II (1.25 credits)
_____	MATH 231	Calculus III (1.25 credits)
_____	MATH 234	Diff. Equations
_____	PHYS 141L	Mechanics
_____	PHYS 231L	Elec., Mag., & Waves
_____	CHEM 111L	Intro. Chemistry I

and one elective, examples below:

Sem	Course	
_____	CHEM 112L	Intro. Chemistry II
_____	PHYS 232L	Optics & Mod. Phys.
_____	PHYS 300	Mathematcl Methods
_____	MATH 228	Linear Algebra
_____	MATH 305	Probability
_____	other*	

*(science or mathematics course appoved in advance by department chair)

Engineering (5 courses, 4.75 credits)

Sem	Course	
_____	ENGR 200	Meas., Instr., & Analysis
_____	ENGR 212L	Linear Circuit Theory
_____	ENGR 225	Mechanics I
_____	ENGR 232	Engineering Materials
_____	ENGR 312	Automatic Control Systems

Additional Degree Requirements

1. Demonstration of computer programming proficiency by course or exam.•
2. Completion of at least eight course credits in the arts, humanities, or social sciences. To ensure depth of study, at least two courses must be taken in the same subject area. ENGR 341 and ENGR 342 count as art.
3. No more than one engineering course with a grade lower than C-.

Senior Capstone Design Project (2 courses, 2 credits)

Sem	Course		Sem	Course	
_____	ENGR 483	Capstone Design I	_____	ENGR 484	Capstone Design II

CONCENTRATION ELECTIVES

Electrical (6 courses, 7.25-7.5 credits)

Sem	Course	
_____	ENGR 221L	Digital Circuits & Systems
_____	ENGR 301L•	Signal Processing & Applications
_____	ENGR 303L	Analog & Digital Communication
_____	ENGR 305L	Microelectronic Circuits
_____	ENGR 323L•	Microproc. Systems

Plus One Additional Engineering elective:

_____ _____

Program totals: ***21 courses, 23.5-24 credits***

Mechanical (7 courses, 7.75-8.25 credits)

Sem	Course	
_____	ENGR 226	Mechanics II
_____	ENGR 325L	Mechanics of Materials
_____	ENGR 337	Thermodynamics
_____	ENGR 362L	Fluid Mechanics
_____	ENGR 372L	Heat Transfer

At least one from:

_____	ENGR 353	Biomechanics
_____	ENGR 431L	Experimental Design & Methods

Plus One Additional Engineering elective:

_____ _____

Program totals: ***22 courses, 24-24.75 credits***

Computer (7 courses, 8.25-8.75 credits)

Sem	Course	
_____	CPSC 115L•	Introduction to Computing
_____	CPSC 215L•	Data Structures & Algorithms
_____	ENGR 221L	Digital Circuits & Systems
_____	ENGR 305L	Microelectronic Circuits
_____	ENGR 323L•	Microprocessor Systems

One additional ENGR elective approved in advance by dept. chair:

_____ _____

One additional CS elective approved in advance by dept. chair:

_____ _____

Program totals: ***22 courses, 24.5-25.25 credits***

Biomedical (8 courses, 8.25-9.5 credits)

Sem	Course				
_____	BIOL 140	Biological Systems	**OR**		
	BIOL 319L	Animal Physiology**	**OR**		
	BIOL 182L	Evolution of Life	**AND**	BIOL 183L	Cellular Basis of Life*
_____	ENGR 353	Biomechanics			
_____	ENGR 301L•	Signal Processing & Applications	**OR**		
	ENGR 323L•	Microprocessor Systems			
_____	ENGR 311	Electrophysiology	**OR**		
	ENGR 316	Neural Engineering			
_____	BIOL 319L	Animal Physiology**	**OR**		
	ENGR 357•	Physiological Modeling			

Three electives from the following courses: (at least 2 must be 300 level or above)

Sem	Course	
_____	ENGR 221L	Digital Circuits & Systems
_____	ENGR 226	Mechanics II
_____	ENGR 301L•	Signal Processing & Applications
_____	ENGR 303L	Analog & Digital Communication
_____	ENGR 305L	Microelectronic Circuits
_____	ENGR 311	Electrophysiology
_____	ENGR 316	Neural Engineering
_____	ENGR 323L•	Microprocessor Systems
_____	ENGR 325L	Mechanics of Materials
_____	ENGR 346L	Computational Neuroscience
_____	ENGR 357•	Physiological Modeling
_____	ENGR 362L	Fluid Mechanics
_____	ENGR 372L	Heat Transfer

(additional courses approved in advance by dept. chair)

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* If BIOL 182L and BIOL 183L is substituted for BIOL 140, BIOL 183L will satisfy the Basic Math and Science elective for BME. Courses can only count toward one requirement for the BME concentration.

Program totals: ***23 courses, 24.5-26 credits***

Without Concentration (6 to 7 courses, 7 credits)

At least 7 course credits chosen from the following:

Sem	Course		
_____	ENGR 110•	Engr. Computation & Analysis	**OR**
	ENGR 120	Introduction to Engineering Design	
_____	ENGR 221L	Digital Circuits & Systems	
_____	ENGR 226	Mechanics II	
_____	ENGR 301L•	Signal Processing & Applications	
_____	ENGR 303L	Analog & Digital Communication	
_____	ENGR 305L	Microelectronic Circuits	
_____	ENGR 311	Electrophysiology	
_____	ENGR 316	Neural Engineering	
_____	ENGR 323L•	Microprocessor Systems	
_____	ENGR 325L	Mechanics of Materials	
_____	ENGR 337	Thermodynamics	
_____	ENGR 346L	Computational Neuroscience	
_____	ENGR 353	Biomechanics	
_____	ENGR 362L	Fluid Mechanics	
_____	ENGR 372L	Heat Transfer	
_____	ENGR 431L	Experimental Design & Methods	

(additional courses approved in advance by dept. chair)

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Program totals: ***21-22 courses, 23.25-24 credits***

NOTE: Courses with laboratories (denoted by suffix 'L') count as 1.25 course credits; courses without labs count as 1.0 course credit, except where noted.
Program totals do not include course/credit counts from "Additional Degree Requirements".

• - Satisfies computer programming proficiency requirement.