Computer Engineering

BS in Computer Engineering (Fall 2023 & Later)

Total Credits 124

Minimum 120 credits required for Bachelor's degree

Foundational Core (30-32 Credits)		Grade	Credits
FYWS 125 [1]	First Year Seminar		3
CTL 125	Critical Thinking		3
MA ____ [2]	Foundational core Math course		
Natural and Physical Science [3,4]			
Literature			3
History	HI-100 or HI-102		3
Arts/Design/Comm. [5]			3
Philosophy [6]			3
Theology/Relig			3
Social/Behavioral Science [7]			3

Human Journey Seminars: Great Books in CIT (6 Credits)

CIT 201	CIT Seminar I		3
CIT 202	CIT Seminar II		3

Liberal Arts Explorations (9 Credits Total)

Humanistic Inquiry			3
Social and Global Awareness [8]			
Scientific Literacy [9]			

[1] Requires Grade C or higher
[2] Fulfilled by MA 151
[3] Fulfilled by PY 151
[4] Science/Natural Science courses includes approved Math and Computer Science courses. Students are required to take at least one course in Biology, Chemistry, or Physics in the Foundational or Liberal Arts Exploration Core. CS and MA courses may be used as a Science/Natural Science in either the Foundational Core or as a requirement in the LAE Core but not in both categories.
[5] AR 114 is recommended
[6] PH 127/131/151
[7] EC 202 is recommended
[8] Fulfilled by CS 319
[9] Fulfilled by PY 152

Approved Study Abroad courses may be used to satisfy requirements for the foundational core or a Liberal Arts Exploration

A maximum of 8 Applied Music credits may be applied towards graduation

Engineering Courses (48 credits)		Grade	Credits	Prerequisites
CSE 125	CSE Explorations		1	None
ENGR 125	Engineering Explorations		1	None
ENGR 200	Computational Methods in Engr		4	CS 112
ENGR 211	Circuits and Systems with Lab		4	MA 152 (co-req)
ENGR 212	Digital Design with Lab		4	CS 113
ENGR 311	Comp Arch and Design with Lab		4	ENGR 212
ENGR 313	Signal Processing with Lab		4	ENGR 211, MA 254 (co)
ENGR 324	Embedded Systems with Lab		4	CS 112, ENGR 200
	Business or computing/engineering elective		3	
	Business or computing/engineering elective		3	
	Business or computing/engineering elective		3	
	Business or computing/engineering elective		3	
CPE 413	Internship in Engineering		3	BU 296, ENGR 200, 211, 212
CPE 417	Engineering Design Project I		2	ENGR 324
CPE 418	Engineering Design Project II		3	CPE 417

Potential Business Electives towards Business Minor		Grade		
MGT 101	Organization Management		3	None
EC 202	Principles of Microeconomics		3	MA 140
AC 221	Financial Accounting and Reporting		3	None
MK 201	Principles of Marketing		3	None
FN 215	Financial Management		3	AC 221

Potential Engineering Electives		Grade		
ENGR 314	Directed Research in Engr		3	ENGR 200, 211, 212
ENGR 315	Analog Circuits with Lab		4	ENGR 211
ENGR 325	FPGA Design with Lab		4	ENGR 212
ENGR 339	Power Systems with Lab		4	ENGR 211
ENGR 349	Electromagnet Theory with Lab		4	MA 152
ENGR 350	Sensors & Robotics with Lab		4	ENGR 200, 211, 212
ENGR 351	PCB Design with Lab		4	ENGR 211
ENGR 353	VLSI Design with Lab		4	ENGR 211
ENGR 411	Adv Image Proc with Lab		4	ENGR 313
ENGR 419	Cooperative Studies in Engineering		6	ENGR 200, 211, 212

Potential Computing Electives		Grade		
CS 332	Cloud Computing		3	CS 112, 339
CS 341	Analysis of Algorithms		3	CS 241/272/ENGR 200
CY 367	Network Security		3	CS 339

Computer Science Courses (12 credits)		Grade		
CS 111	Introduction to Structured Programming		3	None
CS 112	Data Structures		3	CS 111
CS 113	Discrete Structures		3	None
CS 339	Networking and Data Communications		3	CS 112

Required Supporting Courses (34 credits)		Grade		
BU 296	Career Development and Readiness		0	None
MA 151	Calculus I		4	MA 140
MA 152	Calculus II		4	MA 151
MA 253	Calculus III		4	MA 152
MA 254	Differential Equations		3	MA 152
MA 261	Linear Algebra		4	MA 152
CSE 300	Stat and Prob for CS and ENGR **		3	MA 151, CS 112
CS 319	Computer Ethics **		3	PH 127/131/151
PY151/153	Principles of Physics I and Lab		4	MA 152
PY152/154	Principles of Physics II and Lab		4	PY 151
MUST HAVE GRADE OF "C" OR BETTER				

Checksheet Key

T	Course transferred and Requirement satisfied
W	Requirement waived
TW	Course transferred and Requirement waived

** Counts in LAE

WELCH COLLEGE OF BUSINESS & TECHNOLOGY

SCHOOL OF COMPUTER SCIENCE AND ENGINEERING

BS in Computer Engineering (Fall 2023 & Later)

YEAR 1	SEMESTER I	YEAR 1	SEMESTER 2
FYWS 125	First Year Seminar	CTL 125	Critical Thinking
MA 151	Calculus I	MA 152	Calculus II
CS 111	Intro to Structured Programming	CS 112	Data Structures
CSE 125	CSE Explorations	CS 113	Discrete Structures
HI 100 or 102	Foundational Core 1/6	ENGR 125	Engineering Explorations

YEAR 2	SEMESTER 3	YEAR 2	SEMESTER 4
CIT 201	CIT Seminar I	CIT 202	CIT Seminar II
ENGR 212	Digital Design with Lab	ENGR 211	Circuits and Systems with Lab
MA 253	Calculus III	MA 254	Differential Equations
PY 151/153	Principles of Physics I / Lab	PY 152/154	Principles of Physics II / Lab
		ENGR 200	Computational Methods in ENGR

YEAR 3	SEMESTER 5	YEAR 3	SEMESTER 6
ENGR 311	Computer Architecture & Design with Lab	MA 261	Linear Algebra
CS 339	Networking and Data Communication	CSE 300	Stat and Prob for CS and ENGR
	Business or computing/engineering elective 1/4	ENGR 313	Signal Processing with Lab
	Business or computing/engineering elective 2/4		Business or computing/engineering elective 3/4
	Foundational Core 2/6	ENGR 324	Embedded Systems with Lab
		BU 296	Career Development and Readiness

YEAR 4	SEMESTER 7	YEAR 4	SEMESTER 8
CPE 417	Engineering Design Project I	CPE 418	Engineering Design Project II
CPE 413	Internship in Engineering		Business or computing/engineering elective 4/4
CS 319	Computer Ethics (LAE awareness)		Foundational Core 4/6