

Computer Engineering

BS in Computer Engineering (Fall 2022 & 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, HI-102 or HI-110		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
CSE 125	CSE Explorations		1
ENGR 125	Engineering Explorations		1
ENGR 200	Computational Methods in Engr		4
ENGR 211	Circuits and Systems with Lab		4
ENGR 212	Digital Design with Lab		4
ENGR 311	Comp Arch and Design with Lab		4
ENGR 313	Signal Processing with Lab		4
ENGR 324	Embedded Systems with Lab		4
	Business or computing/engineering elective		3
	Business or computing/engineering elective		3
	Business or computing/engineering elective		3
	Business or computing/engineering elective		3
ENGR 413	Internship in Engineering		3
ENGR 417	Engineering Design Project I		2
ENGR 418	Engineering Design Project II		3

Prerequisites

None
CSE 125
CS 112
MA 152 (co-req)
CS 113
ENGR 212
ENGR 211, MA 254 (co)
CS 112, ENGR 200
ENGR 200, 211, 212
ENGR 324
ENGR 417

Potential Business Electives towards Business Minor		Grade	Credits
MGT 101	Organization Management		3
EC 202	Principles of Microeconomics		3
AC 221	Financial Accounting and Reporting		3
MK 201	Principles of Marketing		3
FN 215	Financial Management		3

None
MA 140
None
None
AC 221

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

ENGR 200, 211, 212
ENGR 211
ENGR 212
ENGR 211
ENGR 313 (co)
ENGR 200, 211, 212
ENGR 211
ENGR 211
ENGR 313
ENGR 200, 211, 212

Potential Computing Electives		Grade	Credits
CS 332	Cloud Computing		3
CS 341	Analysis of Algorithms		3
CY 367	Network Security		3

CS 112, 339
CS 241/272/ENGR 200
CS 339

Computer Science Courses (12 credits)		Grade	Credits
CS 111	Introduction to Structured Programming		3
CS 112	Data Structures		3
CS 113	Discrete Structures		3
CS 339	Networking and Data Communications		3

None
CS 111
None
CS 112

Required Supporting Courses (34 credits)		Grade	Credits
MA 151	Calculus I		4
MA 152	Calculus II		4
MA 253	Calculus III		4
MA 254	Differential Equations		3
MA 261	Linear Algebra		4
CSE 300	Stat and Prob for CS and ENGR **		3
CS 319	Computer Ethics **		3
PY151/153	Principles of Physics I and Lab		4
PY152/154	Principles of Physics II and Lab		4
MUST HAVE GRADE OF "C" OR BETTER			

MA 140
MA 151
MA 152
MA 152
MA 152
MA 151, CS 112
PH 127/131/151
MA 152
PY 151

Checksheets 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

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YEAR 1	SEMESTER 1	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
	Foundational Core 2/6	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	ENGR 313	Signal Processing with Lab
	Business or computing/engineering elective		Business or computing/engineering elective
	Foundational Core 3/6	ENGR 324	Embedded Systems with Lab
YEAR 4	SEMESTER 7	YEAR 4	SEMESTER 8
ENGR 417	Engineering Design Project I	ENGR 418	Engineering Design Project II
ENGR 413	Internship in Engineering		Business or computing/engineering elective
CS 319	Computer Ethics (LAE awareness)		Foundational Core 5/6