Computer Engineering

BS in Computer Engineering (Fall 2020 & Later)

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 ____	Foundational Core Math course[3]		
Choose 1 course from each area *			
[2]Natural and Physical Science[4]			
Literature			3
History	HI-100 or HI-102		3
Arts/Design/Comm. [5]			3
Philosophy			3
Theology/Relig			3
Social/Behavioral Science [6]			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)

Student must complete one course in each area. (see list on Registrar's Website - checksheets)		
Humanistic Inquiry (3 credits)		3
Social and Global Awareness [7]		
Scientific Literacy (3 credits) [8]		

* See list of courses.

[1](Requires Grade C or higher)

[2]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.

[3] MA106/MA140/MA151 may count in this area

[4] PY151/153 may count in this area

[5] AR114 is recommended

[6] EC101 or EC202 is recommended

[7] CS319 may count in this area

[8] CS300 may count in this area

Note: MA 006 and ESL courses **will not** count towards the 120 credit graduation requirement.

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		Grade	Credits	Prerequisites	Total Credits
CSE 125	CSE Explorations		1	None	127
ENGR 125	Engineering Explorations		1	CSE 125	
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 313	
ENGR 325	FPGA Design with Lab		4	ENGR 212	
ENGR 413	Internship in Engineering		3	ENGR 200, 211, 212	
	CS elective or internship/co-op		3		
	Engineering elective		4		
ENGR 314	Directed Research in Engr		3	ENGR 200, 211, 212	
ENGR 417	Engineering Design Project I		2	ENGR 314, 324	
ENGR 418	Engineering Design Project II		3	ENGR 417	

Potential Engineering 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
ENGR 350	Sensors & Robotics with Lab		4	ENGR 200, 211, 212
ENGR 411	Adv Image Proc with Lab		4	ENGR 313
ENGR 419	Cooperative Studies in Engineering		6	ENGR 200, 211, 212

Computer Science Courses		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		Grade		
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 **		4	MA 151, CS 112
CS 319	Computer Ethics **		3	PH 221/231/251
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

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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
	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
ENGR 325	FPGA Design with Lab	ENGR 313	Signal Processing with Lab
	Internship or CS Elective	ENGR 314	Directed Research in ENGR
	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		Engineering Elective
CS 319	Computer Ethics (LAE awareness)		Foundational Core 5/6