Computer Engineering Electives; Computer Science & Mathematics Electives & Group B Project Lab Options					
2023 - 2024					
Successful completion of all prerequisite courses required as well as a minimum 2.5 TTU GPA					
ECE	***Descriptive Title & Pre-Requisite(s)***	**CS/MATH**	***Title & Pre-Requisite(s)***	**Group B**	***Project Lab in Focus Area (Choose Two to complete along with ECE 3331 & ECE 4333)***
ECE 3306	Network Analysis (ECE 3302)	CS 3352	Intro to Systems Programming (CS 3350 or ECE 3362 & CS 2413)	ECE 3332	Microcrontroller Project Lab (ECE 3331, ECE 3311, & ECE 3362 or ECE 3363)
ECE 3309	Advanced Mathematics & Linear Algebra (ECE 3303, ECE 3308, MATH 2450, & MATH 3350)	CS 3361	Concepts of Programming Languages (CS 2413)	ECE 3333	RF Communications Project Lab (ECE 3331, ECE 3312, & ECE 3323)
ECE 3312	Advanced Electronics (ECE 3311, ECE 3303, & MATH 3350)	CS 3364	Design & Analysis of Algorithms (CS 1382, CS 2413, & MATH 2360)	ECE 3334	Digital Comms Project Lab (ECE 3331, ECE 3303, ECE 3308, ECE 3311, & ECE 3362 or ECE 3363)
ECE 3323	Principles of Communication Systems (ECE 3306 & ECE 3308)	CS 3366	Human Computer Interaction (CS 2413)	ECE 3335	Power Systems Project Lab (ECE 3331, ECE 3303, ECE 3311, & ECE 3341)
ECE 3341	Electromagnetic Fields I (ECE 3303, PHYS 2401, & MATH 3350)	CS 3368	Intro to Artificial Intelligence (CS 1382 & CS 2413)	ECE 3336	Software Development Project Lab (ECE 3331 & CS 3365)
ECE 3342	Electromagnetic Fields II (ECE 3341 & MATH 3351 or ECE 3309)	CS 3375	Computer Architecture (CS 3350 or ECE 3362)	ECE 3337	Electromagnetics Project Lab (ECE 3331, ECE 3306, & ECE 3342 (may be taken concurrently))
ECE 3353	Control System Analysis & Design (ECE 3303 & MATH 3350)	CS 3383	Theory of Automata (CS 1382)	ECE 3338	Computer Networks Project Lab (ECE 3331, ECE 3325 or ECE 4325)
ECE 4310	Introduction to VLSI Design (ECE 3311)	CS 4000	Individual Studies in Computer Science (advanced standing/departmental approval)		
ECE 4314	Solid State Devices (ECE 3311)	CS 4311	Senior Project Design (CS 3365, CS 3364, & COMS 2358 or ENGR 2311)(CS MAJORS ONLY)		***Link to 2023 - 2024 Catalog Course Descriptions***
ECE 4316	Power Electronics (ECE 3311 & ECE 3353)	CS 4328	Scientific Computing (CS 2413 & MATH 1452)		
ECE 4321	Applications of Analog Integrated Circuits (ECE 3312 & ECE 3353)	CS 4331	Special Topics in CS (advanced standing & CS 3375)		
ECE 4323	Modern Communication Circuits (ECE 3312 & ECE 3323)	CS 4352	Operating Systems (CS 3364 & CS 3375)		
ECE 4331	Individual Studies in EE (instructor consent)(may NOT be repeated for credit)	CS 4354	Concepts of Database Systems (CS 3364)		
ECE 4332	Topics in Electrical Engineering (may be repeated for credit)	CS 4365	Software Engr II (CS 3365) NO LONGER OFFERED AS OF 04/2021		
ECE 4340	Steady-State Analysis of Power Systems (ECE 3306)	CS 4366	Senior Capstone Project (CS 3365)		
ECE 4341	Microwave Engineering (ECE 3342)	CS 4379	Parallel and Concurrent Programming (CS 3364 & CS 3375)		
ECE 4342	Microwave Solid-State Circuits (ECE 3312)	CS 4380	Embedded Systems (CS 3350)		
ECE 4343	Introduction to Power Systems (ECE 3341)	CS 4391	Special Topics in AI (senior standing)		
ECE 4344	Antennas & Radiating Systems (ECE 3342)	CS 4392	Computer Networks (CS 2413)		
ECE 4349	Modern Radar Circuits & Systems (ECE 3341)	CS 4395	Intro to Computer Graphics (CS 3364)		
ECE 4354	Power Semiconductor Devices (ECE 4314)	CS 4397	Comp Game Design and Development (CS 3364)		
ECE 4360	Fiber Optic Systems (ECE 3341)	CS 4398	Theory & Practice of Logic Prog (CS 1382 & CS 2413)		
ECE 4362	Modern Optics for Engineering (ECE 3341)	***Please Note: CS 3350 - Computer Organization and Assembly Language Programming - is NOT an approved elective for CMPE***			
ECE 4363	Pattern Recognition (ECE 3308 or MATH 3342 or IE 2341; MATH 3350; ECE 3303, & ECE 3304 or ECE 3323)				
ECE 4364	Digital Signal Processing (ECE 3303)	*email CS advisor directly for permission to enroll in CS elective options @ daniel.martin@ttu.edu*			
ECE 4365	Parametric & Functional Device Testing (ECE 3331 & ECE 3308 or MATH 3342 or IE 2341)				
ECE 4366	Testing of Digital Systems (ECE 3331 & ECE 3308 or MATH 3342 or IE 2341)	MATH 4310	Introduction to Numerical Analysis I (MATH 3350 or MATH 3354)		
ECE 4367	Image Processing (ECE 3303; ECE 3304 or ECE 3323; ECE 3308 or MATH 3342 or IE 2341; MATH 3350)	MATH 4330	Mathematical Computing *(MATH 3430 or consent of undergraduate program director - email MATH advisor directly @ patty.schovanec@ttu.edu)*		
ECE 4369	Security of Industrial Control Systems (ECE 3353)				
ECE 4370	Machine Learning (MATH 2360, MATH 3350, & ECE 3308 or MATH 3342 or IE 2341)				
ECE 4372	Renewable Power Generation & Integration (ECE 3311)				
ECE 4373	Synchrophasor Applications for Utility Grid Integration (ECE 3306)				
ECE 4377	Innovation and Entrepreneurship (ECE 3331)				
ECE 4378	Solar Energy (ECE 3331)				
ECE 4379	Unmanned Aircraft Systems				
ECE 4381	VLSI Processing (ECE 3311, PHYS 2401, & MATH 3350)				
ECE 4382	Digital IC Analysis and Design (ECE 3311 & ECE 3362 or ECE 3363)				
ECE 4385	Introduction to Microsystems I (ECE 3303 & ECE 3311)				
ECE 4386	Introduction to Microsystems II (ECE 4385)				
ECE 4391	Electric Machines & Drives (ECE 3341 & ECE 3353)				