B.S. ELECTRICAL ENGINEERING
(Peace Engineering Minor)
Plan of Study

School of Engineering | UNIVERSITY OF St.Thomas

	Fall		Spring
Year 1	**FYEX** Foundation for College Success		
	ENGR 100 (FYE) Introduction to Engineering Design		
	ENGR 175 Introduction to Electrical & Computer Engineering		**PHYS 211** Classical Physics I
	MATH 113 Calculus I		**MATH 114** Calculus II
	CORE requirement	⬌	**CISC 130** Introduction to Programming & Problem Solving in the Sciences
	CORE requirement		**CORE** requirement
	January-term		**Summer**
	CORE requirement	⬌	

	Fall		Spring
Year 2	**ENGR 230** Digital Design (Lab)		**ENGR 240** Circuit Analysis (Lab)
	MATH 200 Multi-Variable Calculus	⬌	**MATH 210** Introduction to Differential Equations & Systems
	PHYS 212 Classical Physics II		**PHYS 225** Application of Modern Physics (Lab)
	JPST 250 Introduction to Justice and Peace Studies		**CORE** requirement
	January-term		**Summer**

	Fall		Spring
Year 3	**ENGR 340** Signals & Systems		**ENGR 410** Control Systems & Automation (Lab)
	ENGR 345 Electronics I (Lab)		**ENGR 346** Electronics II
	ENGR 331 Applications of Microprocessors (Lab)	⬌	**ENGR XXX** Engineering Elective 1
	CORE requirement	⬌	**JPST 3XX** Justice & Peace Focus Course
	January-term		**Summer**
			ENGR 480 Engineering Design Clinic I Abroad

	Fall		Spring
Year 4	**ENGR 481** Engineering Design Clinic II		
	PHYS 341 Electricity & Magnetism		**ENGR 342** Electromagnetic Fields & Waves
	ENGR XXX Engineering Elective 2		**ENGR XXX** Engineering Elective 3
	CORE requirement		**THEO 227** Contexts: Justice & Peace
	JPST 473 Vocational Seminar		**CORE** requirement
	January-term		**Summer**

* arrow indicates that the two courses can be interchanged

* this illustrates just one example of how all courses could be taken within a 4-year plan

Complete Course Listing:

Engineering Courses:
ENGR 100 – Introduction to Engineering Design (2 credits)
ENGR 175 – Introduction to Electrical & Computer Engineering (2 credits)
ENGR 230 – Digital Design (4 credits)
ENGR 240 – Circuit Analysis (4 credits)
ENGR 331 – Applications of Microprocessors (4 credits)
ENGR 340 – Signals & Systems (4 credits)
ENGR 342 – Electromagnetic Fields & Waves (4 credits)
ENGR 345 – Electronics I (4 credits)
ENGR 346 – Electronics II (4 credits)
ENGR 410 – Control Systems and Automation (4 credits)
ENGR 480 – Engineering Design Clinic I (4 credits)
ENGR 481 – Engineering Design Clinic II (4 credits)
ENGR Electives –THREE technical elective courses as approved by the program.

Two of the elective courses must be from ONE track.

Power Track:
ETLS 744 Power Systems and Smart Grids [required in track] (3 credits)
ETLS 746 Power Electronics (3 credits)
ETLS 747 Electrical Machines and Vehicles (3 credits)
ETLS 748 Renewable Energy and the Future (3 credits)
ETLS 750 Smart Distribution Systems (3 credits)

Signal Processing & Communications Track:
ETLS 620 Analog Communications (3 credits)
ETLS 621 Digital Communications (3 credits)
ETLS 675 Digital Signal Processing (3 credits)
ETLS 676 Real Time DSP (3 credits)
ETLS 810 Advanced Control Systems (3 credits)

Embedded Systems Track:
ENGR 330 Microprocessor Architectures (4 credits)
ENGR 431 Embedded Systems (4 credits)
ENGR 432 Current Trends in Computing Systems (4 credits)

Physics Track:
PHYS 215 Modern Physics (4 credits)
PHYS 347 Optics (4 credits)
OR four credits of physics electives as approved by the chair
<u>56 Engineering Credits</u>

Allied Requirements:
MATH 113 – Calculus I (4 credits)
MATH 114 – Calculus II (4 credits)
MATH 200 – Multi-Variable Calculus (4 credits)
MATH 210 – Introduction to Differential Equations and Systems (4 credits)
PHYS 211 – Classical Physics I (4 credits)
PHYS 212 – Classical Physics II (4 credits)
PHYS 225 – Applications of Modern Physics (4 credits)
PHYS 341 – Electricity & Magnetism (4 credits)
CISC 130 – Introduction to Programming and Problem Solving in the Sciences (4 credits)
<u>40 Allied Requirement Credits</u>

Peace Engineering Minor Requirements:
JPST 250* – Introduction to Justice & Peace Studies (4 credits)
JPST 3XX* – Justice & Peace Focus Course (4 credits)
THEO 227 – Contexts: Justice & Peace (4 credits)
ENGR 480/481 – Engineering Design Clinic I & II (Peace Engineering Designated Project, 8 credits) [see ENGR]
JPST 473 – Vocational Seminar (Concurrent with ENGR 480 or 481, 0 credits)
Essay on community experience of poverty, injustice, social conflict, or marginalization (0 credits)
*credits will count towards Integration in the Humanities (submitted for approval)
<u>12 Peace Engineering Minor Requirement Credits</u>

University of St. Thomas Core Curriculum:
FYEX Foundation for College Success (1 credit)
Language and Culture (0-8 credits)
Literature and Writing (4 credits)
Philosophy and Theology (8 credits) [4 additional credits counted in Peace Engineering Requirement]
Social Analysis (4 credits)
Fine Arts (4 credits)
Historical Studies (4 credits)
Some of these courses must satisfy the flagged requirements; check your degree evaluation
<u>33 Core Curriculum Credits</u>