



Program of Studies

Power Systems & Sustainable Energy MS

(New Requirements – 46 Units)

Name: **Student SCU #**

First Last

Email: **Advisor's Name:** M. Khanbaghi **Expected Graduation Date:**

PROGRAM TYPE (CHECK ONE): NEW UPDATED FINAL
B.S. Degree: Civil Computer Electrical Mechanical Other _____

1. Requirements:

<u>Foundational Courses</u>	<u>Units</u>	<u>Grade</u>
- ELEN 280/MECH 287 Alternative Energy Systems (2 units)	2	
- ELEN 281A Power System: Generation and Transmission (2 units)	2	
- ELEN 281B Power Systems: Distribution (2 units)	2	
- ELEN 285 Introduction to the Smart Grid (2 units)	2	
<u>Graduate Core Courses</u>		
- EMGT 380 Introduction to Systems Engineering Management (2 units)	2	
- CENG 208 Engineering Economics and Project Finance (3 units) OR EMGT 255 Accounting & Cost Control for Project Managers (2 units)	3/2	
- ENGR 272 Energy Public Policy (2 units)	2	
- ENGR 273 Sustainable Energy & Ethics (2 units) OR ENGR 344 Artificial Intelligence and Ethics (2 units)	2	
<u>Applied Math Courses</u>		
- AMTH 245 Linear Algebra I (2 units)	2	
- AMTH 246 Linear Algebra II (2 units)	2	
- 4 units in AMTH, to be selected in consultation with academic advisor	4	

2. Specialization Core: Select One Track

<u>Mechanical Engineering</u>	<u>Units</u>	<u>Grade</u>
- ELEN 231 Power System Stability & Control (4 units)	4	
- ELEN 287/ENGR 339 Energy Storage Systems (2 units)	2	
- MECH 228 Equilibrium Thermodynamics (2 units) OR MECH 230 Statistical Thermodynamics (2 units)	2	
- MECH 288 Energy Conversion I (2 units)	2	
<u>Electrical Engineering</u>		
- ELEN 231 Power System Stability & Control (4 units)	4	
- ELEN 287/ENGR 339 Energy Storage Systems (2 units)	2	
- ELEN 288 Energy Mgmt (2 units) OR ELEN 236 Linear Control Systems (2 units)	2	
- ELEN 353 DC to DC Power Conversion (2 units)	2	
<u>Computer Engineering</u>		
- COEN 242 Big Data (4 units) OR COEN 240 Machine Learning (4 units)	4	
- COEN 243 Internet of Things (4 units)	4	
- COEN 266 Artificial Intelligence (4 units)	4	
<u>Civil Engineering</u>		
- CENG 217 Sustainable Infrastructure for Developing Countries (4 units) OR CENG 288 Emerging Decision and Risk Analysis (4 units)	4	
- CENG 219 Designing for Sustainable Construction (4 units)	4	
- CENG 249 Civil Systems Engineering (4 units)	4	

3. **Elective Courses (to complete 46 unit requirement)** *Must be approved by advisor. These elective courses may include a thesis, up to 9 units. Please note: ELEN 379 – Nanotechnology does not count toward completion of this degree.*

<u>Course #</u>	<u>Course Title</u>	<u>Units</u>	<u>Grade</u>

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4. **Enrichment Experience: Complete BOTH sections a) and b).** Minimum 8 units.

a) **Must take at least 2 courses (minimum 4 units) from the 3 graduate core areas. NO WAIVERS OR SUBSTITUTIONS WILL BE ACCEPTED.**

<u>Graduate Core Area</u>	<u>Course #</u>	<u>Course Title</u>	<u>Units</u>	<u>Grade</u>
Emerging Topics in Engineering				
Engineering and Business/Entrepreneurship				
Engineering and Society				

b) **Remaining 4 units completed by one of the following. Please choose one and list courses below:**

- One or more technical electives*
- Cooperative Education courses (ENGR 288/289)*
- Additional classes from Graduate Core*
- Combining courses from (a), (b), (c)*

<u>Course #</u>	<u>Course Title</u>	<u>Units</u>	<u>Grade</u>

5. **Transfer Credit:**

(All transfer credit must be approved by your advisor. Maximum TC credit 9 quarter units or 6 semester units. BS/MS students can transfer up to 20 units from their undergraduate degree. Students who have an undergrad degree from SCU can transfer up to 12 units from their undergrad degree. The approved transfer units cannot be used toward your undergraduate degree.) Please attach an additional sheet if you have more than 3 classes to transfer. *Only those courses completed with a C grade or higher will be eligible for transfer credit. Extension, continuing education and online courses are not acceptable for transfer credit.*

<u>Institution</u>	<u>Course</u>	<u>SCU Equivalent</u>	<u>Units</u>	<u>Grade</u>	<u>Year</u>

GRADUATION REQUIREMENTS

<u>TOTALS</u>	
<u>Transfer Units</u> (1 semester unit = 1.5 quarter units)(9 quarter units maximum)	
<u>Total SCU Units</u>	
<u>Total Units</u> (46 quarter units minimum)	
<u>Current Cumulative GPA</u>	

I understand that it is my responsibility to:

Ensure the transcripts for transfer credits are sent to the Graduate Services Office.

- Obtain my advisor’s approval and signature of this program and of any subsequent changes needed.
- Complete the program as approved with a minimum of 46 units and a 3.0 cumulative GPA with no grade below C-.

Student Signature/Date: _____ / _____

Advisor Signature/Date _____ / _____