Program of Studies
Power Systems & Sustainable Energy MS
(With Graduate Engineering Core)

Santa Clara Engineering

Name: ………………………………………………………………………………………… **Student SCU #** …………………………………………
First   Last
Email: …………………………………………………………………………………… **Expected Graduation Date:** ……………………..……

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

1. Requirements:

Foundational Courses	Units	Grade
- ECEN 280/MECH 287 introduction to Alternative Energy Systems (2 units)	2	
- ECEN 281A Power Systems: Generation and Transmission (2 units) and ECEN 281B Power Systems: Distribution (2 units) **OR** ECEN 281E Power Systems (4 units)	4	
- ECEN 285 Introduction to the Smart Grid (2 units)	2	
Graduate Core Courses		
- EMGT 380 Introduction to Systems Engineering Management (2 units)	2	
- EMGT 255 Accounting & Cost Control for Project Managers (2 units)	2	
- ENGR 272 Energy Public Policy (2 units)	2	
- ENGR 344 Artificial Intelligence and Ethics (2 units)	2	
Applied Math Courses		
- AMTH 245 Linear Algebra I (2 units) and AMTH 246 Linear Algebra II (2 units) **OR** AMTH 247 Linear Algebra (4 units)	4	
- 4 units in AMTH, to be selected in consultation with academic advisor	4	

2. Specialization Core: Select One Track

Mechanical Engineering	Units	Grade
- ECEN 231 Power System Stability & Control (4 units)	4	
- ECEN 287/MECH 287 Energy Storage Systems (2 units)	2	
MECH 228 Energy Conversion and Conservation (2 units)	2	
- MECH 239 Solid State Power Generation and Energy Harvesting (4 units)	2	
Electrical Engineering		
- ECEN 231 Power System Stability & Control (4 units)	4	
- ECEN 287/MECH 287 Energy Storage Systems (2 units)	2	
- ECEN 288 Energy Management Systems (2 units) **OR** ECEN 236 Linear Control Systems	2	
- ECEN 353 DC to DC Power Conversion (2 units)	2	
Computer Engineering		
- CSEN 281 Pattern Recognition and Data Mining (4 units) **OR** CSEN 240 Machine Learning (4 units)	4	
- CSEN 243 Internet of Things (4 units)	4	
- CSEN 266 Artificial Intelligence (4 units)	4	
Civil Engineering		
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: ECEN 379 – Nanotechnology does not count toward completion of this degree.*

Course #	Course Title	Units	Grade	Course #	Course Title	Units	Grade

4. **Graduate Core Requirements:**

Must take at least 1 course from the 2 graduate core areas (minimum 4 units). NO WAIVERS OR SUBSTITUTIONS WILL BE ACCEPTED.

Graduate Core Area	Course #	Course Title	Units	Grade
Engineering and Society				
Professional Development				

5. **Transfer Credit:**

All transfer credit must be approved by your academic advisor. A maximum of 9 quarter units or 6 semester units may be transferred. Only courses completed with a grade of C- or higher are eligible for transfer credit. Extension, continuing education, and online courses are not accepted. BS/MS students may transfer up to 20 graduate-level units from their undergraduate coursework. All approved transfer credit must not have been applied toward the completion of a prior degree.

Institution	Course	SCU Equivalent	Units	Grade	Year

GRADUATION REQUIREMENTS	
TOTALS	
Transfer Units (1 semester unit = 1.5 quarter units) (9 quarter units maximum) (BS/MS 20 units maximum)	
Total SCU Units	
Total Units (46 quarter units minimum)	
Current Cumulative GPA	

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 Name (print): Dr. Maryam Khanbaghi

Advisor Signature/Date _____ /_____