

Introduction

- Two different IEEE Certificate programs
 - UPWARDS - IEEE UPWARDS International Semiconductor Leadership Certificate
 - UPWARDS specific
 - International experience
 - 10 hours lab experience and 2 essays
 - California DREAMS Cleanroom Gateway
 - Processing wafers in cleanroom + lectures
 - Multiple Credentials

IEEE UPWARDS International Semiconductor Leadership Certificate

- For all UPWARDS Universities for Summer Programs in 2026
 - UW will process all the paperwork with IEEE
 - Students and faculty will need to submit web forms
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- This year is a test to see how things go. We can decide next year if we want to make changes

IEEE UPWARDS International Semiconductor Leadership Certificate

- Requirements
 - Minimum of 10 hours of supervised, hands-on laboratory experience
 - cleanroom work, device fabrication, metrology, materials processing, electronics prototyping, or equivalent activities based on site capabilities.
 - Participation in at least one international engagement activity
 - hosting visiting students/researchers, collaborating with peers from partner institutions, virtual cross site teamwork, or travel to a partner university abroad

IEEE UPWARDS International Semiconductor Leadership Certificate

- Assessment
 - Reflective Essays (each less than 500 words)
 - Experience Reflection
A narrative describing the student's laboratory and program experiences, what they learned, and how the activities influenced their understanding of semiconductors and international collaboration.
 - Competency Reflection
A structured reflection connecting their experiences to the six UPWARDS competencies. Students should cite specific examples from program activities.
 - Instructor Sign-off

Submitted through web form

IEEE UPWARDS International Semiconductor Leadership Certificate

- More Information
 - UPWARDS IEEE Certificate Requirements
 - <https://docs.google.com/document/d/17cH9C15j3Cj0TjnlbxLisqCkGbWL2ulV320C8GtnNJI/edit?usp=sharing>
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California DREAMS Cleanroom Gateway

- Cleanroom specific program with topic and assessment requirements



Course Topics and Requirements

	Introduction to Lithography	Introduction to Deposition	Introduction to Etching	Introduction to Metrology	Fundamentals of Cleanroom Safety	Fundamentals of Cleanroom Protocols
Background (hours)	1	1	1	1	2	2
Cleanroom Work (hours)	2	2	2	2	8 (concurrent with Litho, Etch, Dep, and Metro)	8
Learning Outcomes	Perform Lithography Under Supervision	Perform Deposition Under Supervision	Perform Etching Under Supervision	Perform Metrology Under Supervision	Learn and then independently follow cleanroom safety practices.	Learn and then independently follow cleanroom protocols such as following work instructions and SOPs. Record and communicate observations during process.
Assessment Method	A qualified instructor observed the learner successfully completing the task.				Quiz on Safety protocols, >80% score and A qualified instructor observed the learner successfully completing the task.	