

UNIVERSITY OF CALIFORNIA
 Santa Barbara
 Department of Electrical and Computer Engineering

Application for the Ph.D. Screening Examination for Electrical and Computer Engineering

I request to take the Ph.D. Screening Examination during the Fall Quarter of 2019. I elect to take one major oral examination in my intended area of specialization and one minor area of examination, which I have indicated below by placing a cross [X] in the respective boxes. I agree to take the examinations on the designated dates and will not fail to attend once the exam schedule is finalized. If any emergency arises that may prevent me from participating, I will promptly notify the Graduate Student Office. I understand that failure to attend the exams without notification or due cause may prevent me from being permitted to continue in the Ph.D. program.

 Last Name, First Name

 Perm Number

 ECE Box Number

 E-mail Address

 Student Signature

 Date

(Graduate) Grade Point Average _____
 (3.3 minimum required)

Advisor _____
 (PRINT ADVISOR'S NAME)

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Areas of Examination: (Select one major which must be in the area of intended specialization and one minor.)

|                                                           | Major<br>Specialization<br>Area | Minor<br>Area |
|-----------------------------------------------------------|---------------------------------|---------------|
| Computer Engineering (PLEASE SEE BACK OF FORM).....       | _____                           | _____         |
| Control Systems.....                                      | _____                           | _____         |
| Signal Processing.....                                    | _____                           | _____         |
| Communications.....                                       | _____                           | _____         |
| Electronics and Photonics (PLEASE SEE BACK OF FORM) ..... | _____                           | _____         |

Intended Area of Specialization (please circle one):    CCSP      CE      EP

Are you taking the Screening Exam in lieu of Comps to earn your MS degree?    \_\_\_ Yes      \_\_\_ No

Is this your **first** \_\_\_ or **second** \_\_\_ attempt? If second, date of first attempt \_\_\_\_\_.

**Return to the ECE Graduate Student Office by noon Wednesday, August 21, 2019**  
**Trailer 697, Room 101**

Name: \_\_\_\_\_

### Ph.D. Screening Exam in Electronics and Photonics

Check here if you are taking the screening exam for the second time.

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Check the level on which you intend to take the E&P examination:

Combined Major/Minor in E&P

Check five of the seven examination topics listed below with the following constraint: You must select at least one examination from each of the three areas A, B and C. The remaining two examinations may be chosen freely from the rest of the list.

Major – Only in E&P                      STATE YOUR MINOR EXAM FIELD: \_\_\_\_\_

Check three of the seven examination topics listed below with the following constraints: At least two of the four exams must be from areas A, B, C, and/or D; the third examination may be chosen freely from the rest of the list.

Minor – Only in E&P                      STATE YOUR MAJOR EXAM FIELD: \_\_\_\_\_

Check any two of the seven examination topics listed below.

Areas and Topics:

Area A: Physics

- A1: Quantum Mechanics
- A2: Solid-State Physics

Area B: Electromagnetic Fields and Waves

- B1: General E&M Theory
- B2: Guided Waves, and Radiation

Area C: Devices

- C1: Electronic Devices
- C2: Photonic Devices

Area D: Circuits

- D1: High-Speed Analog Circuits
- D2: Radio Frequency Communication Circuits and Systems

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### Ph.D. Screening Exam in Computer Engineering

The CE exam will have nine areas for both major and minor students. The following is a list of these nine areas. To take only CE as a major and minor exam, choose five out of the eight areas. To take CE as a major exam, choose three of the eight areas below and take a minor outside of CE and Computer Science. To take CE as a minor exam only, choose 2 out of the eight areas below.

Major – Only in CE                      STATE YOUR MINOR EXAM FIELD: \_\_\_\_\_

Minor – Only in CE                      STATE YOUR MAJOR EXAM FIELD: \_\_\_\_\_

- 1. Digital Design Fundamentals
- 2. Computer Architecture
- 3. Data Structures
- 4. Compilers and Operating Systems
- 5. VLSI and CMOS Design
- 6. Design Methodologies and Automation
- 7. Hardware/Software Interface
- 8. Machine Learning