CON Elect Engr
Electrical Engineering

Under Review | Fall 2025

Proposal Information

Status
Active

Workflow Status
In Progress

Refresh ⟳ **Form Submission, Proposer**   collapse ▾

Submitted for Approval | Proposer

    ✔ Francesca Cavallo | 8/20/2024 3:08 PM

Department Chair Pre-Approval, Electrical & Computer Engineering

Approved | Department Chair

    ✔ Mark Gilmore | 8/21/2024 12:39 PM

Registrar Office Technical Check Approval, Registrar Technical Check

Approved | Registrar Technical Check

    ➖ Michael Raine
    ✔ Maggie Sumruld | 8/22/2024 9:22 AM

College/School Dean Approval, School of Engineering

Approved | College or School approver

    ✔ Shuang Luan | 8/22/2024 9:24 AM

Library Approval, Main Campus Library

Approved | Library Approval

    ✔ Sever Bordeianu | 8/22/2024 9:36 AM

SGPC Approval, Faculty Senate Graduate and Professional Committee

Approved | Chair

    ✔ Robben Brown | 10/10/2024 1:54 PM

FSCC Member notification, Faculty Senate Curriculum Committee

Notification Sent | Faculty Senate Curriculum Committee Member

    ✉ John Russell
    ✉ Gabriel Pacyniak
    ✉ Jonathan Wheeler
    ✉ Min Ro
    ✉ Randi Archuleta
    ✉ Stephanie Hands
    ✉ Laura Soito
    ✉ Robben Brown
    ✉ Megan Jacobs
    ✉ Justine Ponce
    ✉ Joe Anderson
    ✉ Jennifer Schneider
    ✉ Yiliang Zhu
    ✉ Nicole Capehart
    ✉ Kate Cartwright
    ✉ Julia So

✉ Antoinette Abeyta
✉ Joseph Poole Jr MSN, RN, CNE
✉ SueNoell Stone

Faculty Senate Curriculum Committee Approval, Faculty Senate Curriculum Committee
Approved | Faculty Senate Curriculum Committee Chair

✔ Janet Vassilev

FSCC voted to approve this form 11/15/2024.
11/15/2024 12:59 PM

Provost Approval, Main Campus Provost
Approved | Provost

✔ Pamela Cheek | 12/13/2024 3:37 PM

Faculty Senate, Faculty Senate
Waiting for Approval | Faculty Senate Approval

Nancy Middlebrook
Theresa Sherman

Registrar Office Final Approval/Processing, Registrar
Approval | Registrar final approval

Michael Raine
Maggie Sumruld

Notification, Proposer
Notification | Proposer

Francesca Cavallo

EMRT notification, EMRT users
Notification | EMRT user

Enrollment Mgt Reporting Team

Lobotrax notification, LoboTrax Team
Notification | LoboTrax Staff

Sherri DeLeve
Paula Freitag
Hannah Epstein
Allie Martinez
Glenda Johnson

Changes
- Concentration Requirements
- participants
- Proposed Effective Term and Year
- Concentration Justification

Proposal Information

Sponsoring faculty/staff member ❓
Francesca Cavallo

Sponsoring faculty/staff email
fcavallo@unm.edu

College	**Department**	**Campus**
School of Engineering	Electrical & Computer Engineering	Main Campus

Effective Term and Year

Proposed
Proposed Effective Term and Year
Fall 2025

Existing
Proposed Effective Term and Year
Fall 2024

Justification

Proposed
Concentration Justification

We propose adding ECE 567 to the pool of core courses in the optoelectronics research emphasis. The goal is to broaden the scope of the area in agreement with the research conducted at UNM. Note that this course has been offered as a special topic.

Existing
Concentration Justification

We propose to revise the required coursework and offered courses in the EE/Optoelectronics Ph.D. programs. The rationale behind the proposed changes are listed below.
1. Students have insufficient background to take some of the current core courses.
2. There is a need to optimize the teaching capacity in the EE/Optoelectronics area while allowing students to complete the required coursework in the PhD program in 4 semesters.

Associated Forms

Select any associated course forms that exist

Select any associated program forms that exist

Program Information

Degree Name
PhD Cmptr Elec Engr - Doctor of Philosophy in Engineering

Degree Type

Program Type

Doctor of Philosophy   Doctoral

Program Description
No Parent Selected

Degree Hours   **Minimum Major Hours**

66

Degree Requirements

- Complete all of the following
  - Earn at least 48 credits from the following types of courses:
    The minimum amount of coursework required for the Doctor of Philosophy degree is 24 credit hours beyond
    the master's degree or 48 credit hours beyond the bachelor's degree. This requirement is exclusive of
    dissertation or master's thesis. These are minimum requirements; ordinarily, more than the 48 credit hours are
    necessary. The program of each student is an individual matter planned by the committee on studies.
  - See Concentration below for specific requirements.

Grand Total Credits: 48

Concentration Information

Concentration Title
Electrical Engineering

Program Level
Graduate

Concentration Requirements
- Complete all of the following
  - Complete at least 3 courses of the following types:
    Applied Electromagnetics: ECE 534 or 569, 560, 561. Communications: ECE 500, 541, 542. Image Processing:
    ECE 533, 539, 541. Microelectronics: ECE 520, 523, 576. Optoelectronics: ECE 561, ~~570~~**571**, ~~572~~**575 and two
    among 564, 567, 577**. Power and Energy: ECE 582, 584, 588. Signal Processing: ECE 500, 539, 541. Systems
    and Controls: ECE 500, 541, 546.
  - **Emphases**
  - Complete 1 of the following
    - **Applied Electromagnetics**
      - Complete all of the following
        - Complete at least 1 of the following:
          - ECE534 - Plasma Physics I (3)
          - ECE569 - Antennas for Wireless Communications Systems (3)
        - Complete the following:
          - ECE560 - Introduction to Microwave Engineering (3)

- ECE561 - Engineering Electrodynamics   (3)

Communications
- Complete the following:

  - ECE500 - Theory of Linear Systems   (3)
  - ECE523 - Analog Electronics   (3)
  - ECE576 - Modern VLSI Devices   (3)

Image Processing
- Complete the following:

  - ECE533 - Digital Image Processing   (3)
  - ECE539 - Digital Signal Processing   (3)
  - ECE541 - Probability Theory and Stochastic Processes   (3)

Optoelectronics
- **Complete all of the following**
  - **Complete the following:**

    - **ECE561 - Engineering Electrodynamics   (3)**

  - **Complete the following:**

    - **ECE571 - Materials and Devices II   (3)**

  - **Complete the following:**

    - **ECE575 - Introduction to Electro-Optics and Opto-Electronics   (3)**

  - **Complete at least 2 of the following:**

    - **ECE577 - Fundamentals of Semiconductor LEDs and Lasers   (3)**
    - **ECE564 - Guided Wave Optics   (3)**
    - **ECE567 - Fundamentals of Solid-State Detectors   (3)**

Microelectronics
- Complete the following:

  - ECE520 - VLSI Design   (3)
  - ECE523 - Analog Electronics   (3)
  - ECE576 - Modern VLSI Devices   (3)

~~Optoelectronics~~
- ~~Complete all of the following~~
  - ~~Complete the following:~~

    - ~~ECE561 - Engineering Electrodynamics   (3)~~

  - ~~Complete the following:~~

    - ~~ECE471 - Materials and Devices II   (3)~~

  - ~~Complete the following:~~

    - ~~ECE475 - Introduction to Electro-Optics and Opto-Electronics   (3)~~

  - ~~Complete at least 2 of the following:~~

    - ~~ECE567 - Fundamentals of Solid-State Detectors   (3)~~
    - ~~ECE577 - Fundamentals of Semiconductor LEDs and Lasers   (3)~~
    - ~~ECE564 - Guided Wave Optics   (3)~~

Power and Energy
- Complete the following:

  - ECE583 - Power Electronics I   (3)
  - ECE584 - Photovoltaics   (3)
  - ECE588 - Smart Grid Technologies   (3)

Signal Processing

- Complete the following:
    - ECE500 - Theory of Linear Systems (3)
    - ECE539 - Digital Signal Processing (3)
    - ECE541 - Probability Theory and Stochastic Processes (3)

Systems and Controls
- Complete all of the following
    - Complete the following:
        - ECE500 - Theory of Linear Systems (3)
        - ECE541 - Probability Theory and Stochastic Processes (3)
    - Earn at least 3 credits from the following types of courses: Multivariable Control Theory course approved by advisor.

Grand Total Credits: 9 - 15

Concentration Description

Contact the department for more information about this concentration.