

EEE 231: ADVANCED ANALOG INTEGRATED CIRCUIT DESIGN

In Workflow

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Approval Path

1. 2026-04-13T14:44:17Z
Milica Markovic (milica): Approved for EEE Committee Chair
2. 2026-08-29T01:31:27Z
Milica Markovic (milica): Approved for EEE Chair
3. 2026-09-23T17:10:44Z
Tongren Zhu (tongren.zhu): Approved for ECS College Committee Chair
4. 2026-09-23T17:36:15Z
Behnam Arad (arad): Approved for ECS Dean

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Viewing: EEE 231 : Advanced Analog Integrated Circuit Design

Last edit: 2026-09-23T17:10:30Z

Changes proposed by: Amir Javan (223025881)

Contact(s):

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Catalog Title:

Advanced Analog Integrated Circuit Design

Class Schedule Title:

Advanced Analog IC Design

Academic Group: (College)

ECS - Engineering & Computer Science

Academic Organization: (Department)

Electrical and Electronic Engineering

Will this course be offered through the College of Continuing Education (CCE)?

No

Catalog Year Effective:

Spring 2027 (2026/2027 Catalog)

Subject Area: (prefix)

EEE - Electrical and Electronic Engineering

Catalog Number: (course number)

231

Course ID: (For administrative use only.)

127611

Units:

3

Is the ONLY purpose of this change to update the term typically offered or the enforcement of existing requisites at registration?

No

In what term(s) will this course typically be offered?

Fall term only

Does this course require a room for its final exam?

Yes, final exam requires a room

This course complies with the credit hour policy:

Yes

Justification for course proposal:

Revised course outlines, learning outcomes, and course title.

Course Description: (Not to exceed 90 words and language should conform to catalog copy.)

Covers advanced topics in analog integrated circuit design. Key subjects include fully differential amplifiers, common-mode feedback, and power supply rejection, as well as nonlinearity, mismatch, analog layout techniques, and bandgap reference and bias circuits. The course also introduces current-mode techniques, including high-speed current-mode logic (CML).

Are one or more field trips required with this course?

No

Fee Course?

No

Is this course designated as Service Learning?

No

Is this course designated as Curricular Community Engaged Learning?

No

Does this course require safety training?

No

Does this course require personal protective equipment (PPE)?

No

Does this course have prerequisites?

Yes

Prerequisite:

EEE 230 or consent of the instructor.

Prerequisites Enforced at Registration?

No

Does this course have corequisites?

No

Graded:

Letter

Approval required for enrollment?

No Approval Required

Course Component(s) and Classification(s):

Seminar

Seminar Classification

CS#05 - Seminar (K-factor=1 WTU per unit)

Seminar Units

3

Is this a paired course?

No

Is this course crosslisted?

No

Can this course be repeated for credit?

No

Can the course be taken for credit more than once during the same term?

No

Description of the Expected Learning Outcomes and Assessment Strategies:

List the Expected Learning Outcomes and their accompanying Assessment Strategies (e.g., portfolios, examinations, performances, pre-and post-tests, conferences with students, student papers). Click the plus sign to add a new row.

	Expected Learning Outcome	Assessment Strategies
1	Analyze and design fully differential amplifiers, including common-mode feedback (CMFB) circuits and power supply rejection (PSRR) considerations.	Assignments, exams, design project
2	Evaluate the effects of device nonlinearity and mismatch on analog circuit performance and apply appropriate mitigation techniques.	Assignments, exams
3	Apply analog layout techniques to improve device matching, minimize parasitics, and enhance circuit reliability.	Design project
4	Design and analyze bandgap reference and bias circuits for robust operation across process, voltage, and temperature variations.	Assignments, exams
5	Apply current-mode design techniques, including the analysis and design of high-speed current-mode logic (CML) circuits.	Assignments, exams
6	Use computer-aided design (CAD) tools to simulate, verify, and analyze analog integrated circuits.	Design project

Attach a list of the required/recommended course readings and activities:

EEE 231 Course Syllabus.pdf

Is this course required in a degree program (major, minor, graduate degree, certificate?)

Yes

Has a corresponding Program Change been submitted to Workflow?

No

Identify the program(s) in which this course is required:**Programs:**

MS in Electrical and Electronic Engineering

MS in Computer Engineering

Certificate in Integrated Circuit Design

Blended BS/MS in Electrical Engineering

Does the proposed change or addition cause a significant increase in the use of College or University resources (lab room, computer)?

No

Will there be any departments affected by this proposed course?

No

I/we as the author(s) of this course proposal agree to provide a new or updated accessibility checklist to the Dean's office prior to the semester when this course is taught utilizing the changes proposed here.

I/we agree

University Learning Goals

Graduate (Masters) Learning Goals:

Disciplinary knowledge
Critical thinking/analysis
Research (optional)

Is this course required as part of a teaching credential program, a single subject, or multiple subject waiver program (e.g., Liberal Studies, Biology) or other school personnel preparation program (e.g., School of Nursing)?

No

Is this a Graduate Writing Intensive (GWI) course?

No

Key: 1737