

# A Two-semester Project-based Mixed-signal IC Design Course Using Commercial EDA Tools

## - From Design to Chip Evaluation

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Dept of Electrical & Computer Engineering



## The objectives



Expose students to commercial design flows

Opportunity for students to apply the fundamentals to real problems



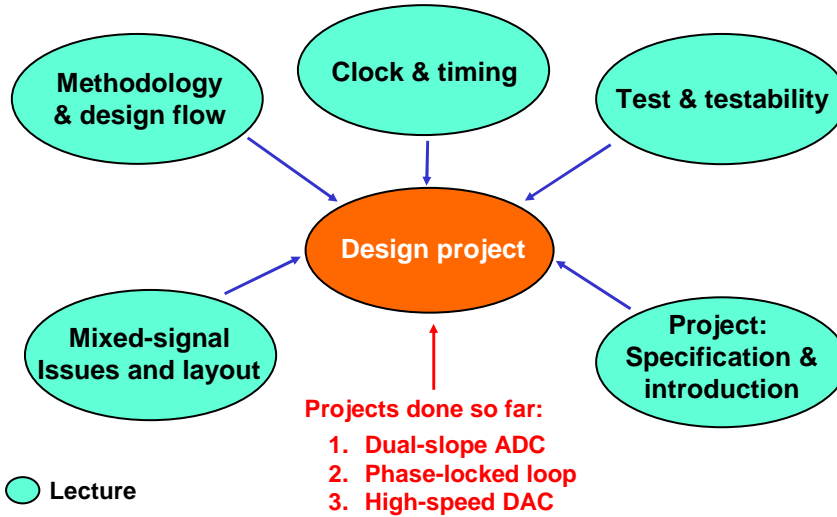
Improve student's analytical and problem-solving skills

Allow students to experience competition and tight tape-out schedule



Appreciation of teamwork

# Course syllabus



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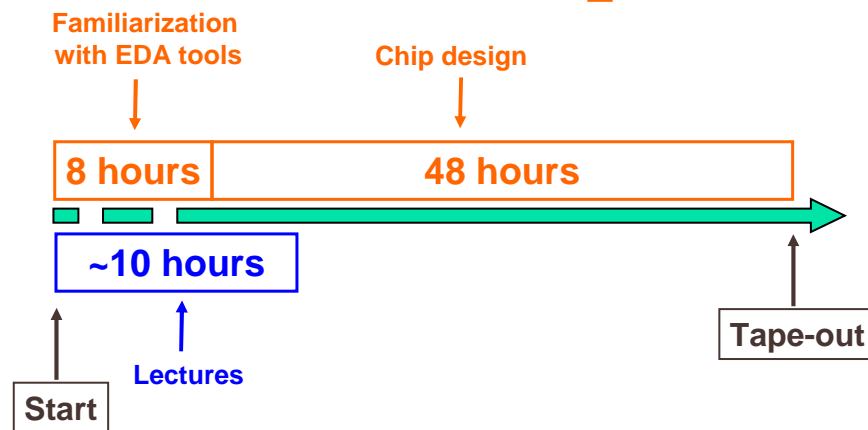
# Course organization



## Semester 1:

Lecture (2.5hrs/wk)

Laboratory (4hrs/wk)



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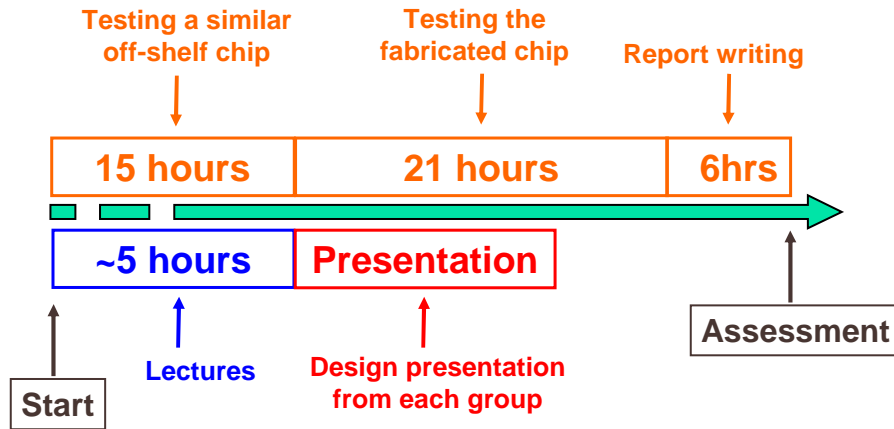
# Course organization



## Semester 2:

□ Lecture (2.5hrs/wk)

□ Laboratory (3hrs/wk)



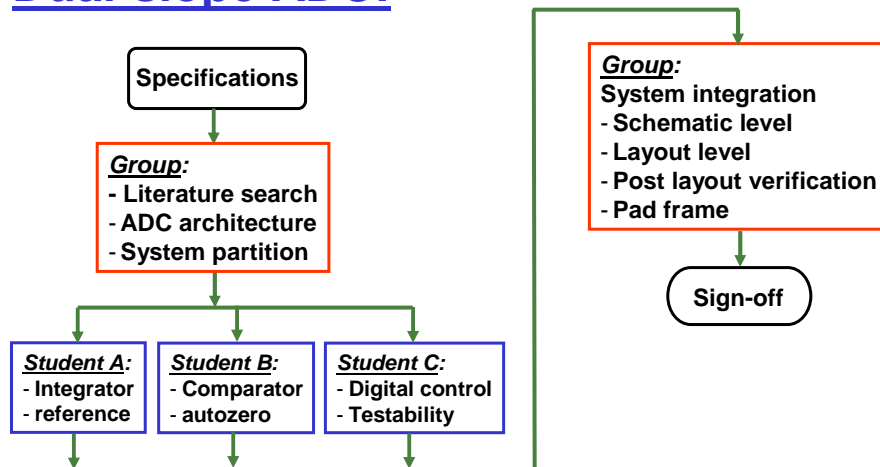
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# Project execution



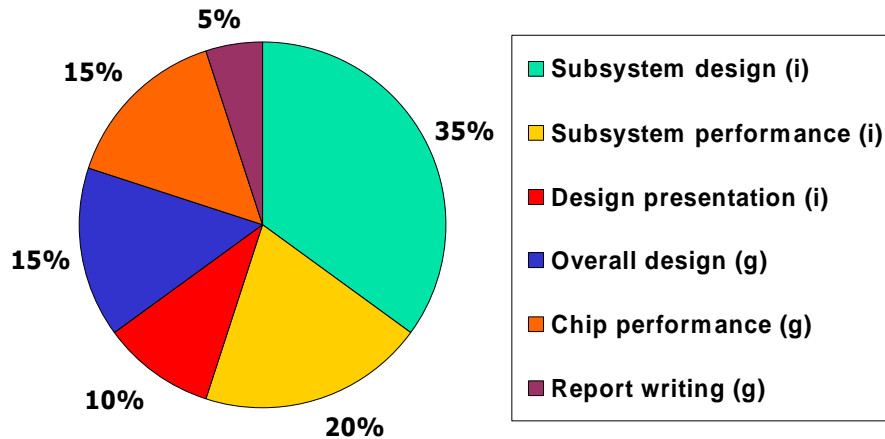
## Dual-slope ADC:



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# Assessments

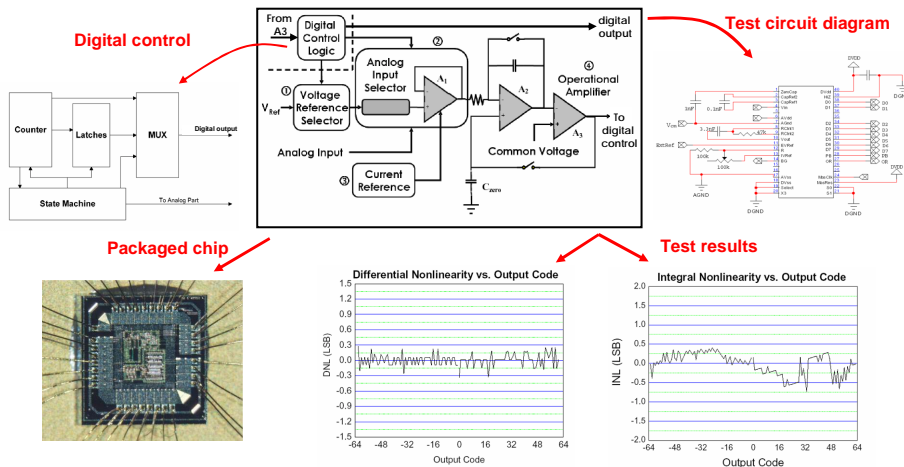


**i – Individual assessment, g – group assessment**

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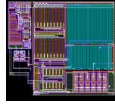
# Project example

## 8-bit dual-slope ADC (extracted from student's report)



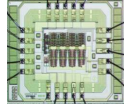
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# Other information



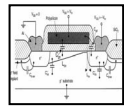
## EDA tools:

**Cadence mixed-signal flow**



## Foundry:

**Austria Micro Systems (AMS),  
through CMP France**



## Technology:

**0.6-um CMOS process**



## Cost:

**~ 550 euro/student**

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