<table>
<thead>
<tr>
<th><strong>Course Code</strong></th>
<th>Advanced VLSI Design</th>
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<tbody>
<tr>
<td><strong>Section</strong></td>
<td>Spring 2013</td>
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<tr>
<td><strong>Credits</strong></td>
<td>3</td>
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**Class Website**  
http://www.icr.ece.ufl.edu/teaching/EEE6323-S13/EEE6323-S13.htm

**Pre-requisites**  
EEL 5322

**Course Objectives**  
To develop a basic understanding of CMOS integrated circuit design. To develop proficiency in analysis, design and implementation of CMOS circuits. To develop a basic understanding of design considerations to maximize chip success.

**Instructor**  
Dr. Rizwan Bashirullah  
527 NEB  
rizwan@ufl.edu

**Office Hours**  
Tuesdays 11:30am-12:30pm

**Meeting Time**  
Tuesdays (4): 10:40am – 11:30am  
Thursdays (4-5): 10:40am – 12:35pm

**Meeting Location**  
NEB 101

**Administrative Assistant**  
Janet Holman,  
526 NEB  
holman@ece.ufl.edu

**Teaching Assistants**  
Qiuzhong Wu  
E-mail: qiuzhongwu@ufl.edu  
Office: NEB 556  
Office hours: Wednesday 3:00pm-5:00pm

TBD  
E-mail:  
Office: NEB 506  
Office hours: Mondays 3:00pm-5:00pm

**Required Textbook**  

In addition, handouts developed by instructor may be downloaded from class www site

**Recommended Textbook**  
### Computer/soft. requirements
Workstations with CADENCE Design system.

### Course Topics
- Scaling Trends
- Process Technology
- Transistor Models
- Logical Effort
- Wires
- Digital IC flow
- Synthesis and Place and Route
- Circuit Families
- Dynamic Circuits
- Low Power Design
- Adders
- Multipliers
- Clock Distribution and Generation
- Skew Tolerant Design
- Latches and Flip-flops
- Signaling
- Packaging and I/O
- Power Delivery and Decoupling
- Memory
- Variability/Circuit Pitfalls

### Grading policy
This is a tentative grading policy.

- Problem sets (5-6): 30%
- Midterm (2): 20% each
- Final Project (1): 30%

**Typical grading scale:**

- 90 - 100 = A
- 87 - 90 = A-
- 83 - 87 = B+
- 80 - 83 = B
- 77 - 80 = B-
- 73 - 77 = C+
- 70 - 73 = C
- 67 - 70 = C-
- 63 - 67 = D+
- 60 - 63 = D
- 57 - 60 = D-
- < 57 = E

**Note:** Curves have typically not been used; however, it may be used if necessary.

It is expected that students will attend all lectures on-time. Furthermore, it is expected that attendees will take every possible measure to minimize distractions for everyone.

### Academic Honesty
All students admitted to the University of Florida have signed a statement of academic honesty committing themselves to be honest in all academic work and understanding that failure to comply with this commitment will result in disciplinary action.

This statement is a reminder to uphold your obligation as a student at
the University of Florida and to be honest in all work submitted and exams taken in this class and all others.

Software Use – All faculty, staff and student of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

<table>
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<tr>
<th>Student with disability</th>
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<tr>
<td>Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide documentation to the instructor when requesting accommodation.</td>
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UF Counseling Services – Resources are available on-campus for students having personal problems or lacking clear career and academic goals. The resources include:

- University Counseling Center, 301 Peabody Hall, 392-1575, Personal and Career Counseling.
- SHCC mental Health, Student Health Care Center, 392-1171, Personal and Counseling.
- Center for Sexual Assault/Abuse Recovery and Education (CARE), Student Health Care Center, 392-1161, sexual assault counseling.
- Career Resource Center, Reitz Union, 392-1601, career development assistance and counseling.