

# Course on VLSI Design Techniques



**Nizar Abdallah**

*INTRODUCTION*  
VLSI Design Techniques



**LABORATOIRE LIP6 - Departement ASIM  
UNIVERSITE PIERRE ET MARIE CURIE (PARIS VI)  
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# OUTLINE

- I - INTRODUCTION**
- II - DESIGN METHODOLOGY: AN OVERVIEW**
- III - ABSTRACTION LEVELS IN ALLIANCE**
- IV - VHDL: A HARDWARE DESCRIPTION LANGUAGE**
- V - VHDL: THE ALLIANCE SUBSET**
- VI - ALLIANCE: A COMPLETE DESIGN SYSTEM**
- VII - FPGA ARCHITECTURE AND DESIGN FLOW**
- VIII - TODAY'S CHALLENGES IN CAD TOOLS**

# THE LIP6 LABORATORY

**Architecture des Systèmes intégrés et Micro électronique (ASIM)  
UNIVERSITY PIERRE ET MARIE CURIE**



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# THE LIP6 LABORATORY



168 RESEARCHERS

ARCHITECTURE	59	NETWORKS & PERFORMANCES	30
DISTRIBUTED SYSTEMS	36	PARALLEL ALGORITHMS	17

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# THE ARCHITECTURE GROUP

CAD for VLSI

Architecture

<b>Portable Libraries</b>	<b>9</b>	<b>Superscalar Processor</b>	<b>5</b>
<b>Verification</b>	<b>7</b>	<b>RCUBE Router</b>	<b>8</b>
<b>Logic Synthesis</b>	<b>5</b>	<b>RAPID Coprocessor</b>	<b>6</b>
<b>Architecture Synthesis</b>	<b>4</b>		
<b>Test</b>	<b>5</b>		

# EDUCATION TARGET

- Undergraduate Students (~ 80 Students and 72 Hours)
  - ✧ **Electrical Engineering**
  - ✧ **Computer Science**
  
- Postgraduate Students (~ 60 Students and 300 Hours)
  - ✧ **DEA ASIME**
  - ✧ **DESS CIMI**



# THE ALLIANCE SYSTEM



- A **Complete Set** of CAD Tools for Digital CMOS VLSI Design
- Proposes a Design Methodology
- Portable, Compact and Easy to Learn
- ALLIANCE is Totally **FREE**