PG Diploma in VLSI & Embedded Hardware Design

Objective of the Course:
The PG Diploma in VLSI & Embedded Hardware Design is intended to impart training in designing complex digital systems using integrated circuit cells as building blocks and employing hierarchical design methods. Emphasis of the teaching curriculum is on design methodology and practicable applications. The course contents have been designed keeping in view the emerging trends in the field of VLSI design technology and emerging needs for skilled manpower.

Learning Outcomes:
This course is structured to provide the students knowledge in Design of Digital Systems, System Architectures, Hardware description Languages required for VLSI Design such as VHDL and Verilog. The students shall learn how to program and test programs on FPGAs, CPLDs etc. The students shall get exposure to the Various ASIC Design Issues, CMOS Technology, VLSI Design techniques.

Expected Job Roles:
VLSI Design Engineer

Duration of the Course (in hours) 720 hrs /24 Weeks

Appr. Fees (INR): Rs 68,000/- (Service Tax Extra)

Minimum eligibility criteria and prerequisites if any
b. Graduates with appropriate experience and final year students also may apply

Outline of the Course

<table>
<thead>
<tr>
<th>S. No</th>
<th>Topic</th>
<th>Minimum No. of Hours</th>
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<tbody>
<tr>
<td>1.</td>
<td>Advanced Digital Design</td>
<td>90</td>
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<tr>
<td>2.</td>
<td>VHDL - Language and Coding for Synthesis</td>
<td>90</td>
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<td>3.</td>
<td>Verilog - Language and Coding for Synthesis</td>
<td>90</td>
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<td>4.</td>
<td>CMOS Logic Design</td>
<td>30</td>
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<td>5.</td>
<td>Embedded Controller Based Product Design</td>
<td>60</td>
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<tr>
<td>6.</td>
<td>Programmable SoC</td>
<td>30</td>
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<td>7.</td>
<td>FPGA Design Methodology and Prototyping</td>
<td>60</td>
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<td>8.</td>
<td>RTL Verification</td>
<td>30</td>
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<tr>
<td>9.</td>
<td>Project</td>
<td>240</td>
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</tbody>
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Theory/ Lecture Hours: 216
Practical/ Tutorial Lecture Hours: 504
Total Hours: 720
Short Term Courses – NIELIT

Books recommended for reference and reading:

2. Wakerly, John F.. Digital Design Principles and Practices,
3. VHDL Programming By Example By Douglas Perry-PHI
4. Verilog HDL, 2/E By Samir Palnitkar,Pearson Education
6. Smith, M.J.S., Application-Specific Integrated Circuits, Addison-Wesley
9. FPGA Users Guides And Datasheets From Xilinx & Altera

Group Code: VLSI
Course Code: PG01

Group Name: VLSI
Course Name: PG Diploma in VLSI & Embedded Hardware Design