



SLC (University of Delhi) Centre for Skill Development



SHORT TERM /ADD ON COURSES

Certificate course in VLSI design

About the Course:

It was started by the Centre for Skill Development (CSD) in the year 2023-24 in collaboration with the National Institute of Electronics & Information Technology (NIELIT), an Autonomous Scientific Society under the administrative control of the Ministry of Electronics & Information Technology (MoE&IT), Government of India.

Eligibility Criteria:

1. Minimum eligibility is 10+2 (from any stream or subjects) with 45% aggregate.
Or
2. Graduates from any recognized universities are also eligible.

Course Details:

1. 2 Months (2 hours Class to be held thrice a week).
2. National Institute of Electronics & Information Technology (NIELIT) (An Autonomous Scientific Society under the administrative control of Ministry of Electronics & Information Technology (MoE&IT), Government of India).
3. Minimum number of students in each batch of course: 20
Maximum number of students in each batch of course: 50

Important Dates:

Registration begins in the last week of May every year.

Commencement of course: September/October.

Registration details:

The non-refundable registration fee of INR 100/- is to be made at

A/c Name: SHYAM LAL COLLEGE MISCELLANEOUS A/C

A/c No. : 1247800135

IFSC Code: CBIN0283941

MICR Code: 110016147

Bank: Central Bank of India

Documents required at the time of registration:

1. Copy of class 12th mark sheet or Graduation Degree/Mark sheet.
2. Screenshot of payment of registration fee of INR 100/-.

Link to register: <http://bit.ly/Add-ouncourses23>

Fee Structure:

INR 5000/- (including GST) for 60 hrs.

Guidelines:

1. Admission is on a First come First Serve Basis for the students meeting the eligibility criteria.
2. Online Registration Forms and details are available on the college website.
3. One-time registration fee of INR100/- is payable for Registration (non-refundable).
4. Students may enroll in two short-term courses at the same time, as well as any one Certificate/Diploma/Advanced Diploma course in addition to one short-term course.
5. Students who are willing to do more than one course must fill out a separate form for each course opted (**registration fee needs to be paid only once**).
6. For any query Email us at csd@shyamlal.du.ac.in
7. Classes for the courses will be conducted in physical mode at Shyam Lal College, from 2:00 PM onwards.
8. An amount of INR1000/- will be deducted if admission is cancelled. No refund will be allowed after July 31, 2024.

Note: Commencement of a course is subject to admission of minimum number of students.

After registration, candidates shortlisted for admission will be notified of further admission details on their registered email addresses through the official CSD email address: csd@shyamlal.du.ac.in within 15 days of submitting online registration form.

Course Curriculum

Certificate course in VLSI design

Duration: 60hrs (6 weeks/@2hoursdaily)

Course Outline

Section	Topics to be covered	Duration (In Hours)
1	Introduction to VLSI	10
2	Review of Advanced Digital Design	15
3	Hardware description language (Verilog HDL)	20
4	FPGA prototyping & Architecture	15
Total Duration		60

Course Contents

Introduction to VLSI

Introduction , VLSI Design Flow, Design Hierarchy , Concepts of Regularity, Modularity and Locality ,VLSI Design Styles , Design Quality ,Packaging Technology ,Computer-Aided Design Technology

Review of Advanced digital design

Combinational circuits, Glitches and Hazards: Static Hazards, Dynamic Hazards, Building Blocks for Logic design: Nand-Nor Structures, Multiplexers, Encoders, Priority Encoders, Decoders, Fundamentals of sequential logic design-Storage elements: Latches, Flip flops, Design of State machines

Hardware description language(Verilog HDL)

Introduction to HDL, Design flow diagram, Hierarchical Modelling Concepts- Top-to-down methodologies, Bottom-to-up methodologies, Gate level modelling, Concept of various types of delays, Behavioral modelling, Implementation of Conditional statements, Design problems, State table entries, Switch level modelling-Designing of MOS , bidirectional switches, User defined primitives(UDP).

FPGA prototyping & Architecture

Programmable logic devices (PLD)-PROM,PLA,PAL. Complex programmable logic devices(CPLD),Introduction to FPGA-FPGA architecture, Types of FPGA's, Application of FPGA's, Different boards of FPGA, FPGA prototyping, Design partitioning, Timing analysis in FPGA, concept of Clock Skew.