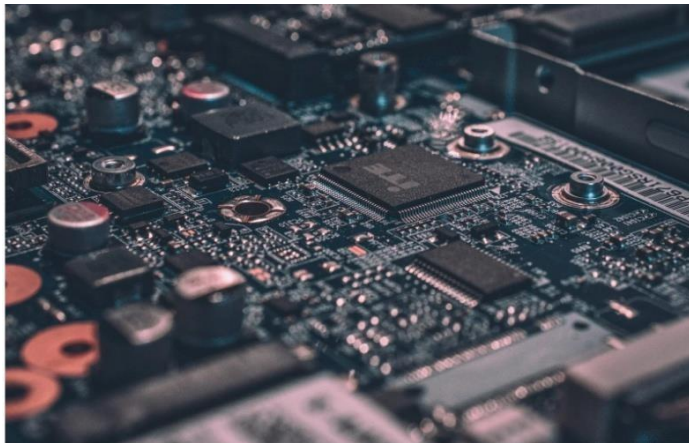




*Certificate Course
ON*

FPGA PROGRAMMING

From 11th September 2023 to 15th September 2023



ORGANIZED BY

**DEPT. OF ELECTRONICS & COMMUNICATION ENGINEERING
AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY,
MAKAVARAPALEM (V), VISAKHAPATNAM-531113**

AVANTHI EDUCATIONAL SOCIETY

Avanthi Educational Society under the Leadership of Sri M. Srinivasa Rao garu as chairman was started in the Year 1991. Within a short span of its establishment, the group has made a remarkable stride in the field of education offering various courses at Under Graduate, Post Graduate, Pharmacy & Engineering levels. This milestone is achieved as the institution carved itself to impart quality and career oriented education, countering the challenges of the modern world through planning, dedication, determination, prompt execution and with the innovative ideas of our advisory board.

Today, Avanthi Educational Society is proud to have a strength of over 16000 students with 15 institutions under its ambit. It is the path of glory towards the success during the last 25 years. The institution has been adjudged many times as the second best educational institutions in the twin cities and 16th best in all over India through the impartial survey made by the renowned magazine "India Today".

AVANTHI INSTITUTE OF ENGINEERING & TECHNOLOGY

AIET started in the year 1999 and offers various courses at Engineering and PG level. The college is providing with rooms, computer centre, laboratories and seminar hall with audio-visual equipments. Industry Institute interaction is conducted regularly to emphasize on the latest trends in the present market.



It is very near to Narsipatnam. Frequent bus facilities are available both from and to Visakhapatnam and Narsipatnam. Very safe and secure hostel facility is available for Girl students. These are the additional facilities besides excellent academic atmosphere in the college campus.

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

The ECE Department was establishment in the year 1999 with an intake of 60 students and this was increased to 120 students in the 2007 and increased to 180 students in the 2012. The department has an eminent faculty and well supported infrastructure and laboratories the faculty keeps abreast with the latest advances in technology and ensures that hardware equipment and related software are upgraded to ensure its students are able to keep pace with current trends in technology and the industry.

The department also offers a Post – Graduation courses in DECS and VLSI Design. The students are encouraged to participate in workshops, industrial internship, industrial visits and seminars along with the projects assigned during the course, these enable them to broaden their outlook and build in professionalism that makes their transition from college to industry smoother after graduation.

CHIEF PATRON

Sri. M. Srinivasa Rao
Chairman, Avanthi Educational Society
Andhra University

PATRON

Dr. C P V N J Mohan Rao
Principal,
Avanthi Institute Of Engineering And Technology

CHAIRMAN

Dr E Govinda
Head of the Department
Electronics & Communication Engineering

COORDINATOR

Mr T P Naidu
Assistant Professor
Electronics & Communication Engineering

ABOUT WORKSHOP

FPGA programming is the process of creating a logic circuit for a field-programmable gate array (FPGA). This circuit is described using a hardware description language (HDL). The FPGA can then be programmed to perform the desired function. FPGA (Field-Programmable Gate Array) programming is a fascinating area that combines hardware and software. In FPGA programming, you design custom digital circuits that can be reconfigured at any time to perform a variety of tasks. This allows you to create highly efficient solutions for specific problems without being limited by fixed hardware architectures.

TOPICS TO BE COVERED

Introduction to FPGA, programming languages, key steps in FPGA development, FPGA development tools, Use Cases for FPGAs, Simulation and Debugging, Learning FPGA Development, Challenges in FPGA Programming, Advantages of FPGAs.

For Registration please contact Mr. T P Naidu, Assistant Professor, ECE department.



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Tamaram, Makavarapalem, Narsipatnam (RD), Visakhapatnam-531113

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

CIRCULAR

Date: 04 09 2023

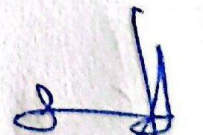
This is informed to all the IV B.Tech ECE students that our department is planning to conduct five days course on "FPGA PROGRAMMING" scheduled on 11TH September 2023. It is directed to all the students of IV ECE to utilize this opportunity to enhance your technical skills. For more details about registration process and participation contact Course Coordinator Mr. T P Naidu, Assistant Professor, ECE.

RESOURCE PERSON:

Dr. R Uma Maheswari
Professor,
Department of ECE,
V I E T – Visakhapatnam.

Dr B N Srinivasa Rao
Professor
Pragathi Engg. College
Surampalem – E G Dist.


COORDINATOR


HOD

HEAD OF THE DEPARTMENT
DEPARTMENT OF ECE
Avanthi Institute of Engg. & Tech.
Makavarapalem, Visakhapatnam Dist-531 113

Copy to: Principal, AIET



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DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

A five-day workshop on

Advancements in FPGA Programming

11th September to 15th September 2023

About this Workshop

FPGA programming is the process of creating a logic circuit for a field-programmable gate array (FPGA). This circuit is described using a hardware description language (HDL). The FPGA can then be programmed to perform the desired function. FPGA (Field-Programmable Gate Array) programming is a fascinating area that combines hardware and software. In FPGA programming, you design custom digital circuits that can be reconfigured at any time to perform a variety of tasks. This allows you to create highly efficient solutions for specific problems without being limited by fixed hardware architectures.

Syllabus of the Workshop:

Chapter-1

- What is FPGA?

Chapter-2

- Programming Languages

Chapter-3

- Key Steps in FPGA Development

Chapter-4

- FPGA Development Tools

Chapter-5

- Use Cases for FPGAs

Chapter-6

- Simulation and Debugging, Learning FPGA Development, Challenges in FPGA Programming, Advantages of FPGAs

EXPECTED OUTCOMES

- The outcomes of learning FPGA programming are both practical and theoretical, and they vary based on the level of expertise you reach.
- Gain a solid foundation in how FPGAs work, including their **configurable logic blocks, routing resources, and I/O elements**.
- Learn to write code using **VHDL and Verilog**, the two main HDLs used in FPGA programming.
- Acquire skills in designing and implementing digital circuits using FPGAs.


Coordinator


HOD

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DEPARTMENT OF ECE
Avanathi Institute of Engg. & Tech.
Makav
Visakhapatnam District



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DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

Program Schedule

Session-1 (11/09/2023)

9.00 AM to 11.00 AM - Introduction to FPGA?

11.00 AM to 11.15 AM – Tea Break

11.15 AM to 1.15 PM - Programming Languages – VHDL, Verilog.

1.15 PM to 2.15 PM – Lunch Break

2.15 PM to 4.15 PM - High-Level Synthesis (HLS) tools

Session-2 (12/09/2023)

9.00 AM to 11.00 AM - Key Steps in FPGA Development - Design the Circuit (HDL Code)- Synthesis.

11.00 AM to 11.15 AM – Tea Break

11.15 AM to 1.15 PM - Implementation (Place and Route), Bitstream Generation.

1.15 PM to 2.15 PM – Lunch Break

2.15 PM to 4.15 PM - Testing and Debugging. (Hands on Training)

Session-3 (13/09/2023)

9.00 AM to 11.00 AM - FPGA Development Tools

11.00 AM to 11.15 AM – Tea Break

11.15 AM to 1.15 PM - Use Cases for FPGAs - Signal Processing, Machine Learning Acceleration.

1.15 PM to 2.15 PM – Lunch Break

2.15 PM to 4.15 PM – Networking, Cryptography, Embedded Systems.

Session-4 (14/09/2023)

9.00 AM to 11.00 AM – Simulation and Debugging, Learning FPGA Development, Challenges in FPGA Programming, Advantages of FPGAs

11.00 AM to 11.15 AM – Tea Break

11.15 AM to 1.15 PM – About FPGA design tools

1.15 PM to 2.15 PM – Lunch Break

2.15 PM to 4.15 PM - Hands on Training

Session-5 (15/09/2023)

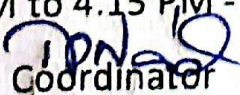
9.00 AM to 11.00 AM - Learning FPGA Development - Pick a Development Board

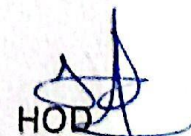
11.00 AM to 11.15 AM – Tea Break

11.15 AM to 1.15 PM - Challenges in FPGA Programming - Learning Curve, Debugging.

1.15 PM to 2.15 PM – Lunch Break

2.15 PM to 4.15 PM - Valediction/Feedback Session.


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DEPARTMENT OF ELECTRONICS & COMUNICATION ENGINEERING

Certificate Course on "FPGA Programming" from 11th September to 15th September 2023

IV BTECH ECE STUDENT ATTENDANCE SHEET

S.No	REGISTRATION NUMBER	NAME OF THE STUDENT	11/09	12/09	13/09	14/09	15/09
1	20811A0401	ADAPUREDDI HEMA KIRAN	✓	✓	✓	✓	✓
2	20811A0403	ANNAMREDDY RENUKA	✓	✓	✓	✓	✓
3	20811A0404	A R JUSTINA	✓	✓	✓	✓	✓
4	20811A0405	AZAD TEPPALA	✓	✓	✓	✓	✗
5	20811A0406	BANDARU GANGADHAR	✓	✓	✓	✓	✓
6	20811A0407	BANDARU HARIKA	✓	✓	✓	✓	✓
7	20811A0408	BANDARU UDAYKAMAL	✓	✓	✓	✓	✓
8	20811A0409	BANTUBILLI SIRISHA	✓	✓	✓	✓	✓
9	20811A0410	BARNIKALA LOKESH	✓	✓	✓	✓	✓
10	20811A0411	BEERA MAHESH BABU	✓	✓	✓	✓	✓
11	20811A0412	BHEEMUNI YASASWANI NAMRATHA SRI	✓	✗	✓	✓	✗
12	20811A0413	BODDETI PRASANTHI	✓	✓	✓	✓	✓
13	20811A0414	B. NIKHIL TEJA	✗	✓	✓	✓	✓
14	20811A0415	BOTTA TULASI	✓	✓	✓	✓	✓
15	20811A0416	CHANDAKA PAVANI	✓	✓	✓	✓	✓
16	20811A0417	CHIKKALA.GOWRI PARVATHI DEVI	✓	✓	✓	✓	✓
17	20811A0420	GEMBALI.LAHARI	✗	✓	✓	✓	✓
18	20811A0421	G. VENU MADHAV	✓	✓	✓	✗	✓
19	20811A0422	GOKULAPATI SHYAM	✓	✓	✗	✓	✓
20	20811A0423	G DEVAMANIKANTA	✓	✓	✓	✓	✓
21	20811A0424	GONTHINA DEEPTHI	✓	✓	✓	✓	✓
22	20811A0425	GUNISSETTY TANMAYEE SATYA	✓	✓	✓	✓	✓
23	20811A0427	J SRINIVAS SARAT	✓	✓	✓	✓	✓
24	20811A0428	KETHAVARAPU BHARGAVI	✓	✓	✓	✓	✓
25	20811A0429	KILLAMPALLI PRASANNA	✓	✓	✓	✗	✓
26	20811A0430	KONA MOHAN KARTHIK	✓	✓	✓	✓	✓
27	20811A0431	KORATANA TEJA	✓	✓	✓	✓	✓
28	20811A0433	KORRAYI DHARAMALLESH	✗	✓	✓	✓	✓
29	20811A0434	JAYALAKSHMI NANDAVARAPU	✓	✓	✓	✓	✓
30	20811A0435	LEKKALA KALYANI	✓	✓	✓	✓	✓
31	20811A0436	MADDEM MANITEJA	✓	✓	✓	✓	✓
32	20811A0437	MONALI MALLA	✓	✓	✓	✓	✓
33	20811A0438	MARRAPU SURESH	✓	✓	✓	✓	✓
34	20811A0439	MEDAPUREDDI SUSEELA	✓	✓	✓	✓	✓
35	20811A0440	MIDATHANA SRIVANI	✓	✓	✓	✓	✗

36	20811A0441	MOLLETI DURGAPRASAD	✓	✗	✓	✓	✓
37	20811A0443	MUMMINA PRAVALLIKA	✓	✓	✓	✓	✓
38	20811A0444	MUNIPALLE PAVAN KUMAR	✓	✓	✗	✓	✓
39	20811A0445	SUDHAKAR NAGIREDDY	✓	✓	✓	✓	✓
40	20811A0446	NAMALA TEJASWINI	✓	✓	✓	✓	✓
41	20811A0447	PADMANABHAM SAI BHARGAVI	✓	✓	✓	✓	✓
42	20811A0448	PALLELA LAVANYA	✓	✓	✓	✓	✓
43	20811A0449	PALLI SRINU	✓	✓	✓	✓	✓
44	20811A0450	PANDIRIPALLI CHANDINI	✓	✓	✓	✓	✓
45	20811A0451	PENTAKOTA JASHWANTH KUMAR	✓	✓	✓	✓	✓
46	20811A0452	PENTAKOTA VASAVI	✗	✓	✓	✓	✗
47	20811A0453	PILLA PREMANJALI	✓	✓	✓	✓	✓
48	20811A0454	PITTA NAGA DURGA PRASAD	✓	✓	✓	✓	✓
49	20811A0455	POLUMURI APPALARAJU	✓	✓	✓	✓	✓
50	20811A0456	POTHU LAHARI	✗	✓	✓	✓	✓
51	20811A0458	R SAI KIRAN	✓	✓	✓	✓	✓
52	20811A0460	REDDY DHUSYANTH	✓	✓	✗	✓	✓
53	20811A0461	REVATHI MADDU	✓	✓	✓	✓	✓
54	20811A0462	ROUTHU SWETHASRI	✓	✓	✓	✓	✓
55	20811A0463	ROUTHU VENKATA DURGA PRASAD	✓	✓	✓	✗	✓
56	20811A0464	SANNIBOINA RAJESH	✓	✗	✓	✓	✓
57	20811A0465	SASAPU SATHEESH	✓	✓	✓	✓	✓
58	20811A0467	SINGAMPALLI RAMADINESH	✓	✓	✓	✓	✗
59	20811A0468	TAMARANA HEMA ESWARI SAI KUMAR	✓	✓	✓	✓	✓
60	20811A0470	UNDRAJAVARAPU DURGA RAO	✓	✓	✓	✓	✓
61	20811A0471	UPPATI DARABABU	✓	✓	✓	✓	✓
62	20811A0472	VANJARAPU THARUN KUMAR	✓	✓	✓	✓	✓
63	20811A0473	VANTEDDU BABU RAO	✓	✓	✓	✓	✓
64	20811A0474	VELAGA POOJITHA	✓	✓	✓	✓	✓
65	20811A0475	VOMMI SUMANTH	✓	✓	✓	✓	✓
66	20811A0476	YAKA POORNA VENKATESH	✓	✓	✓	✓	✓
67	20811A0477	YEDLA PUSHPA LATHA	✓	✓	✓	✓	✓
68	20811A0478	YENNI GNANESWARA RAO	✓	✓	✓	✓	✓
69	20811A0479	YERUVA BALESWAR REDDY	✗	✓	✓	✓	✓
70	21815A0401	KANDREGULA GEETHA SRI LAKSHMI	✓	✓	✓	✓	✗
71	21815A0402	KUSIREDDI TULASIRAM	✓	✓	✓	✓	✓
72	21815A0403	LALAM KUSUMA NAGA GANA MALLIKA	✓	✗	✓	✓	✓
73	21815A0404	LANKA LAKSHMI SUBHA SRI HAVYA	✓	✓	✓	✓	✓
74	21815A0405	PARAVADA BHANU PRASAD	✓	✓	✓	✓	✓
75	21815A0406	POLAMARASETTI JAGADEESH	✓	✓	✓	✓	✓
76	21815A0407	PONNADA PRIYANKA	✓	✓	✓	✓	✓
77	21815A0408	POOLLA VENKATA SRIVANI BHARGAVI	✓	✓	✓	✓	✓

78	21815A0409	VANGURI POORNA SEKHAR	✓	✓	✓	✓	✓
79	21815A0410	YENUGULA MANEESHA	✓	✓	✓	✓	✓
80	21815A0411	CHEPURI HEMALATHA	✓	✗	✓	✓	✓
81	21815A0413	GARAGA SAMUEL BABU	✓	✓	✓	✓	✓
82	21815A0414	KISTAM MOUNIKA	✓	✓	✓	✗	✓
83	21815A0415	KONATHALA SASI KANTH	✓	✓	✓	✓	✓
84	21815A0416	PENTAKOTA JAYANTH	✗	✓	✓	✓	✓
85	21815A0417	SAMMETLA VARSHINI	✓	✓	✓	✓	✓
86	21815A0418	BODDAPATI YESWANTH	✓	✓	✓	✓	✓
87	21815A0419	SETTI UMA VENKATA VARALAKSHMI	✓	✗	✓	✓	✓

T. P. N. K.
COORDINATOR

S. P. S.
HOD
HEAD OF THE DEPARTMENT
DEPARTMENT OF ECE
Sri Ananthi Institute of Engg. T
Akavarapalem, Visakhapatnam Dist-531 110



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Department of Electronics & Communication Engineering

Dt: 16 09 2023

BRIEF REPORT



TPN
Coordinator

[Signature]
Head of the Department
OF THE DE.
DEPARTMENT OF
Avanthi Institute of Engg. T
Makavarapalem, Visakhapatnam Dist-531 113



**AVANTHI INSTITUTE OF ENGINEERING AND
TECHNOLOGY**

**TAMARAM(V), MAKAVARAPALEM (M)
VISAKHAPATNAM-531113**

CERTIFICATE OF PARTICIPATION

This is to certify that Mr/Mrs _____ of
_____ has participated in the Certificate Course
entitled on “**FPGA PROGRAMMING**” during from 11th September 2023 to 15th September
2023 in Department of Electronics & Communication Engineering.

T P Naidu
Coordinator

Dr E Govinda
Chairman



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Tamaram, Makavarapalem, Narsipatnam (RD), Visakhapatnam-531113

Department of Electronics & Communication Engineering

Dt: 16 09 2023

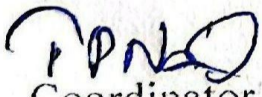
BRIEF REPORT

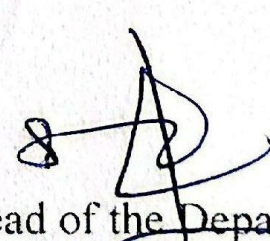
Department of Electronics & Communication Engineering, Avanthi Institute of Engineering and Technology had organized a certificate course on “FPGA Programming” during from 11th September 2023 to 15th September 2023.

Dr. R Uma Maheswari, She is delivered lecture about Field-Programmable Gate Arrays (FPGAs) are integrated circuits that can be programmed to perform a wide variety of tasks. Unlike traditional processors, FPGAs consist of a large array of programmable logic blocks, interconnects, and I/O blocks, allowing for parallel processing and hardware-level customization. This capability makes FPGAs particularly useful for applications in areas such as telecommunications, signal processing, automotive systems, and embedded systems.

Dr B N Srinivasa Rao, delivered lecture on FPGA programming enables the creation of highly specialized hardware circuits that can achieve high performance for specific tasks. While the learning curve and complexity are high, the advantages of parallelism, customization, and energy efficiency make FPGAs a powerful tool in fields such as embedded systems, telecommunications, and signal processing.

In this course covered FPGA Programming Process, Development Tools and Environments, Advantages of FPGA Programming, Challenges.


Coordinator


Head of the Department

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Makavarapalem, Visakhapatnam Dist-531 113**