Add – on Course

"ARM Processor Architecture and Programming"

Organized By: Department of Computer Science & Engineering

(2022-2023)

Add-on Course

ARM Processor architecture and Programming

Organized By: Department of Computer Science and Engineering

(2022-2023)

Dates from: 16-08-2022 to 21-08-2022

(06 Days, 05 Hrs per day, total 30 Hrs.)

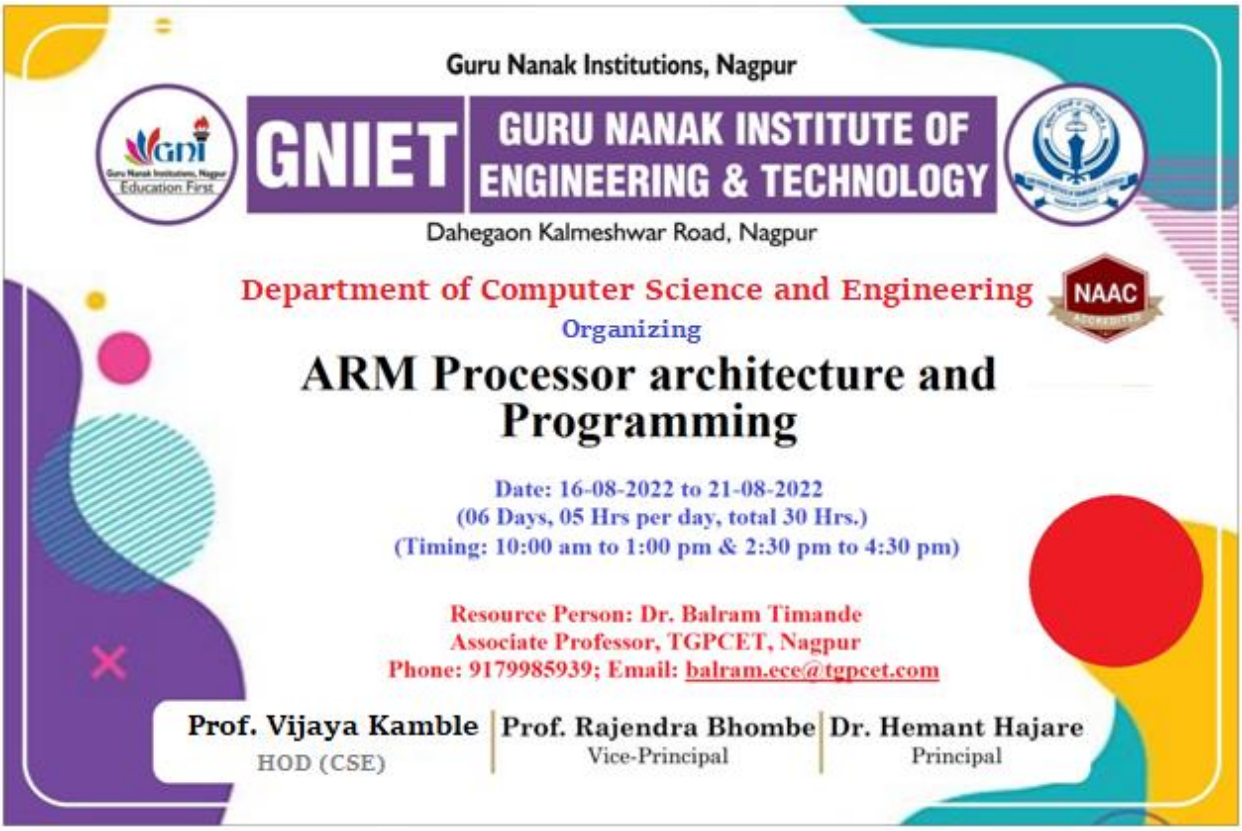
(Timing: 10:00 am to 1:00 pm & 2:30 pm to 4:30 pm)

Sr.No	Course Coordinator	Resource person
1	Prof. Shubhangi Ghadinkar Assistant Professor Department of CSE, GNIET, Nagpur	Dr. Balram Timande Associate Professor, TGPCET, Nagpur 9179985939 Email: balram.ece@tgpcet.com

Participants

Students of 5th & 7th Semester

Principal
Guru Nanak Institute of Engineering & Technology Nagpur- 441501



Brief Report On

Add-on Course: ARM Processor architecture and Programming.

The one week Add-on course on **ARM Processor architecture and Programming** was organized by **Department of Computer Science and Engineering** for Students of B. Tech. 5th (CBCS) and B.E.7th (CBS) CSE. The Add-on course was organized for the period of 30 hours starting from date: **16-08-2022 to 21-08-2022.** Timing for the classes and Hands on was 10:00 am to 1:00 pm & 2:30 pm to 4:30 pm. 05 hours per day (Total Course hours = 30 Hrs). The Add-on course was fully free of cost. Total 78 students have participated and completed Add-on course successfully. The resource person for the course was **Dr. Balram Timande,** balram.ece@tgpcet.com **, 9179985939**

Course Objective and Outcomes:

Course Objectives The main objective of the Add-on courses was

1. To impart additional knowledge about new technologies either partially or fully so that students become skilled and employable.
2. To offer conceptual knowledge of 32-bit Processor, ARM Architecture CortexM0.
3. To make the students skilled in RISC processor programming.
4. To make students confident so that they can communicate their knowledge effectively.
5. To make them aware of ethical, societal and environmental issues so that they can provide solutions to fulfill needs of society and have passive impact on environment as well as take care of ethics.

Course Outcomes:

After completion of the course students will be able to;

CO-1 Explain the needs of new technology for the growth of society as well as Nation.

CO-2 Discuss and Illustrate concepts of 32 bit RISC processor. And able to explain internal architecture of ARM processor.

CO-3 Analyze the data acquired from the surrounding with the help of programming.

CO-4 Communicate their knowledge with peoples who directly or indirectly connected with the solution they provide.

CO-5 Design or create the solution that will be useful for the society with taking care of environmental and ethical issues.

Course Mapping with POs and PSOs:

PO & PSO->	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2
CO-1	2	2	1	1	0	1	1	0	2	3	0	2	2	2
CO-2	2	3	2	3	0	1	0	0	2	2	0	2	3	2
CO-3	2	3	2	3	3	1	0	0	3	2	0	2	3	2
CO-4	2	1	3	3	0	3	3	3	2	3	3	2	2	3
CO-5	2	2	3	2	3	3	3	3	3	3	3	2	2	3
Avg POs	2	2.2	2.2	2.4	1.2	1.8	1.4	1.2	2.4	2.6	1.2	2	2.4	2.4
% PO/PSO attainment	66.7 %	73.3 %	73.3 %	80.0 %	40.0 %	60.0 %	46.7 %	40.0%	80.0%	86.7%	40.0%	66.7%	80.0%	80.0%

PO-1	**Engineering knowledge**	Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
PO-2	**Problem analysis**	Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
PO-3	**Design/ development of solutions**	Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
PO-4	**Conduct investigations of complex problems**	Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
PO-5	**Modern tool usage**	Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

PO-6	**The engineer and society**	Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
PO-7	**Environment and sustainability**	Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
PO-8	**Ethics**	Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
PO-9	**Individual and teamwork**	Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
PO-10	**Communication**	Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
PO-11	**Project management and finance**	Demonstrateknowledgeandunderstandingoftheengineeringandmanagement principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
PO-12	**Life-long learning**	Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Principal
Guru Nanak Institute of Engineering & Technology Nagpur- 441501

GURU NANAK INSTITUTE OF ENGINEERING & TECHNOLOGY
Dahegaon, Kalmeshwar Road, Nagpur-441 501
(NAAC Accredited)

Department of Computer Science & Engineering

GNIET/CSE/23-24/ Date: 08/08/2022

-:Notice:-

As per the guidelines of higher authorities and IQAC cell, Department of Computer Science and Engineering is organizing 30 hrs. (One week) add-on course **" ARM processor architecture and Programming"** from date **16-08-2022 to 21-08-2022.** Timing for the classes and Hands on will be 10:00 am to 1:00 pm & 2:30 pm to 4:30 pm. (05 hours per day; total hours = 30 Hrs). All the students of 5th and 7th semesters having a good attendance record in current as well as previous semester are eligible to participate. All the interested students are requested to register their names to Department Head before date of commencement of course. The Add-on course is fully free of cost

HOD (CSE)
Head of Department
Computer Science & Engineering
GNIET, Dahegaon, Nagpur

Copy to:

1. Hon. Chairman (For Information)
2. Principal GNIET
3. Vice-Principal GNIET
4. Notice board & Office copy.

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Course content:

1) Introduction to 32 bit Microcontroller

- Importance of 32-bit Microcontrollers
- Introduction to ARM
- Difference between ARM & MIPS
- Brief description of ARM Family Microcontrollers
- Introduction to ARM Cortex M Series

2) Architecture of STM32F0XXX

- Pin Diagram
- Memory Organization
- SFRs description
- Program Counter
- Accumulator (or Working Register)
- Reset
- Clock Cycle, Machine Cycle, Instructio Cycle
- Interrupts
- SFRs & GPRs
- Stack, Stack Pointer, Stack Operation
- General Purpose Input-Output PORTs
- Timers
- Analog to Digital Convertors
- USART
- EEPROM
- Device Protection features – Watchdog Timer, BOR, Power up Timer

3) KEIL V3

- Introduction to Keil IDE
- Making Project on Keil IDE
- Compiling a Sample Program to Understand Process

4) Embedded C Programming of GPIO of STM32Fxxx Controller

- LED Interfacing with Microcontroller
- LED Patterns programming
- Interfacing of Switches with Microcontroller
- Switches Programming
- Interfacing of SSD with Microcontroller

- Programming concept of SSD
- Different SSD Programs
- Interfacing of Character LCD with Microcontroller
- Description of Character LCD Commands
- Programming Concept of Character LCD
- Practice of Character LCD Programs
- Introduction to STM32Fxxx internal ADC and its SFRs
- Programming Concept of ADC
- Practice of Different ADC Programs
- Programming Concept of DAC
- Practice of Different DAC Programs
- Introduction to UART and its SFRs
- Programming concept of Serial Transmitter & Receiver using UART
- Practice of UART Programs
- Description to NVIC Interrupt Logic Diagram of STM32Fxxx
- Introduction to SFRs related to Interrupts
- Programming Concept of Interrupts
- Practice of Interrupt Programs

Daily Schedule:

DURATION from Date: 16-08-2022 to 21-08-2022

Day-1: Introduction to embedded systems and microcontrollers Instruction set architecture of ARM microcontroller, and assembly language programming.

Day-2: D/A and A/D converter, sensors, actuators and their interfacing and programming.

Day-3: Microcontroller development boards and embedded programming platforms

Hands-on and demonstration: Temperature sensing unit, Light sensing unit, Sound sensing unit

Day-4: Hands-on and demonstration II: Feedback control system, relay control unit, driving electrical appliances like motors, bulb, pump, etc.

Day-5: Hands-on and demonstration III: Object tracking using GPS and GSM

Day-6: Hands-on and demonstration IV: Introduction to Internet of Things, smart home concepts, motion sensing using accelerometer, control of appliances over SMS

Glimpses:

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Guru Nanak Institute of Engineering &
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List of Participants and Attendance: ARM Processor architecture and Programming

Organized By: Department of Computer Science and Engineering

Guru Nanak Educational Society's
GURU NANAK INSTITUTE
OF ENGINEERING & TECHNOLOGY
APPROVED BY AICTE, DTE & AFFILIATED TO RTM NAGPUR UNIVERSITY, NAGPUR
Dahegaon, Opp IOC Petrol pump, Kalmeshwar Road, Nagpur- 441501 Ph. 07118-661400
Website: www.gniet.ac.in E-mail: gnietnagpur@gmail.com

List of Participants and Attendance:

S.N	Name of Participanty	Sem	16-08-22	17-08-22	18-08-22	19-08-22	20-08-22	21-08-22
1	ACHAL ANANDRAO VIGHNE	VII	P	P	P	P	P	P
2	AYUSHI VINOD MESHRAM	VII	P	P	P	P	P	P
3	BHAWANA VINOD IKHAR	VII	P	P	P	P	P	P
4	DARSHANA SUBHASHRAO NASARE	VII	P	P	P	P	P	P
5	DEEPALI TEJLAL MANE	VII	P	P	P	P	P	P
6	GAYATRI GAJANAN GAWANDE	VII	P	P	P	P	P	P
7	JAYASHRI HARICHANDRA KHOPE	VII	P	P	P	A	P	P
8	JAYSHRI CHINDHUJI CHIKHALE	VII	P	P	P	P	P	P
9	KARISHMA NIRMAL MANEKAR	VII	P	P	P	P	P	P
10	MAYURI TIKARAM SONKUSARE	VII	P	P	P	P	P	P
11	MOHINI DHANRAJ PATIL	VII	P	P	P	P	P	P
12	NISHA WASUDEO KARNAKE	VII	P	P	P	A	P	P
13	NIVRUTTI DINESH PATLE	VII	P	P	P	P	P	P
14	PALLAVI MANOHAR SATAO	VII	P	P	P	P	P	P
15	PRIYANKA DILIP MANMODE	VII	P	P	P	P	P	P
16	PUNAM NANGO BUDHE	VII	P	P	P	P	P	P
17	RESHAMA SURESHRAO LAMSE	VII	P	P	P	P	P	P
18	REVTI CHANDRASHEKHAR BURDE	VII	P	P	P	P	P	P
19	SAKSHI SHALIKRAM SAWARKAR	VII	P	P	P	P	P	P
20	SILKY SANTOSH PANDEY	VII	P	P	P	P	P	P
21	TRUPTI DILIRAM CHOURAGADE	VII	P	P	P	P	P	P
22	VAISHNAVI DILIP CHANNE	VII	P	P	P	P	P	P
23	VAISHNAVI GAJANAN BHALERAO	VII	P	P	P	P	P	P
24	VAISHNAVI RAMESH HIWASE	VII	P	P	P	P	P	P

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Website: www.gniet.ac.in E-mail: gnietnagpur@gmail.com

25	ABHISHEK PADMAKAR KSHIRSAGAR	VII	P	P	P	P	P	P
26	ABHISHEK PRAKASH NIKAM	VII	P	P	P	P	P	P
27	ABHISHEK SUDAM SOLANKE	VII	P	P	P	P	P	P
28	ADITYA DAYARAM WAGHMARE	VII	P	P	P	P	P	P
29	ANIKET MADHUKAR THOTE	VII	P	P	P	P	P	P
30	ATHARVA PRAKASH WANKAR	VII	P	P	P	P	P	P
31	ATHARVA SANJAYRAO DONDAL	VII	P	P	P	P	P	P
32	DURGESH AKNATH BHAGWAT	VII	P	P	P	P	P	P
33	HARSHAL RAJU PATIL	VII	P	P	P	P	P	P
34	KARTIKEYA SINGH DHARMENDRA SINGH THAKUR	VII	P	P	P	P	P	P
35	KRUNAL VINAYAK DEVTALE	VII	P	P	P	P	P	P
36	KRUSHNA ARUNRAO GANJARE	VII	P	P	P	P	P	P
37	LILADHAR TULARAM ITOLE	VII	P	P	P	P	P	P
38	PRAVIN JUNGILAL UIKE	VII	P	P	P	P	P	P
39	RAVINDRA RAMESH JAWARKAR	VII	P	P	P	P	P	P
40	ROHIT RAMSING THAKRE	VII	P	P	P	P	P	P
41	SAGAR PRABHAKAR NIMKAR	VII	P	P	P	P	P	P
42	SUVHENDU DIPENDU SAHA	VII	P	P	P	P	P	P
43	SWAPNIL PADMAKAR KANIRE	VII	P	P	P	P	P	P
44	ANAM NAAZ MOHAMMAD AARIF SHEIKH	V	P	P	P	P	P	P
45	ANJUM . SHEIKH	V	P	P	P	P	P	P
46	ASHWINI VIJAY CHAUHAN	V	P	P	P	P	P	P
47	DIVYANI PRADIPRAO PATURDE	V	P	P	P	P	P	P
48	DIVYANI SUJIT NITNAWARE	V	P	P	P	P	P	P
49	HRUTU SHISHUPAL WALDE	V	P	P	P	P	A	P
50	ISHA MURLIDHAR GOTMARE	V	P	P	P	P	P	P
51	JAYASHRI KISHOR PAHADE	V	P	P	P	P	P	P

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Website: www.gniet.ac.in E-mail: gnietnagpur@gmail.com

52	JYOTI YOGESH BAWANE	V	A	P	P	P	P	P
53	KALLYANI ASHOK GEDEKAR	V	P	P	P	P	P	P
54	REKHA RAMESH RAHANGDALE	V	P	P	P	P	P	P
55	ROJI TEJRAM WAGHMARE	V	P	P	P	P	P	P
56	RUCHIKA KESHAV KANGALE	V	P	P	A	P	P	P
57	RUTUJA RAJKUMAR YERANDE	V	P	P	P	P	P	P
58	SANGHPRIYA VINODRAO MOHOD	V	A	P	P	P	P	P
59	ABHIJIT SATISHRAO PURI	V	P	P	A	P	P	P
60	ADARSH AJAY SAWAIMUL	V	P	P	P	P	P	P
61	ADARSH BAPURAO SARDAR	V	P	P	P	P	P	P
62	AMANSHU DILIP TAKLIKAR	V	P	P	P	P	P	P
63	ANSHUL SURESH MANWATKAR	V	P	P	P	P	P	P
64	ANURAG ANIL GANVEER	V	P	P	P	P	P	P
65	MANISH MOHANLAL UKEY	V	P	P	P	P	P	P
66	MANTHAN SHRIKANT SAKHARE	V	P	P	P	P	P	P
67	NEERAJ AJAY SHRIVASTAVA	V	P	P	P	P	P	P
68	NITESH BUDHRAM KHOBRAGADE	V	P	P	P	P	P	P
69	OM SHRIKRUSHNA KOLHE	V	P	P	P	P	A	P
70	PRATHMESH PRABHAKARRAO JOSHI	V	P	P	P	P	P	P
71	RAHUL PRAMOD SHAMBHARKAR	V	P	P	P	P	P	P
72	RAHUL RAMESH TAYADE	V	P	P	P	P	P	P
73	SHUBHAM SUBHASH NASARE	V	P	P	P	P	P	P
74	SIDDHANT GAJANAN PATLE	V	P	P	P	A	P	P
75	SOURABH ASHOK WAHANE	V	P	P	P	P	P	P
76	UMESHWAR SURESH DEWASE	V	P	P	P	P	P	P
77	VAIBHAV KUMAR POHANKAR	V	P	A	P	P	P	P
78	VAIBHAV PARASRAM UGE	V	P	P	P	P	P	P

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Number of Participants/ Beneficiaries year wise

S.No	Semester / year	Number of Participants
1	7^{th} sem/4^{th} year	43
2	5^{th} sem/ 3^{rd} year	35
	Total	**78**

Students Feed Back:

From the overall responses received from the students at the end of the course, it has been observed that a majority of students are satisfied and have recommended for similar type of Add-on Courses to be arranged in future as it was very useful to them. Course material of Add-on course has been distributed to all participants.

Feedback on:
Add-on Course: ARM Processor architecture and Programming

Google Feedback form Sample:

Feedback on Certificate course

Dear participants,

We shall very much appreciate you if you fill up this feedback form. It will help us to improve the Institute further and give better engineers in future for the growth of the nation. Tick the number that best describes your level of satisfaction at each question: 1 - Poor , 2 - average , 3 - Good, 4 - Very Good, 5 - Excellent .

Course Coordinator:

Prof. Shubhangi Chadinkar
Assistant Professor
Department of CSE, GNIET, Nagpur

* Required

1. **What is your Branch? ***
Mark only one oval.
- ◯ CSE
- ◯ Other

2. **Name of Certificate Course ***
_____

3. **Has the teacher covered full Syllabus prescribed in Certificate Course? ***
Mark only one oval.
- ◯ YES
- ◯ No

4. **Are you satisfied with the content? ***
Mark only one oval.
- ◯ YES
- ◯ No

5. **How do you rate technical Content in syllabus?(5-Excellent, 4-Very Good, 3-Good, 2- Average, 1-Bellow Average): ***
Mark only one oval.

1	2	3	4	5
◯	◯	◯	◯	◯

6. **How do you rate technical knowledge of Teacher? ***
Mark only one oval.

1	2	3	4	5
◯	◯	◯	◯	◯

https://docs.google.com/forms/d/1d2GiB_8WtmiQs3q8M_FE-lqsv_qZiJz_vLufkFichZI/edit

7. **How do you rate cooperation from teacher to Solve individual doubts?** *
Mark only one oval.

1	2	3	4	5
◯	◯	◯	◯	◯

8. **How do you rate Practical Session?** *
Mark only one oval.

1	2	3	4	5
◯	◯	◯	◯	◯

9. **How do you rate Internet Facility?** *
Mark only one oval.

1	2	3	4	5
◯	◯	◯	◯	◯

10. **How do you rate Library Facility?** *
Mark only one oval.

1	2	3	4	5
◯	◯	◯	◯	◯

11. **How do you rate on overall effectiveness of certificate course?** *
Mark only one oval.

1	2	3	4	5
◯	◯	◯	◯	◯

12. **Suggestions if any.**

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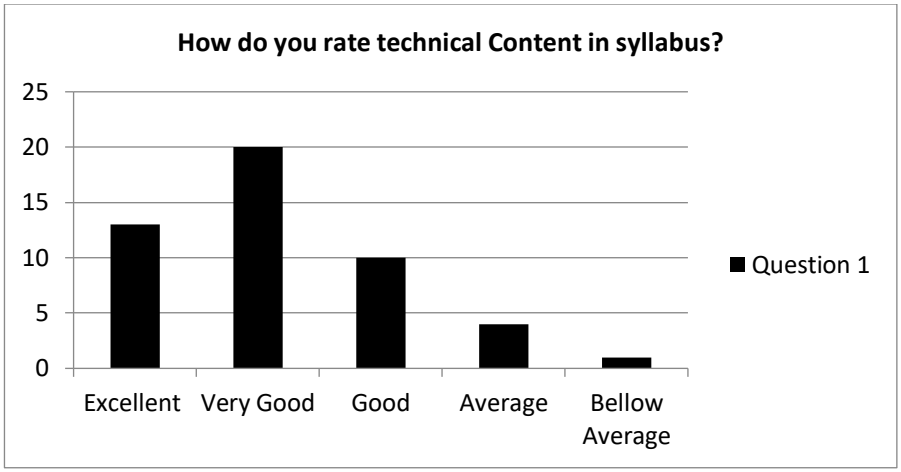
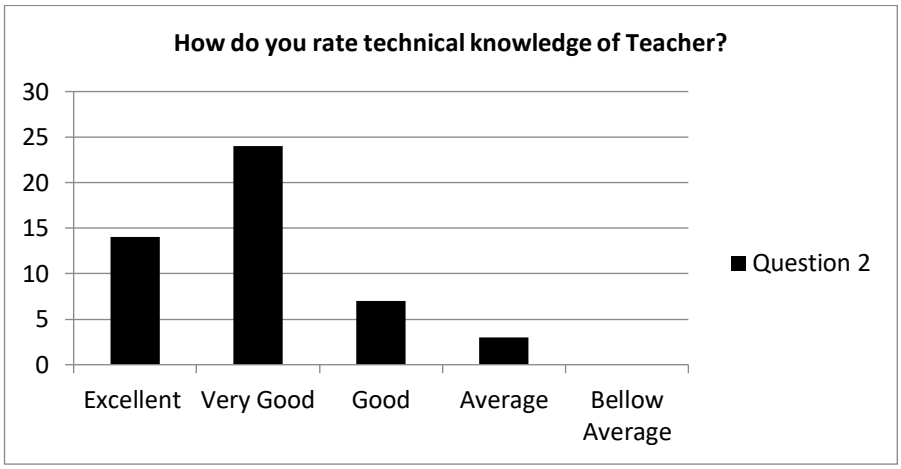
Feedback taken using Google form and analysis done on rating given





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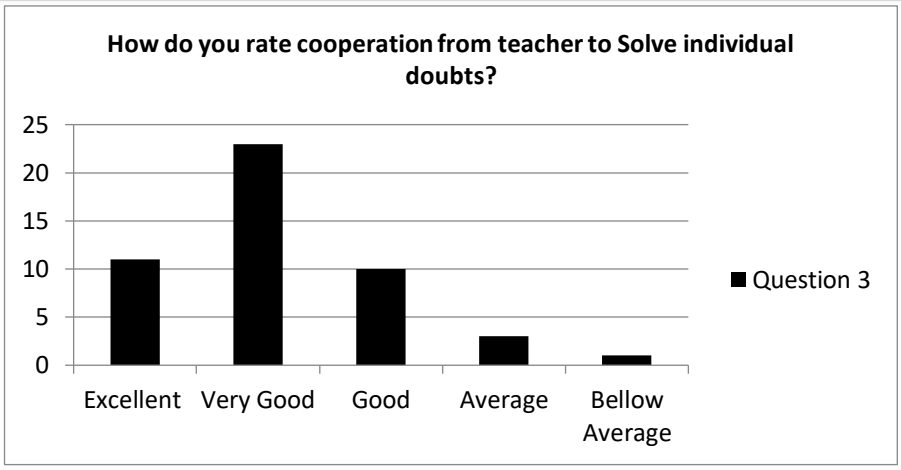

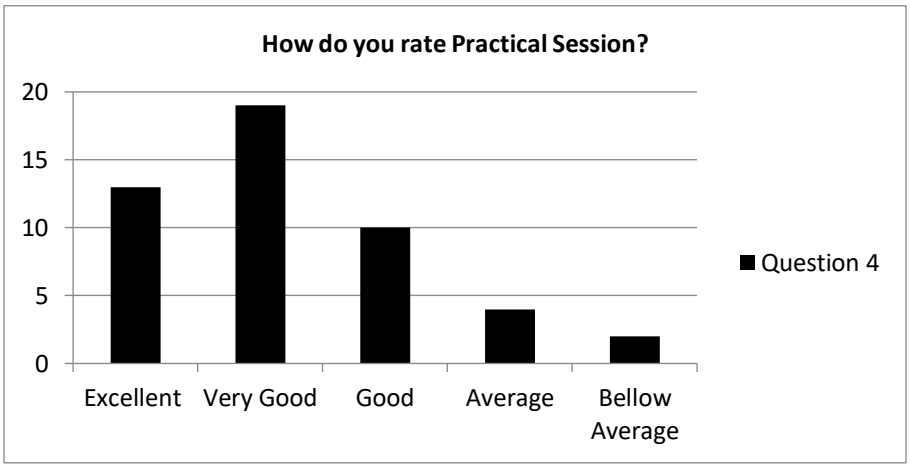

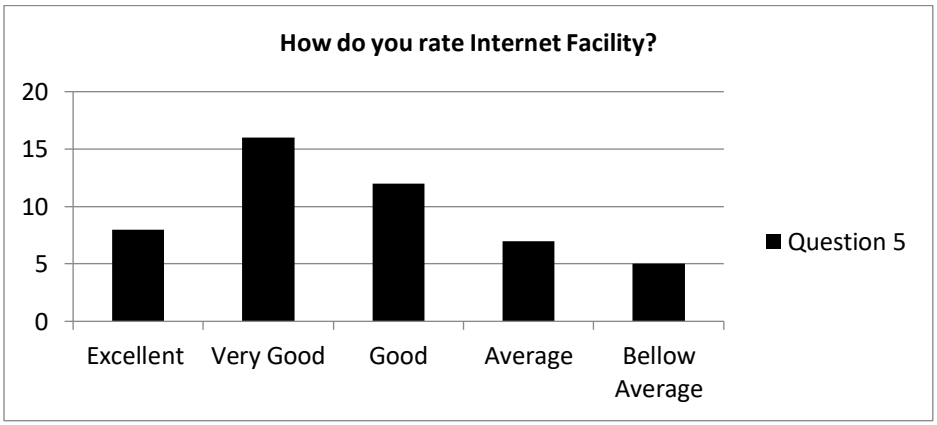

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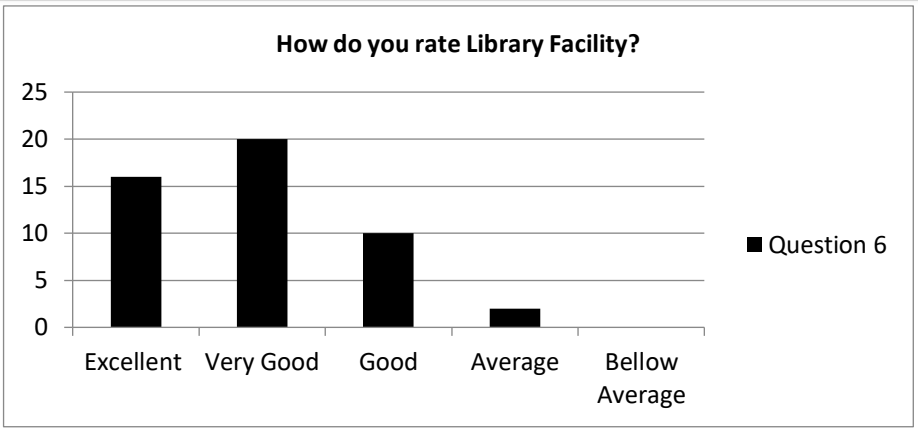

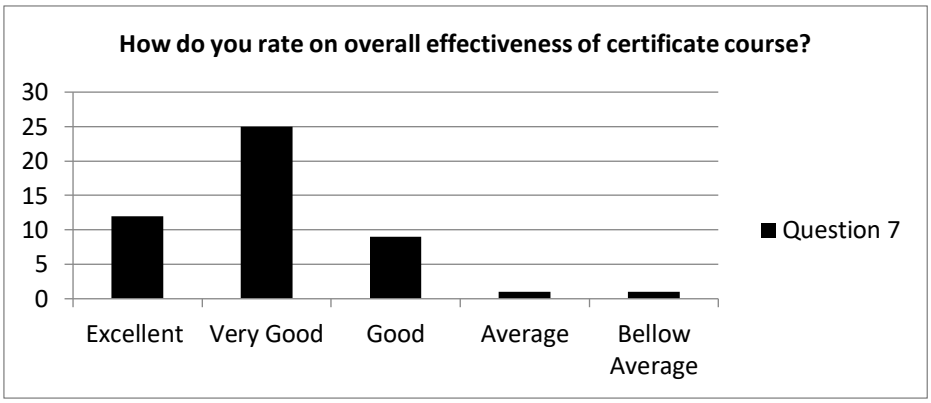

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MCQ TEST ON
ARM Processor architecture and Programming
Question Paper

Note: Attempt all 30 Questions. Each Question carry 01 Mark (MAX 30 Marks). Max Time – 01 Hr. Tick the correct answer. No negative marking.

1). What is the standard form of ARM?

- (•) Advanced RISC Machine
- ( ) Automatic RISC Machine
- ( ) Automatic RISC Motor
- ( ) None of the above

2). How many instruction sets does ARM have?

- ( ) One
- ( ) Two
- ( ) Three
- ( ) Four

3). How many registers does ARM have?

- ( ) Four
- ( ) Eight
- ( ) Sixteen
- ( ) Thirty-seven

4). How many operating modes does ARM have?

- ( ) Four
- ( ) Seven
- ( ) Sixteen
- ( ) Thirty-seven

5). When the processor is executing in ARM state, then all instructions are _____ wide

- 8-bits
- 16-bits
- 32-bits
- 64-bits

6). What is the standard form of LSL?

- Logical Shift Left
- Left Shift Logical
- Logical Shift Logic
- None of the above

7). How many arithmetic shift operators does ARM have?

- One
- Two
- Three
- Four

8). How many types of load instructions are there?

- One
- Two
- Three
- Four

9). Which one of the following architecture has fewer number instructions?

- RISC
- CISC
- Both a and b
- None of the above

10). In which one of the following architecture the instructions are simple?

- RISC
- CISC
- Both a and b
- None of the above

11). The RISC processors execute _____ of instructions per second

- Hundred
- Thousands
- Millions
- None of the above

12). Which one of the following is a CISC architecture?

- ARM7
- 8051
- Both a and b
- None of the above

13). When the processor is executing in thumb state, then all instructions are _____ wide

- 8-bits
- 16-bits
- 32-bits
- 64-bits

14). Which one of the following executes all instructions in one cycle?

- ARM7
- 8051
- Both a and b

- None of the above

15). What is the standard form of LSR?

- Logical Shift Right
- Left Shift Right
- Local Shift Right
- None of the above

16). Which one of the following is the 8-bit controller?

- ARM7
- 8051
- Both a and b
- None of the above

17). The ARM instruction set architecture divided into _____ classes of instructions

- Two
- Four
- Six
- Eight

18). What is the standard form of LPAE?

- Large Page Address Extensions
- Large Page Automatic Extensions
- Large Page ARM Extensions
- None of the above

19). What is the standard form of ASR?

- Automatic Shift Right
- ARM Shift Right

- Arithmetic Shift Right
- None of the above

20). What is the standard form of ADK?

- ARM Design Kit
- Advanced Design Kit
- AMBA Design Kit
- None of the above

21). The typical clock rate of ARM9E is around _____

- 100 MHZ (130nm)
- 335 MHZ (130nm)
- 266 MHZ (130nm)
- None of the above

--

22). The advanced RISC machine processors supports _____ bytes

- 8-bit signed & unsigned
- 16-bit signed & unsigned
- 32-bit signed & unsigned
- All of the above

23). What is the standard form of CPSR?

- Current Program Register
- Current Program Status Register
- Complex Program Register
- None of the above

24). What is the standard form of CPI?

- Cycles Per Instructions

- Complex Cycles Per Instructions
- Current Per Instructions
- None of the above

25). What is the standard form of MMU?

- Memory Management Unit
- Map Management Unit
- Management Memory Unit
- None of the above

26). The directly executed byte codes, emulated byte codes, and undefined byte codes are the _____ byte codes

- Java
- Jazelle
- ARM
- None of the above

--

27). The typical clock rate of ARM11 is around _____

- 100 MHZ (130nm)
- 335 MHZ (130nm)
- 266 MHZ (130nm)
- None of the above

28). What is the standard form of CLZ?

- Count Leading Zeros
- Complex Leading Zeros
- Control Leading Zeros
- None of the above

29). The clock speed of ARM7TDMI is around _____

- 10-20 MHz
- 20-30 MHz
- 50-60 MHz
- 80-100 MHz

30). The program status register combines _____ registers

- APSR
- IPSR
- EPSR
- All of the above

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Add – on Course

“Microcontroller MCS-51 Architecture and Programming”

Organized By: Department of Computer Science &Engineering

(2022-2023)

Report

On

Add-on Course

Microcontroller MCS-51 architecture and Programming

Organized By: Department of Computer Science and Engineering

(2022-2023)

Dates from: 27-02-2023 to 04-03-2023

(06 Days, 05 Hrs per day, total 30 Hrs.)

(Timing: 10:00 am to 1:00 pm & 2:30 pm to 4:30 pm)

Sr.No	Course Coordinator	Resource person
1	Prof. Shubhangi Ghadinkar Assistant Professor Department of CSE, GNIET, Nagpur	Dr. Balram Timande Associate Professor, Department of ETE, GNIET, Nagpur. Ph. 9179985939 Email: balramtimande@gmail.com

Report Prepared by:

Prof. Shubhangi Ghadinkar

Submitted to

IQAC, GNIET, NAGPUR

Principal
Guru Nanak Institute of Engineering & Technology Nagpur- 441501

Principal
Guru Nanak Institute of Engineering & Technology Nagpur- 441501

Brief Report On

Add-on Course: Microcontroller MCS-51 architecture and Programming.

The one week Add-on course on **Microcontroller MCS-51 architecture and Programming** was organized by **Department of Computer Science and Engineering** for Students of B. Tech. 4th and 6th (CBCS) CSE. The Add-on course was organized for the period of 30 hours starting from date: **27-02-2023 to 04-03-2023.** Timing for the classes and Hands on was 10:00 am to 1:00 pm & 2:30 pm to 4:30 pm. 05 hours per day (Total Course hours = 30 Hrs). The Add-on course was fully free of cost. Total 80 students have participated and completed Add-on course successfully. The resource person for the whole course was Dr**. Balram Timande,** balramtimande@gmail.com **, 9179985939**

Course Objective and Outcomes:

Course Objective:

- Study the architecture and addressing modes of 8051.
- Impart knowledge about assembly language programs of 8051.
- Helps to understand the importance of different peripheral devices & their interfacing to 8051.
- Impart knowledge of different types of external interfaces including LEDS, LCD, Keypad Matrix, Switches & Seven segment display.

Course Outcomes: after completion of the course students will be able to;

CO-1: Describe each functional blocks of internal architecture of 8051 Microcontroller.

CO-2: Analyze problems and find solution using assembly language programming and embedded C programming.

CO-3: Demonstrate architecture and functions of different peripherals.

CO-4: Design and develops different types of embedded systems using Microcontroller 8051 and Peripherals.

Course Mapping with POs and PSOs:

PO & PSO->	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2
CO-1	2	2	1	1	0	1	1	0	2	3	0	2	2	2
CO-2	2	3	2	3	0	1	0	0	2	2	0	2	3	2
CO-3	2	2	2	3	3	1	0	0	3	2	0	2	3	2
CO-4	3	1	3	3	0	3	3	2	2	3	3	2	2	3
CO-5	3	2	3	2	3	3	3	2	3	3	3	2	2	3
Avg POs	2.2	2.1	2.2	2.4	1.2	1.8	1.4	2.0	2.4	2.6	1.2	2	2.4	2.4
% PO/PSO attainment	66.7 %	73.3 %	73.3 %	80.0 %	40.0 %	60.0 %	46.7 %	40.0%	80.0%	86.7%	40.0%	66.7%	80.0%	80.0%

PO-1	**Engineering knowledge**	Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
PO-2	**Problem analysis**	Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
PO-3	**Design/ development of solutions**	Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
PO-4	**Conduct investigations of complex problems**	Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
PO-5	**Modern tool usage**	Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

PO-6	**The engineer and society**	Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
PO-7	**Environment and sustainability**	Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
PO-8	**Ethics**	Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
PO-9	**Individual and teamwork**	Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
PO-10	**Communication**	Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
PO-11	**Project management and finance**	Demonstrateknowledgeandunderstandingoftheengineeringandmanagement principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
PO-12	**Life-long learning**	Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

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Dahegaon, Kalmeshwar Road, Nagpur-441 501
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Department of Computer Science and Engineering

Date: 20-02-2023

-: Notice:-

For the skill development and quality engineering education Internal Quality Assurance Cell (IQAC) have suggested to organize Add-on courses based on new technologies for minimum of 30Hrs. With this reference, Department of Computer Science and Engineering has decided to organize 30 hrs Add-on course on: ***"Microcontroller MCS-51 architecture and Programming."*** from date 27-02-2023 to 04-03-2023. The Add-on course is free of cost for the students of CSE departments.

Resource person details:
Dr. Balram Timande
Associate Professor, Department of ETE, GNIET, Nagpur
Ph. 9179985939
Email: balramtimande@gmail.com

Course Coordinator:

Prof. Shubhangi Ghadinkar
Assistant Professor
Department of CSE, GNIET, Nagpur

HOD (CSE)

: For circulation among Students.
Cc: 1. Principal (for Information only)
2. Vice Principal (for Information only)
3. IQAC.

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Dahegaon, Kalmeshwar Road, Nagpur-441 501

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Department of Computer Science and Engineering

Date: 20-02-2023

-:Notice:-

All the students of 4th, 6th & 8th semester are hereby informed that department of CSE has decided to conduct the Add-on course for 30 Hours from Date: 27-02-2023 to 04-03-2023. All the interested students are requested to register their name to respective class teachers. Note that the Add-on course is free of cost for all the registered students of the departments. To get the certificate (Soft Copy) of Add-on course attendance in Add-on course should not be less than 80%.

Name of the Add-on course: ***Microcontroller MCS-51 architecture and Programming.***
Resource person details:

Resource person details:
Dr. Balram Timande
Associate Professor, Department of ETE, GNIET, Nagpur
Ph. 9179985939
Email: balramtimande@gmail.com

HOD (CSE)

: For circulation among Students.

Cc:
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2. Vice Principal (for Information only)
3. IQAC.
4. For Circulation among students
5. Notice Board.

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Course Content:

- **Embedded Systems:** Introduction to an Embedded Systems, Defining the Embedded System, Real Life Examples of Embedded Systems, and Basics of Developing for Embedded Systems, Embedded design challenges and development issues.

- 8051 Processor Architecture and Instruction Set: Registers of 8051, Inbuilt RAM, Register banks, stack, on-chip and external program code memory ROM, power reset and clocking circuits, I/O port structure, Addressing modes, Instruction set and programming.

- Counter/Timer and Interrupts of 8051: Introduction, Registers of timer/counter, Different modes of timer/counter, Timer/counter programming, Interrupt Vs Polling, Types of interrupts and vector addresses, register used for interrupts initialization, programming of external interrupts, Timer interrupts.

- Asynchronous Serial Communication and Programming: Introduction to serial communication, Data Programming, RS232 standard, Max 232/233 Driver.

- Interfacing with 8051: Interfacing and programming of: ADC (0804,0808/0809,0848) & DAC (0808), stepper motor , 4x4 keyboard matrix, Relays, LED and Seven segment display, LCD, Interfacing(only) of different types of Memory, Address decoding techniques

Schedule of Classes and Hands-on:

Daily Schedule:

DURATION from Date: 27-02-2023 to 04-03-2023

Sr. No.	Day/Date	Topic
1	Day 1	Introduction to Embedded System
		Architecture of 8051
		Pin diagram Of 8051
2	Day 2	Register function and RAM detail
		Instruction set and programming
		Instruction set and programming

3	Day 3	Instruction set and programming
		Programming using embedded C
		Timer function, different mode of operation and application
4	Day 4	Timer programming Using C
		UART function in 8051, Serial communication application
		Serial programming using C
5	Day 5	Interrupt Application and programming using C
		Memory and IO interfacing.
		Interfacing and programming of: ADC 0808/0809
6	Day 6	Interfacing and programming of: DAC 0808
		stepper motor , 4x4 keyboard matrix
		Relays, LED and Seven segment display, LCD Interfacing

Glimpses:

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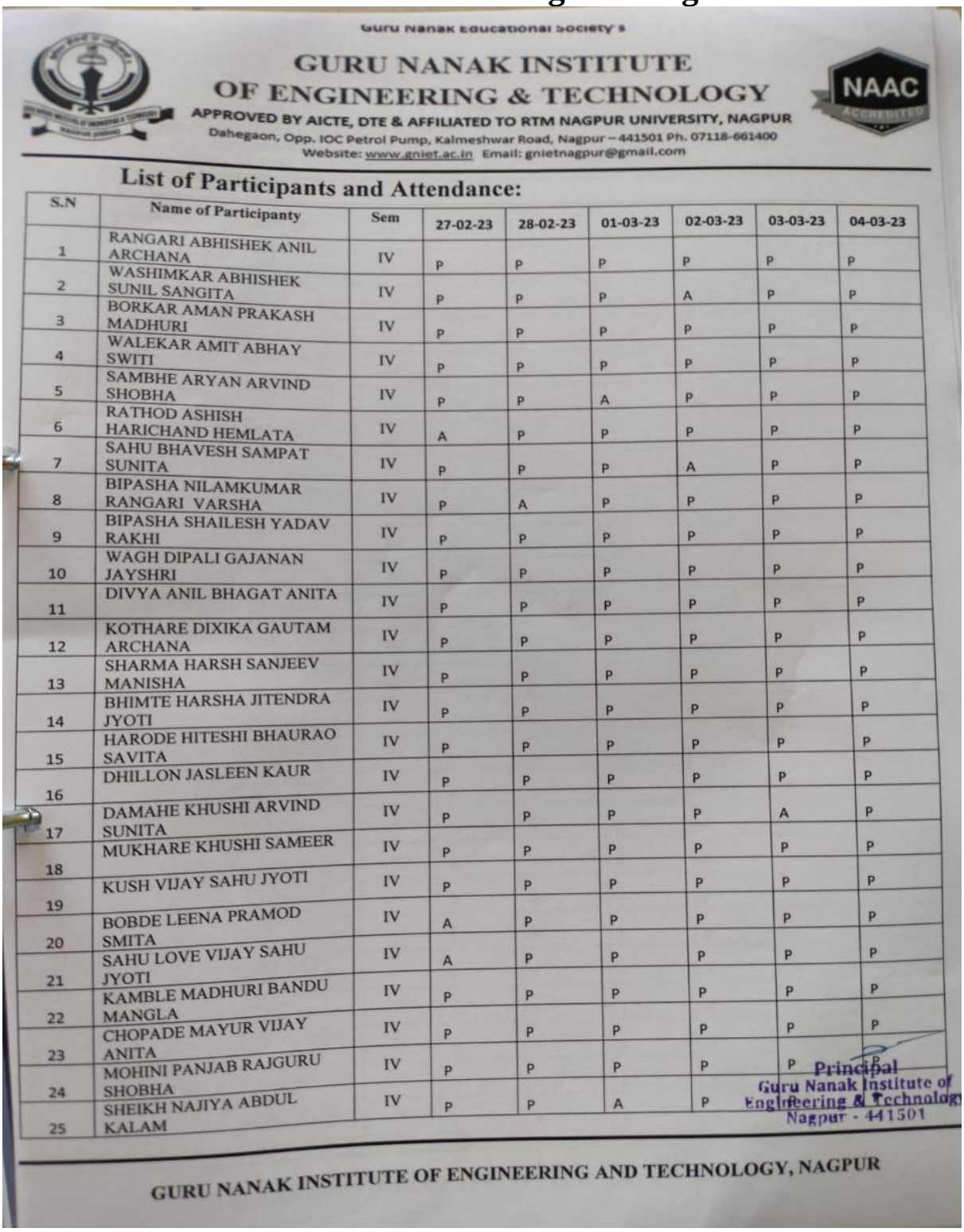
Department CSE

List of Participants and Attendance for Microcontroller MCS-51 architecture and Programming:



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Dahegaon, Opp. IOC Petrol Pump, Kalmeshwar Road, Nagpur – 441501 Ph. 07118-661400
Website: www.gniet.ac.in Email: gnietnagpur@gmail.com

List of Participants and Attendance:

S.N	Name of Participanty	Sem	27-02-23	28-02-23	01-03-23	02-03-23	03-03-23	04-03-23
1	RANGARI ABHISHEK ANIL ARCHANA	IV	P	P	P	P	P	P
2	WASHIMKAR ABHISHEK SUNIL SANGITA	IV	P	P	P	A	P	P
3	BORKAR AMAN PRAKASH MADHURI	IV	P	P	P	P	P	P
4	WALEKAR AMIT ABHAY SWITI	IV	P	P	P	P	P	P
5	SAMBHE ARYAN ARVIND SHOBHA	IV	P	P	A	P	P	P
6	RATHOD ASHISH HARICHAND HEMLATA	IV	A	P	P	P	P	P
7	SAHU BHAVESH SAMPAT SUNITA	IV	P	P	P	A	P	P
8	BIPASHA NILAMKUMAR RANGARI VARSHA	IV	P	A	P	P	P	P
9	BIPASHA SHAILESH YADAV RAKHI	IV	P	P	P	P	P	P
10	WAGH DIPALI GAJANAN JAYSHRI	IV	P	P	P	P	P	P
11	DIVYA ANIL BHAGAT ANITA	IV	P	P	P	P	P	P
12	KOTHARE DIXIKA GAUTAM ARCHANA	IV	P	P	P	P	P	P
13	SHARMA HARSH SANJEEV MANISHA	IV	P	P	P	P	P	P
14	BHIMTE HARSHA JITENDRA JYOTI	IV	P	P	P	P	P	P
15	HARODE HITESHI BHAURAO SAVITA	IV	P	P	P	P	P	P
16	DHILLON JASLEEN KAUR	IV	P	P	P	P	P	P
17	DAMAHE KHUSHI ARVIND SUNITA	IV	P	P	P	P	A	P
18	MUKHARE KHUSHI SAMEER	IV	P	P	P	P	P	P
19	KUSH VIJAY SAHU JYOTI	IV	P	P	P	P	P	P
20	BOBDE LEENA PRAMOD SMITA	IV	A	P	P	P	P	P
21	SAHU LOVE VIJAY SAHU JYOTI	IV	A	P	P	P	P	P
22	KAMBLE MADHURI BANDU MANGLA	IV	P	P	P	P	P	P
23	CHOPADE MAYUR VIJAY ANITA	IV	P	P	P	P	P	P
24	MOHINI PANJAB RAJGURU SHOBHA	IV	P	P	P	P	P	P
25	SHEIKH NAJIYA ABDUL KALAM	IV	P	P	A	P	P	P

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26	UTTARWAR OM VIJAY SAVITA	IV	P	P	P	P	P	P
27	POOJA MAHESH SAKHARE SAMPDA	IV	P	P	P	P	P	P
28	DEOSARKAR PRAJKTA NAMDEVRAO SHOBHA	IV	P	P	P	P	P	P
29	BAWANKAR PRAJWAL ARVIND SMITA	IV	P	P	P	P	P	P
30	FULZELE PRAJWAL CHAITRAM KUSUM	IV	P	P	P	P	P	P
31	PRATHAM SUDAM WASNIK SUNITA	IV	P	P	P	P	P	P
32	BHINGARE PRATHMESH SHYAM	IV	P	P	P	P	P	P
33	USARE PRERNA RAJESH MANISHA	IV	P	P	P	P	P	P
34	CHAVHAN PRIYANKA SURESH ANITA	IV	P	P	P	P	P	P
35	WANVE RAJJU RAMRATAN SUNITA	IV	P	P	P	P	P	P
36	TEMBHARE RAVISHI RAJENDRA	IV	P	P	P	P	P	P
37	WANKHADE RITESH SUNIL SAVITA	IV	P	P	P	P	P	P
38	BANG RIYA SHASHIKANT SUNITA	IV	P	P	P	P	P	P
39	KHARPURIYE ROHIT NATTHUJI ASHA	IV	P	P	P	P	P	P
40	QUERESHI SAIFUDDIN ABID ARJUMAND	IV	P	P	P	P	P	P
41	PURAMSHETTIWAR SAMIKSHA VIJAY NIKHITA	IV	P	P	P	P	P	P
42	GHARDE SATISH PANCHAM MANISH	IV	P	P	P	P	P	P
43	DAD SHREERAM GAJANAN ALKA	IV	P	P	P	P	P	P
44	RAMBHAD SHREYASH YASHWANT BHARTI	IV	P	P	P	P	P	P
45	DAD SHRIKANT JUGALKISHOR DURGA	IV	P	P	P	P	P	P
46	JAGTAP SNEHA KACHARU YASHODA	IV	P	P	P	P	P	P
47	DHOTE SURAJ DILIP RANJANA	IV	P	P	P	P	P	P
48	MATE SURAJ VINOD MATE RAKSHA	IV	P	P	P	P	P	P
49	KSHIRSAGAR TANAY RAVINDRA	IV	P	P	P	P	P	P
50	POHARE TEJASKUMAR NITIN NIKHITA	IV	P	P	P	P	P	P
51	KAWARE TRUSHNA RAMDAS MANDA	IV	P	P	P	P	P	P
52	VAISHNAVI RAJESH CHUTE VIJU	IV	P	P	P	P	P	P

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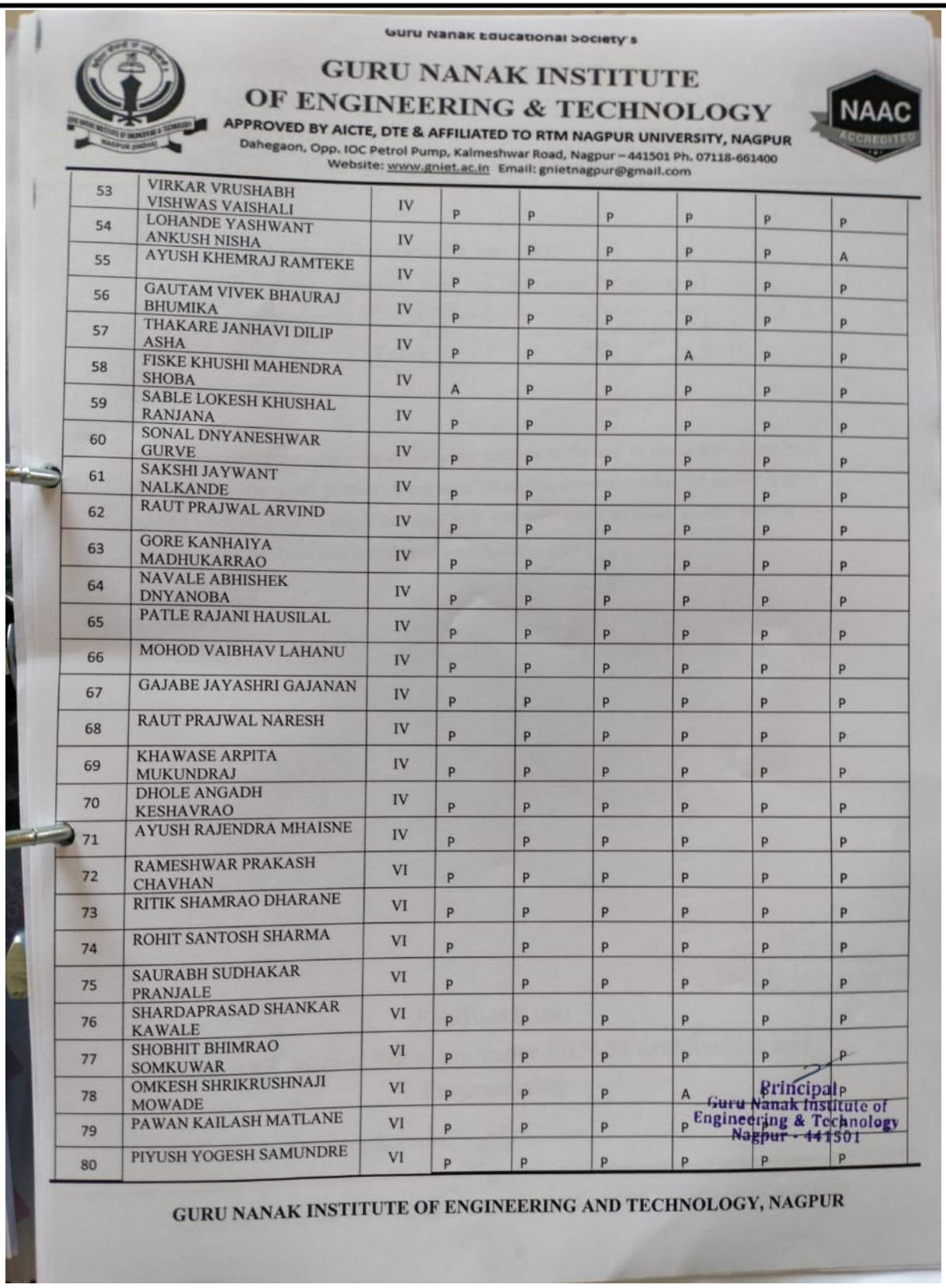

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53	VIRKAR VRUSHABH VISHWAS VAISHALI	IV	P	P	P	P	P	P
54	LOHANDE YASHWANT ANKUSH NISHA	IV	P	P	P	P	P	A
55	AYUSH KHEMRAJ RAMTEKE	IV	P	P	P	P	P	P
56	GAUTAM VIVEK BHAURAJ BHUMIKA	IV	P	P	P	P	P	P
57	THAKARE JANHAVI DILIP ASHA	IV	P	P	P	A	P	P
58	FISKE KHUSHI MAHENDRA SHOBA	IV	A	P	P	P	P	P
59	SABLE LOKESH KHUSHAL RANJANA	IV	P	P	P	P	P	P
60	SONAL DNYANESHWAR GURVE	IV	P	P	P	P	P	P
61	SAKSHI JAYWANT NALKANDE	IV	P	P	P	P	P	P
62	RAUT PRAJWAL ARVIND	IV	P	P	P	P	P	P
63	GORE KANHAIYA MADHUKARRAO	IV	P	P	P	P	P	P
64	NAVALE ABHISHEK DNYANOBA	IV	P	P	P	P	P	P
65	PATLE RAJANI HAUSILAL	IV	P	P	P	P	P	P
66	MOHOD VAIBHAV LAHANU	IV	P	P	P	P	P	P
67	GAJABE JAYASHRI GAJANAN	IV	P	P	P	P	P	P
68	RAUT PRAJWAL NARESH	IV	P	P	P	P	P	P
69	KHAWASE ARPITA MUKUNDRAJ	IV	P	P	P	P	P	P
70	DHOLE ANGADH KESHAVRAO	IV	P	P	P	P	P	P
71	AYUSH RAJENDRA MHAISNE	IV	P	P	P	P	P	P
72	RAMESHWAR PRAKASH CHAVHAN	VI	P	P	P	P	P	P
73	RITIK SHAMRAO DHARANE	VI	P	P	P	P	P	P
74	ROHIT SANTOSH SHARMA	VI	P	P	P	P	P	P
75	SAURABH SUDHAKAR PRANJALE	VI	P	P	P	P	P	P
76	SHARDAPRASAD SHANKAR KAWALE	VI	P	P	P	P	P	P
77	SHOBHIT BHIMRAO SOMKUWAR	VI	P	P	P	P	P	P
78	OMKESH SHRIKRUSHNAJI MOWADE	VI	P	P	P	A	P	P
79	PAWAN KAILASH MATLANE	VI	P	P	P	P	P	P
80	PIYUSH YOGESH SAMUNDRE	VI	P	P	P	P	P	P

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Number of Participants/ Beneficiaries year wise

S.No	Semester / Year	Number of Participants
1	4th sem/2nd year	71
2	6th Sem/3rd year	09
	Total	**80**

Students Feed Back:

From the overall responses received from the students at the end of the course, it has been observed that a majority of students are satisfied and have recommended for similar type of Add-on Courses to be arranged in future as it was very useful to them. Course material of Add-on course has been distributed to all participants.

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Feedback on:

Add-on Course: Microcontroller MCS-51 architecture and Programming

Google Feedback from Sample:

Feedback on Certificate course

Dear participants,

We shall very much appreciate you if you fill up this feedback form. It will help us to improve the Institute further and give better engineers in future for the growth of the nation. Tick the number that best describes your level of satisfaction at each question: 1 - Poor , 2 - average , 3 - Good, 4 - Very Good, 5 - Excellent .

Course Coordinator:

Prof. Shubhangi Chadinkar
Assistant Professor
Department of CSE, GNIET, Nagpur

* Required

1. **What is your Branch? ***
   Mark only one oval.
   - CSE
   - Other

2. **Name of Certificate Course ***

3. **Has the teacher covered full Syllabus prescribed in Certificate Course? ***
   Mark only one oval.
   - YES
   - No

4. **Are you satisfied with the content? ***
   Mark only one oval.
   - YES
   - No

5. **How do you rate technical Content in syllabus?(5-Excellent, 4-Very Good, 3-Good, 2- Average, 1-Bellow Average): ***
   Mark only one oval.

1	2	3	4	5
◯	◯	◯	◯	◯

6. **How do you rate technical knowledge of Teacher? ***
   Mark only one oval.

1	2	3	4	5
◯	◯	◯	◯	◯

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7. **How do you rate cooperation from teacher to Solve individual doubts?** *
Mark only one oval.

1	2	3	4	5
◯	◯	◯	◯	◯

8. **How do you rate Practical Session?** *
Mark only one oval.

1	2	3	4	5
◯	◯	◯	◯	◯

9. **How do you rate Internet Facility?** *
Mark only one oval.

1	2	3	4	5
◯	◯	◯	◯	◯

10. **How do you rate Library Facility?** *
Mark only one oval.

1	2	3	4	5
◯	◯	◯	◯	◯

11. **How do you rate on overall effectiveness of certificate course?** *
Mark only one oval.

1	2	3	4	5
◯	◯	◯	◯	◯

12. **Suggestions if any.**

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Google Forms

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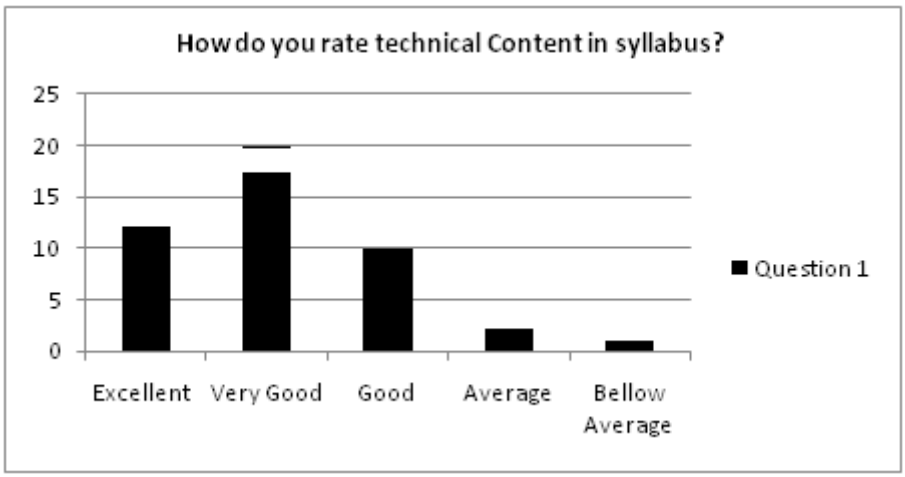
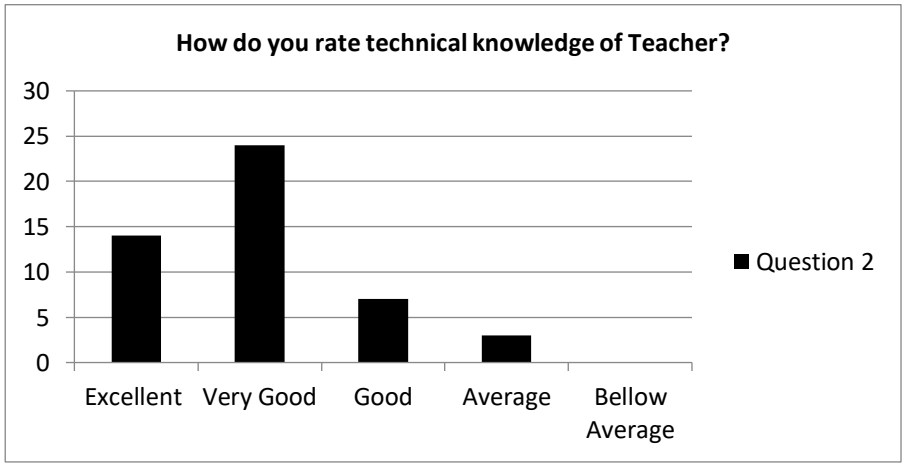
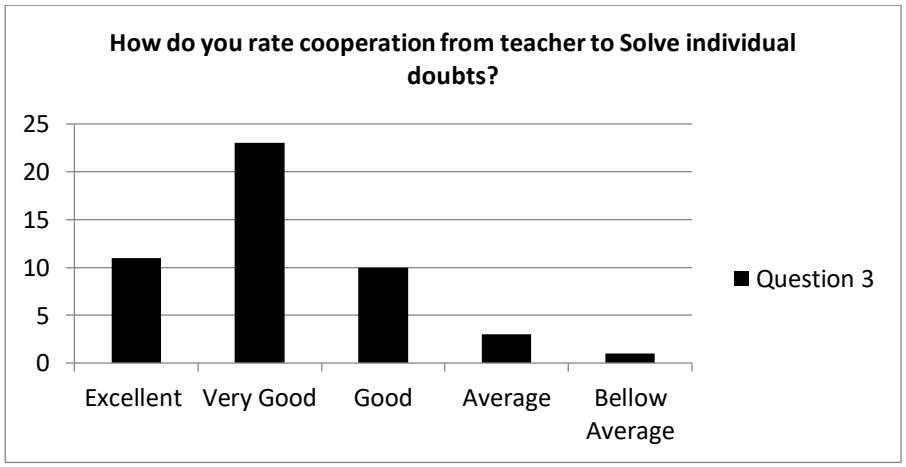
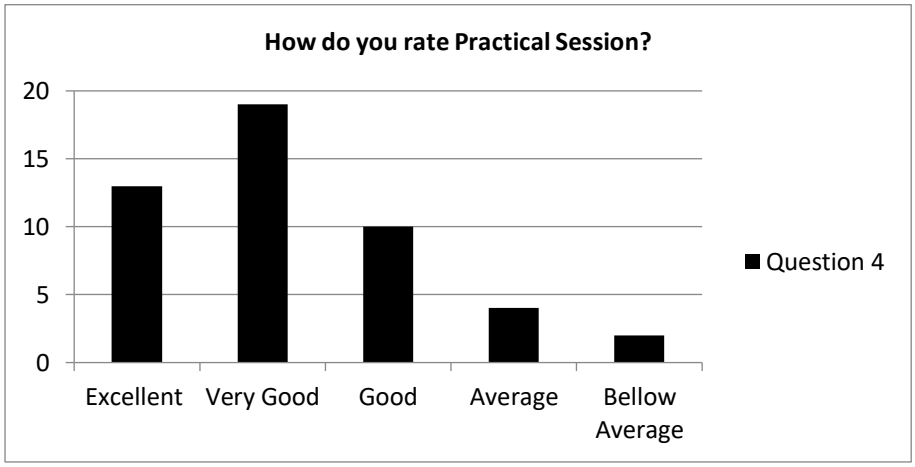
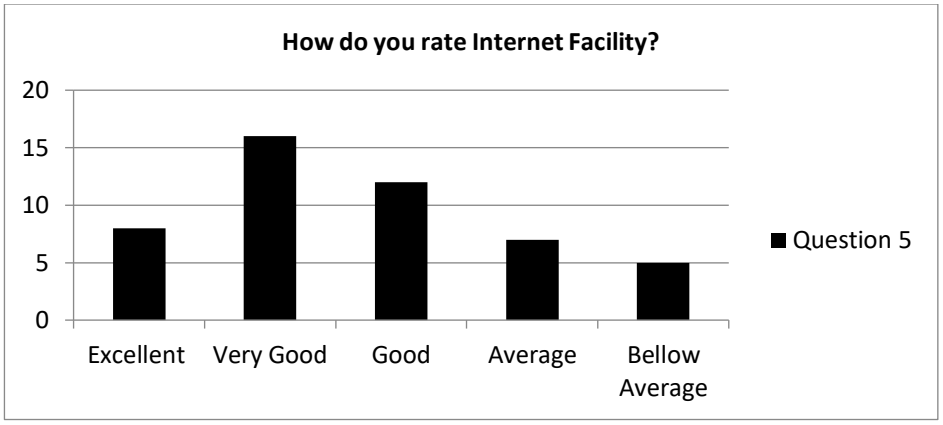
Feedback taken using Google form and analysis done on rating given

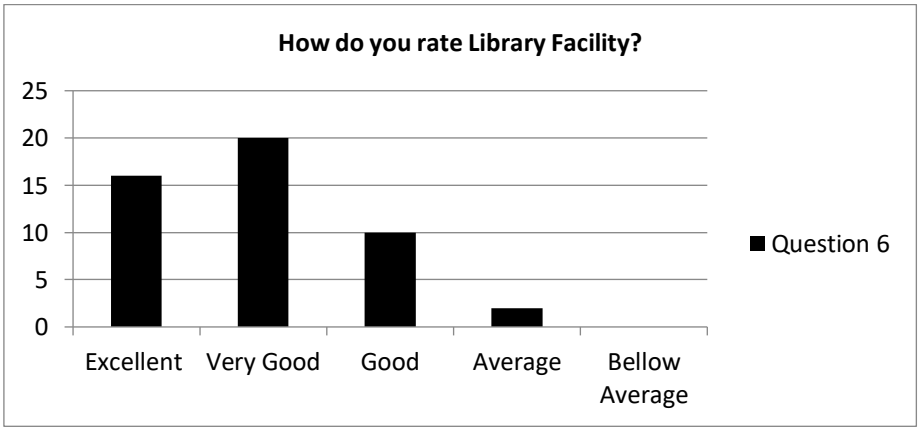












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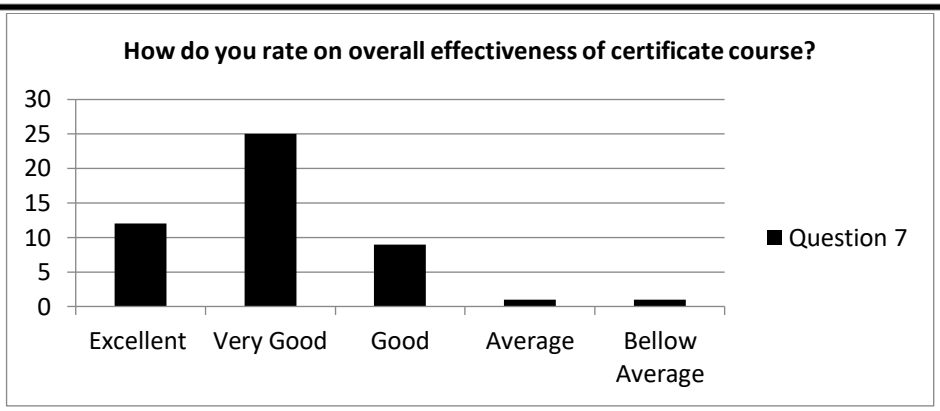

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MCQ TEST Question Paper on:

Microcontroller MCS-51 and Programming

Question Paper

Note: Attempt all 30 Questions. Each Question carry 01 Mark (MAX 30 Marks). Max Time – 01 Hr. Tick the correct answer. No negative marking.

1. The internal RAM memory of the 8051 is:
   32 bytes

   64 bytes

   128 bytes

   256 bytes
2. This program code will be executed continuously:
   STAT: MOV A, #01H
   JNZ STAT

   True

   False

3. The 8051 has _____ 16-bit counter/timers.

   1

   2

   3

   4

4. Data transfer from I/O to external data memory can only be done with the MOVX command.

   True

   False

5. The 8051 can handle _____ interrupt sources.
   3

   4

   5

   6

6. The special function registers are maintained in the next 128 locations after the general-purpose data storage and stack.

   True

   False

7. This statement will set the address of the bit to 1 (8051 Micro-controller):
   SETB 01H

   True

   False

8. MOV A, @ R1 will:

   copy R1 to the accumulator

   copy the accumulator to R1

   copy the contents of memory whose address is in R1 to the accumulator

   copy the accumulator to the contents of memory whose address is in R1

9. The following program will receive data from port 1, determine whether bit 2 is high, and then send the number FFH to port 3:
   READ: MOV A,P1
   ANL A,#2H
   CJNE A,#02H,READ
   MOV P3,#FFH

   True

   False

10. Device pins XTAL1 and XTAL2 for the 8051 are used for connections to an external oscillator or crystal.

    True

    False

11. When the 8051 is reset and the $\overline{EA}$ line is HIGH, the program counter points to the first program instruction in the:

    internal code memory

    external code memory

internal data memory

external data memory

12. An alternate function of port pin P3.4 in the 8051 is:

    Timer 0

    Timer 1

    interrupt 0

    interrupt 1

13. Both registers TL0 and TL1 are needed to start Timer 0.

    True

    False

14. The I/O ports that are used as address and data for external memory are:

    ports 1 and 2

    ports 1 and 3

    ports 0 and 2

    ports 0 and 3

15. The last 96 locations in the internal data memory are reserved for general-purpose data storage and stack.

    True

    False

16. Microcontrollers often have:

    CPUs

    RAM

    ROM

    all of the above

17. The 8051 has _____ parallel I/O ports.

    2

    3

    4

5

18. The total external data memory that can be interfaced to the 8051 is:

    32K

    64K

    128K

    256K

19. Which of the following instructions will load the value 35H into the high byte of timer 0?

    MOV TH0, #35H

    MOV TH0, 35H

    MOV T0, #35H

    MOV T0, 35H

20. Bit-addressable memory locations are:

    10H through 1FH

    20H through 2FH

    30H through 3FH

    40H through 4FH

21. The 8-bit address bus allows access to an address range of:

    0000 to FFFFH

    000 to FFFH

    00 to FFH

    0 to FH

22. The contents of the accumulator after this operation
    MOV A,#0BH
    ANL A,#2CH
    will be

    11010111

    11011010

    00001000

00101000

23. The start-conversion on the ADC0804 is done by using the:

$\overline{SC}$

CS line

INTR line

$V_{ref/2}$ line

24. Which of the following instructions will move the contents of register 3 to the accumulator?

MOV 3R, A

MOV R3, A

MOV A, R3

MOV A, 3R

25. Which of the following statements will add the accumulator and register 3?

ADD @R3, @A

ADD @A, R3

ADD R3, A

ADD A, R3

26. The special function registers can be referred to by their hex addresses or by their register names.

True

False

27. When the 8051 is reset and the EA line is LOW, the program counter points to the first program instruction in the:

internal code memory

external code memory

internal data memory

external data memory

28. To interface external EPROM memory for applications, it is necessary to demultiplex the address/data lines of the 8051.

True

False

29. This program code will read data from port 0 and write it to port 2, and it will stop looping when bit 3 of port 2 is set:

```
STAT:MOV A, PO
     MOV P2,A
     JNB P2.3, STAT
```

True

False

30. The I/O port that does not have a dual-purpose role is:

port 0

port 1

port 2

port 3

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Add – on Course

“Exploring the Applications of Artificial Intelligence in Wireless Technologies”

Organized By: Department of Electronics &Telecommunication Engineering

(2022-2023)

5daysOnline/Offline Course on

"EXPLORING THE APPLICATIONS OFARTIFICIALINTELLIGENCEIN WIRELESS TECHNOLOGIES"

REGISTRATION FORM

Name:

Branch:

Roll No.:

Contact No.:

Email Id:

Amount(Rs):

Signature of Applicant:

Date & Place:

Signature of Co-Ordinator

Signature & Seal of HoD ETC

PATRONS

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Dr. Sushama Telrandhe, HOD ETC GNIET, Nagpur

CO-ORDINATOR

Mr. Deepak Deshpande Asst. Prof.ETC Email Id: deepakdeshpande3d@gmail.com

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Ms. Soniya Milmile, Asst.Prof. ETC EmailId:soniyamilmile4@gmail.com

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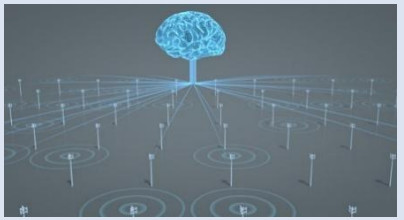
Department of Electronics & Telecommunication Engineering Guru Nanak Institute of Engg. &Tech. Kalmeshwar Road, Near Radha Swami Satsang, Dahegaon, Nagpur, Maharashtra 441501

GURU NANA INSTITUTE OF ENGINEERING&TECHNOLOGY,
NAGPUR

5daysOnline/Offline course on

"EXPLORING THE APPLICATIONS OF ARTIFICIAL INTELLIGENCE IN WIRELESS TECHNOLOGIES"

09/01/2023TO13/01/2023



Organized by

DEPARTMENTOF ELECTRONICS &TELECOMMUNICATIO N ENGINEERING, GNIET, NAGPUR

REGISTRATION:

Registration can be made in advance by remitting the registration fees indicated below along with the registration form. For registration contact Mr. Sandeep Buradkar, Asst. Prof.ETC.

REGISTRATION FEE:

Registration fees for students of GNIET are 500/-.

IMPORTANT DATES:

Registrationstarts: 26/12/2022
LastdatetoRegistration: 30/12/2022

SCHEDULE:

Duration of courseis30hrs, which will be covered in one week from 09/01/2023 to 13/01/2023.Thescheduleduring the course is divided into three sessions per day as follows:
Session I- 9.00 am to 11:45 p.m
Tea Break – 11:00 am to 11:45 am
Session II-11:45 am to 1:15 p.m
LunchBreak-1:15p.m.to2:00p.m.
Session III-2:00 p.m to 4:00 p.m

Mode:

Online/Offline

ELIGIBILITY

Students of **VI** Semester/IIIYr. Are eligible to attend the training.

IMPORTANT NOTE

✓All interested students should register before the last date of registration.
✓Students should join Google meet before the timeline key will be provided on the WhatsApp group.

ABOUTTHECOURSE

The course explores how Artificial Intelligence enhances wireless technology. Learn network optimization, security, and IoT resource allocation. Discover AI' sole in predictive maintenance, smart antennas, and 5G/6G networks. Perfect for those curious about the future of wireless communications.

The course explores how Artificial Intelligence enhances wireless tech. Learn network optimization, security, and more to create efficient, smart wireless systems. Perfect for tech enthusiasts aiming to shape the future of wireless communication.

OBJECTIVE

The objectives of course are:

1. Knowledge of AI's Role in Wireless Networks.

2. Familiaritywith5GandFutureWireless Technologies

OUR TRAINER

1. Dr. Sushama Telrandhe
HoD, ETC
2. Prof. Deepak Deshpande
Asst. prof. ETC
3. Prof. Sandeep Buradkar
Asst. Prof. ETC

TOPIC COVERAGE

- **UnderstandingAIanditsComponents**
- **Basics of Wireless Communication**
- **ConvergenceofAIandWireless:Opportunities and Challenges**
- **AI-basedNetworkOptimization**
- **Self-HealingNetworksUsingAI**
- **PredictiveMaintenanceinWirelessInfrastructure**
- **AI-basedNetworkOptimization**
- **Self-HealingNetworksUsingAI**
- **PredictiveMaintenanceinWirelessInfrastructure**
- **AI-driven 5G Network Development**
- **FutureWirelessTechnologiesandAI Integration**
- **EnablingUltra-ReliableLow-LatencyCommunication (URLLC) with AI**
- **ThreatDetectionandPreventionwithAI**
- **Biometric Wireless Security using AI**
- **EnsuringPrivacyinAI-poweredWirelessSystems**
- **EthicalIssuesinAIandWireless**
- **Responsible AI Practices**
- **EmergingTrendsandSpeculations on the Future.**
- **AI'sroleinthisera**

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Dahegaon, KalmeshwarRoad,Nagpur-441 501.
Department of Electronics & Telecommunication Engineering
Session (2022-23)

Date: 21/12/2022

NOTICE

All the Students of VI semester B.Tech. Of Electronics & Telecommunication Engineering are hereby informed that the department is organizing a short-term course on **"Exploring the Applications of Artificial Intelligence in Wireless Technologies"** from 09/01/2023to 13/01/2023. The schedule along with all other details of this course is given in the brochure. All interested students must register for the same from 26th to 30th Dec 2022. For registrations contact the course coordinator PROF. DEEPAK DESHPANDE**,** Electronics & Telecommunication Department.

Dr. Sushama Telrandhe
HOD ETC

Copy to:

1) Display on Notice Board
2) Circulation Among the Student's What's App group
3) Head T&P
4) Principal for Information

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Department of Electronics & Telecommunication Engineering

Session (2022-23)

COURSE ON EXPLORING THE APPLICATIONS OF ARTIFICIAL INTELLIGENCE IN WIRELESS TECHNOLOGIES

COURSE OVERVIEW:

The rapid advancement of artificial intelligence (AI) and wireless technologies has led to groundbreaking innovations in various fields. This comprehensive workshop spanning 30 to 35 hours will delve deep into the intersection of AI and wireless technologies, exploring their applications, challenges, and future potentials. Participants will gain a solid understanding of how AI is revolutionizing the wireless landscape, paving the way for smarter, more efficient, and interconnected systems.

COURSE OBJECTIVES

The objectives of the workshop are:

1. Understand the Basics: Lay the foundation by covering fundamental concepts of both artificial intelligence and wireless technologies.
2. AI in Wireless Networks: Explore how AI is transforming wireless networks, including optimization, self-healing networks, and predictive maintenance.
3. Wireless Sensing and IoT: Discuss the role of AI in enhancing wireless sensing applications and enabling the Internet of Things (IoT) ecosystem.
4. 5G and Beyond Examine how AI contributes to the development and optimization of 5G networks and upcoming wireless technologies.
5. Machine Learning in Signal Processing: Dive into the integration of machine learning techniques in wireless signal processing for enhanced performance.
6. AI-Driven Wireless Security: Explore how AI is being utilized to enhance wireless security mechanisms and threat detection.
7. Case Studies: Analyzereal-worldcasestudiesshowcasingsuccessfulAIimplementationinwirelessapplications across industries.
8. Future Trends: Explore emerging trends and speculate on the future of AI in wireless technologies.

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SYLLABUS

DURATIN: 30 HOURS

1. Introduction to AI and Wireless Technologies (3hours)

- Understanding AI and its Components
- Basics of Wireless Communication
- Convergence of AI and Wireless : Opportunities and Challenges

2. AI in Wireless Networks (3hours)

- AI-based Network Optimization
- Self-Healing Networks Using AI
- Predictive Maintenance in Wireless Infrastructure

3. Wireless Sensing and IoT (6hours)

- Enhancing Wireless Sensing with AI
- Role of AI in the IoT Ecosystem
- Case Studies: AI-Enabled IoT Applications

4. 5G and Beyond (6 hours)

- AI-driven5GNetworkDevelopment
- Future Wireless Technologies and AI Integration
- Enabling Ultra-Reliable Low-Latency Communication (URLLC) with AI

5. AI-Driven Wireless Security (6hours)

- Threat Detection and Prevention with AI
- Biometric Wireless Security using AI
- Ensuring Privacy in AI-powered Wireless Systems

6. Ethical Considerations and Future Trends (6hours)

- Ethical Issues in AI and Wireless
- Responsible AI Practices
- Emerging Trends and Speculations on the Future

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COURSE OUTCOME

After completing this course,

1. Solid Understanding of AI and Wireless Technologies:

- Participants will have a clear grasp of the fundamentals of artificial intelligence and wireless communication, enabling them to understand the convergence of these two domains.

2. Knowledge of AI's Role in Wireless Networks:

- Participants will comprehend how AI is used to optimize wireless networks, create self-healing systems, and enable predictive maintenance.

3. Insight into Wireless Sensing and IoT:

- Participants will understand how AI enhances wireless sensing and contributes to the development of the Internet of Things (IoT) ecosystem.

4. Familiarity with 5G and Future Wireless Technologies:

- Participants will be acquainted with how AI drives the development of 5G networks and beyond, including ultra-reliable low-latency communication (URLLC) technologies.

5. Understanding AI-Driven Wireless Security:

- Participants will learn about using AI for threat detection, biometric security, and privacy preservation in wireless systems.

6. Ethical Considerations in AI and Wireless:

- Participants will recognize the ethical implications of integrating AI in wireless technologies and will understand responsible practices.

7. Exposure to Real-World Case Studies:

- Participants will have analyzed case studies how casing successful AI implementations in wireless applications across various industries.

8. Enhanced Problem-Solving Skills:

- Participants will develop enhanced problem-solving skills by applying AI techniques to wireless scenarios.

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Department of Electronics & Telecommunication Engineering

Session (2022-23)

CERTIFICATE COURSE ON EXPLORING THE APPLICATIONS OF ARTIFICIAL INTELLIGENCE IN WIRELESS TECHNOLOGIES

Time Table

Date:-02-01-2023

Duration of Course: 30Hours

Date	Time	Course Contents
09/01/2023	9:30-10:00	Why AI is trending now days?
09/01/2023	10:00-11:30	Understanding AI and its Components
09/01/2023	11:45-1:15	Basics of Wireless Communication
09/01/2023	2:00-4:00	Convergence of AI and Wireless: Opportunities and Challenges
10/01/2023	10:00-11:30	AI-based Network Optimization
10/01/2023	11:45-1:15	Self-Healing Networks Using AI
10/01/2023	2:00-4:00	Predictive Maintenance in Wireless Infrastructure
11/01/2023	10:00-11:30	Enhancing Wireless Sensing with AI
11/01/2023	11:45-1:15	Role of AI in the IoT Ecosystem
11/01/2023	2:00-4:00	Case Studies :AI-Enabled IoT Applications
12/01/2023	10:00-11:30	AI-driven5GNetworkDevelopment
12/01/2023	11:45-1:15	Future Wireless Technologies and AI Integration
12/01/2023	2:00-4:00	Enabling Ultra-Reliable Low-Latency Communication (URLLC) with AI
13/01/2023	10:00-11:30	Threat Detection and Prevention with AI
13/01/2023	11:45-1:15	Biometric Wireless Security using AI
13/01/2023	2:00-4:00	Ensuring Privacy in AI-powered Wireless Systems

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Schedule

- Session I- 9.00amto11:45p.m
- Tea Break– 11:00 amto11:45am
- SessionII-11:45 amto1:15p.m
- LunchBreak-1:15p.m.to2:00p.m.
- SessionIII-2:00p.mto4:00p.m

Prof. Deepak Deshpande

Principal
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DEPARTMENT OF ELECTRONICS AND TELECOMMUNICATIONS

List of Students and Attendance: For Add On Courses "Exploring the Applications of Artificial Intelligence in Wireless Technologies"

GURU NANAK INSTITUTE OF ENGINEERING & TECHNOLOGY
Dahegaon, Kalmeshwar Road, Nagpur-441 501
DEPARTMENT OF ELECTRONICS & TELECOMMUNICATION ENGINEERING

Session 2022-2023

ATTENDANCE FOR ADD ON COURSE ON EXPLORING THE APPLICATIONS OF ARTIFICIAL INTELLIGENCE IN WIRELESS TECHNOLOGIES"

Sr. No	Name of Students	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5
1	GAYATRI TULSIRAM NAGPURE	P	P	P	A	P
2	KALYANI ARUN DATE	P	P	P	P	P
3	KAMINI SUDAM BAGDE	P	P	P	P	P
4	PRADNYA BHOLESHWAR BADGE	P	A	P	P	P
5	SAKSHI VINOD AMBHORE	A	P	A	P	P
6	SHITAL CHANDRASHEKHAR BAGDE	P	P	A	P	P
7	ARPANA JIVAN LAMSE	P	P	P	P	P
8	ARPANA JIVAN LAMSE	P	P	P	A	A
9	ASHWINI RADHESHYAM RAHANGDALE	P	P	P	P	A
10	ASHWINI SUKHRAM MESHRAM	P	P	P	P	P
11	DIKSHA GANESH WADHONE	P	A	P	P	P
12	KAREENA RAJU PASWAN	A	P	P	P	P
13	KANCHAN PRAKASH BHAJGAWARE	P	A	P	P	P
14	KARISHMA IQBAL SHEIKH	P	P	P	P	P
15	ASHAY DEVIDAS RAUT	P	P	P	A	P
16	ANURAG VIJAY MESHRAM	P	P	P	P	P
17	ASHUTOSH LANKESH NARNAWARE	P	P	P	A	P
18	GAURAV SANJAY BHAJNI	P	A	P	P	P
19	OMPRAKASH CHANGDEO KHUBALKAR	P	P	A	P	P
20	PADMAKANT LAXMIKANT KHARKATE	P	P	P	P	P
21	PRASHIL GUNWANT GAVHANKAR	P	P	P	P	P
22	ROHIT DHARMENDRA BELDAR	A	P	P	P	P
23	SHUBHAM GAUTAM MESHRAM	P	P	P	P	P

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Session 2022-2023

24	UTKARSH SHISHUPAL SAHARE	P	P	P	P	P
25	AKASH KULDEEP SOMKUWAR	P	P	P	P	A
26	AMEYA DILIP MENDHE	P	P	P	P	P
27	NIKHIL VITTHAL NANDEKAR	A	P	P	P	P

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Department of Electronics & Telecommunication Engineering

Session (2022-23)

List of Students Enrolled for Course on "EXPLORING THE APPLICATIONS OF ARTIFICIAL INTELLIGENCE IN WIRELESS TECHNOLOGIES"

Name of resource person:

1. Dr. Sushama Telrandhe
2. Prof. Deepak Deshpande
3. Prof. Sandeep Buradkar

Date: 09th Jan to 13th Jan 2023

Mode -Online/Offline

Sr. No.	Name of Student	Semester/Department
1	GAYATRI TULSIRAM NAGPURE	VI SEM /ETC
2	KALYANI ARUN DATE	VI SEM /ETC
3	KAMINI SUDAM BAGDE	VI SEM /ETC
4	PRADNYA BHOLESHWAR BADGE	VI SEM /ETC
5	SAKSHI VINOD AMBHORE	VI SEM /ETC
6	SHITAL CHANDRASHEKHAR BAGDE	VI SEM /ETC
7	ANJALI SANJAY VARMA	VI SEM /ETC
8	ARPANA JIVAN LAMSE	VI SEM /ETC
9	ASHWINI RADHESHYAM RAHANGDALE	VI SEM /ETC
10	ASHWINI SUKHRAM MESHRAM	VI SEM /ETC
11	DIKSHA GANESH WADHONE	VI SEM /ETC
12	KAREENA RAJU PASWAN	VI SEM /ETC
13	KANCHAN PRAKASH BHAJGAWARE	VI SEM /ETC
14	KARISHMA IQBAL SHEIKH	VI SEM /ETC
15	ASHAY DEVIDAS RAUT	VI SEM /ETC
16	ANURAG VIJAY MESHRAM	VI SEM /ETC
17	ASHUTOSH LANKESH NARNAWARE	VI SEM /ETC
18	GAURAV SANJAY BHAJNI	VI SEM /ETC
19	OMPRAKASH CHANGDEO KHUBALKAR	VI SEM /ETC
20	PADMAKANT LAXMIKANT KHARKATE	VI SEM /ETC

21	PRASHIL GUNWANT GAVHANKAR	VI SEM /ETC
22	ROHIT DHARMENDRA BELDAR	VI SEM /ETC
23	SHUBHAM GAUTAM MESHRAM	VI SEM /ETC
24	UTKARSH SHISHUPAL SAHARE	VI SEM /ETC
25	AKASH KULDEEP SOMKUWAR	VI SEM /ETC
26	AMEYA DILIP MENDHE	VI SEM /ETC
27	NIKHIL VITTHAL NANDEKAR	VI SEM /ETC

Dr. S. V. Tejaswi

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MCQ's of Add on Courses on Exploring the Application of Artificial Intelligence in Wireless Technologies

Name of Student:----------

Q1. In how many category processes is Artificial Intelligence classified in?

a) Depends on the input nature
b) 5
c) 2
d) 3

Q2. Which of the following is the common language for Artificial Intelligence?

a) Python
b) Java
c) Lisp
d) P

Q3.The"Father of Artificial Intelligence" is:

a) Alan Turing
b) Charles Babbage
c) John McCarthy
d) None of the above

Q4. What is Artificial intelligence?

a) Putting your intelligence into Computer
b) Programming with your own intelligence
c) Making a Machine intelligent
d).Putting more memory into Computer

Q5.Computer programs that mimic the way the human brain processes information is called as

a) Machine Learning
b) Deep Learning
c) Neural Networks
d) None of these

Q6. Which is the most straight forward approach for planning an Algorithm?

a) Best-first search
b) State-space search
c) Depth-first search
d) Hill-climbing search

Q7. What are the different types of Artificial Intelligence approaches?

a) Strong Approach
b) Weak Approach
c) Applied Approach
d) All of the above

Q8. Decisions of Victory/ Defeat are made in Game trees using which algorithm?

a) DFS
b) BFS
c) Heuristic Search
d) Min/Max Algorithm

Q9. Which of the following architecture are also known as systolic arrays?

a) MISD
b) SISD
c) SIMD
d) None of the above

Q10. How is a decision reached upon by a decision tree?

a) No test
b) Single Test
c) Double Test
d) Multiple sequences of tests

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APPROVED BY AICTE, DTE & AFFILIATED TO RTM NAGPUR UNIVERSITY, NAGPUR
Dahegaon, Opp. IOC Petrol Pump, Kalmeshwar Road, Nagpur – 441501 Ph. 07118-661400
Website: www.gniet.ac.in Email: gnietnagpur@gmail.com

MCQ's of Add on Courses on Exploring the Application of Artificial Intelligence in Wireless Technologies

Name of Student: ASHAY RAUT.

Q1. In how many category processes is Artificial Intelligence classified in?

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c) Depth-first search
d) Hill-climbing search

Q7.What are the different types of Artificial Intelligence approaches?

a) Strong Approach
b) Weak Approach
c) Applied Approach
d) All of the above

Q8. Decisions of Victory/Defeat are made in Game trees using which algorithm?

a) DFS
b) BFS
c) Heuristic Search
d) Min/Max Algorithm

Q9. Which of the following architecture are also known as systolic arrays?

a) MISD
b) SISD
c) SIMD
d) None of the above

Q10. How is a decision reached upon by a decision tree?

a) No test
b) Single Test
c) Double Test
d) Multiple sequences of tests

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Department of Electronics & Telecommunication Engineering
Session (2022-23)
ADD ON COURSE EVALUATION FORM:

Add on Course evaluation Form

Please submit feedback regarding the Add on course you have just completed, including feedback on course structure, content, and instructor.

soniyamilmile4@gmail.com
Switch account

Not shared

* Indicates required question

Student Name *

Your answer

Contact Number *

Your answer

Email Id

Your answer

Level of effort you put into the course *

- Poor
- Fair
- Satisfactory
- Very Good

Contribution of the course to your skill and knowledge *

Contribution of the course to your skill and knowledge *

- ○ Poor
- ○ Fair
- ○ Satisfactory
- ○ Very Good

Skill and responsiveness of the instructor *

- ○ Poor
- ○ Fair
- ○ Satisfactory
- ○ Very Good

Course content was organized and well planned *

- ○ Poor
- ○ Fair

Course content was organized and well planned *

- ○ Poor
- ○ Fair
- ○ Satisfactory
- ○ Very Good

What aspects of this course were most useful or valuable? *

Your answer

Any other comments or suggestions? Please share them below

Your answer

Submit Clear form

Never submit passwords through Google Forms.

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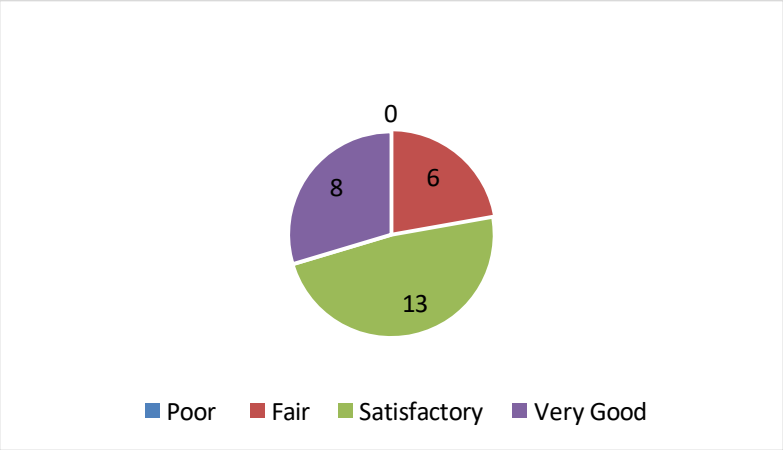
Department of Electronics & Telecommunication Engineering
Session (2022-23)

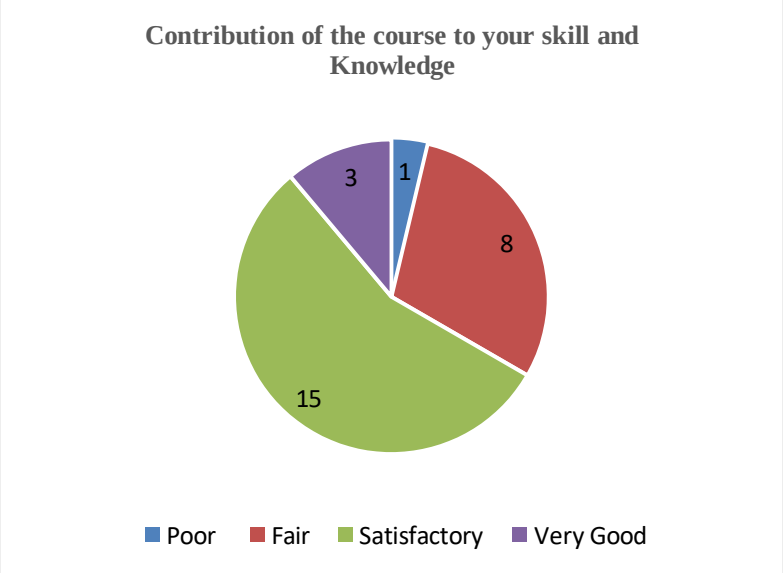
Feedback Analysis of Add on Courses on Exploring the Application of Artificial Intelligence in Wireless Technologies

Total No. of Students: 27

1. Level of effort you put into the course



2. Contribution of the course to your skill and knowledge



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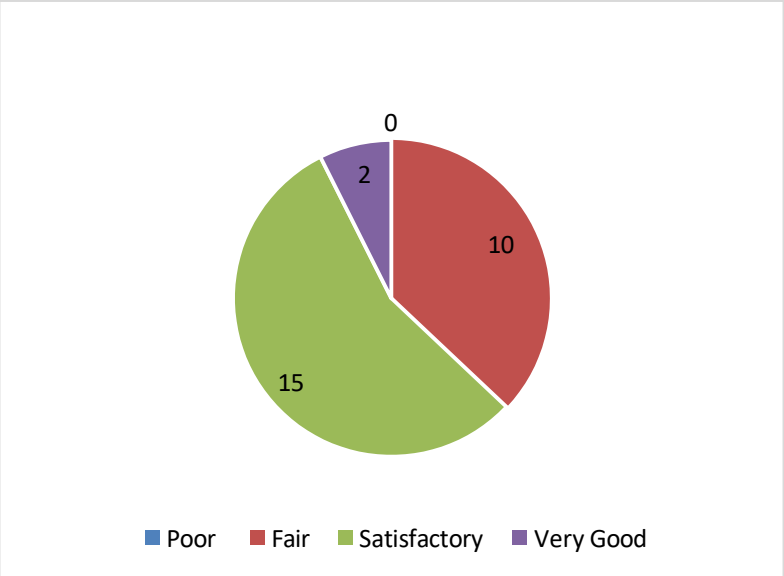
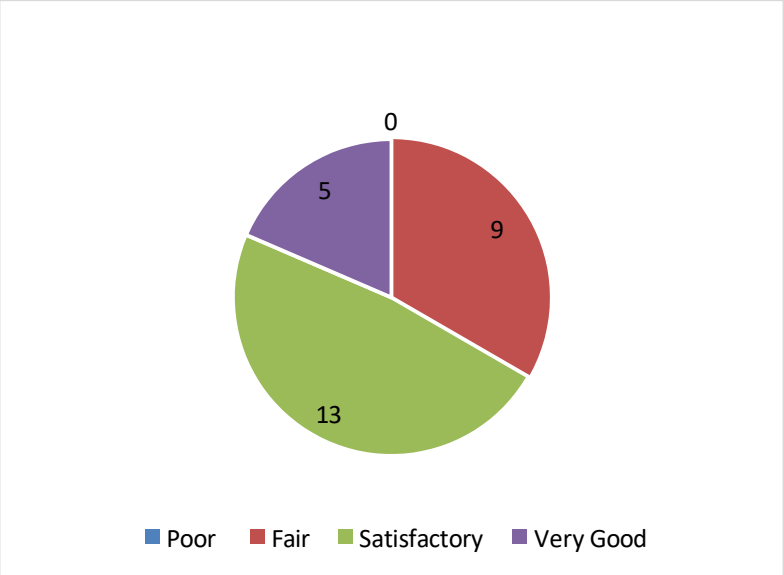
Department of Electronics &Telecommunication Engineering
Session (2022-23)

3. Skill and responsiveness of the instructor



4. Course content was organized and well planned



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Session (2022-23)

REPORT ON EXPLORING THE APPLICATIONS OF ARTIFICIAL INTELLIGENCE IN WIRELESS TECHNOLOGIES

1	**Course Title**	**EXPLORING THE APPLICATIONS OF ARTIFICIAL INTELLIGENCE IN WIRELESS TECHNOLOGIES**
2	**Course Schedule**	**09/01/23to13/01/23**
3	**Course Venue**	**Seminar room and Department of ETC**
4	**Name of Coordinator**	**Prof. Deepak Deshpande**
5	**No. Of students Participated**	**27**
6	**Course Objective**	To study the basic foundation by covering fundamental concepts of both artificial intelligence and wireless technologies. AI in Wireless Networks: Explore how AI is transforming wireless networks, including optimization, self-healing networks, and predictive maintenance. Wireless Sensing and IoT. Discuss the role of AI in enhancing wireless sensing applications and enabling the Internet of Things (IoT) ecosystem. 5G and Beyond Examine how AI contributes to the development and optimization of 5G networks and upcoming wireless technologies. Future Trends: Explore emerging trends and speculate on the future of AI in wireless technologies
7	**Course Outcome**	Solid Understanding of AI and Wireless Technologies: Participants will have a clear grasp of the fundamentals of artificial intelligence and wireless communication, enabling them to understand the convergence of these two domains. 2. Knowledge of AI's Role in Wireless Networks: Participants will comprehend how AI is used to optimize wireless networks, create self-healing systems, and enable predictive maintenance. Insight into Wireless Sensing and IoT: Participants will understand how AI enhances wireless sensing and contributes to the development of the Internet of Things (IoT) ecosystem. Familiarity with 5G and Future Wireless Technologies:

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Students attended Add on courses on Exploring the application of Artificial Intelligence in wireless technology from 9/1/23 to 13/1/23

Prof. Deepak Deshpande
Program Coordinator

Dr. Sushama Telrandhe
HOD,ETC

Dr. Hemant Hajare
Principal GNIET

Principal
Guru Nanak Institute of Engineering &
Technology Nagpur- 441501

Add – on Course

“Applications of MATLAB in Electrical Engineering”

Organized By: Department of Electrical Engineering

(2022-2023)

GURUNANAKINSTITUTEOFENGINEERING&TECHNOLOGY

Dahegaon, Kalmeshwar Road, Nagpur-441 501

DEPARTMENT OFELECTRICALENGINEERING

Date: 21/12/2022

NOTICE

AlltheStudentsofVII semester B.E.ofElectrical Engineeringare herebyinformedthat department is organizing a short termcourse on **"Applications of MATLAB in Electrical Engineering"** from 28/12/2022 to 02/01/2023. The schedule along with all other details of this course is given in the brochure. All the interested students must register for the same from 22th to 26th Dec, 2022. For registration contact to the course coordinator Mr.Akshay Pillewan**,** Assistant Professor**,** Electrical Engineering Department.

Mr. R. M. Bhombe
HOD EE

Copy to:

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2) CirculationAmongtheStudentsWhatsaapgroup
3) HeadT&P
4) PrincipalforInformation

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One Week Online Course on

"APPLICATIONS OF MATLAB IN ELECT RICAL ENGINEERING "

REGISTRATION FORM

Name: _____

Branch: _____

Roll No. : _____

Contact No. : _____

Email Id: _____

Amount (Rs): _____

Signature of Applicant: _____

Date & Place: _____

Signature of Co-Orinator

Signature& Seal of HoD EE

PATRONS

Sardar Navneet SinghTuli,CMD, GNI, Nagpur

Mrs. Tanpreet Kaur Tuli, MD, GNI, Nagpur

ADVISORY COMMITTEE

Dr. Sanjeev Shrivastava, Principal, GNIET, Nagpur

Mr. R .M. Bhombe, HOD Electrical GNIET, Nagpur

CO-ORDINATOR

Mr. Yogesh Likhar, Asst. Prof. EE
Email Id:ymlikhar@gmail.com

ORGANIZING COMMITTEE

Ms. Diksha Khare, Asst. Prof. EE
Email Id:dipavali_786@yahoo.co.in

ADDRESS FOR CORRESPONDENCE:

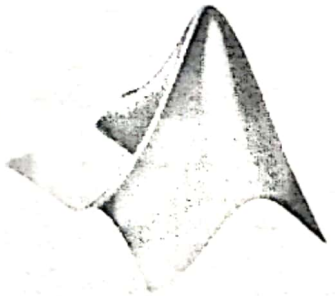
Department of Electrical EngineeringGuru Nanak Institute of Engg. & Tech. Kalmeshwar Road,Near Radha Swami Satsang,Dahegaon, Nagpur, Maharashtra 441501

GURU NANAK INSTITUE OF ENGINEERING & TECHNO LOGY, NAGPUR

One Week Course on

"APPLICATION S OF MATLAB IN ELECT RICAL ENGINEERING "

28/12/2022 TO 02/01 /2023



Organized by

DEPARTMENT OF ELECTRICAL ENGINEERING, GNIET , NAGPUR

REGISTRATION:

Registration can be made in advance by remitting the registration fee as indicated below along with the registration form. For registration contact to Mr. Yogesh Likhar, Asst. Prof. EE.

REGISTRATION FEE:

Registration fees for students of GNIET is 500/-.

IMPORTANT DATES:

Registration starts : 22/12/2022
Last Date of Registration : 26/12/2022

SCHEDULE:

Duration of course is 38 hrs, which will be covered in one week from 28/12/2022 to 02/01/2023. The schedule during the course is divided into two sessions per day as follow:

Session 1 : 9:00 am To 12:30 pm
Lunch Break : 12:30 pm To 1:30 pm
Session 2 : 1:30 pm To 4:30 pm

Mode :
Goggle Meet

ELIGIBILITY

Students of **VIII** Semester/ IV Yr. are eligible to attend the training.

IMPORTANT NOTE

✔All interested students should register before the last date of registration .
✔Students should join the google meet before time link will be provided on whasaap group.

ABOUT THE COURSE

It is an add on course which helps the students to know the application of MATAB in the area of electrical engineering. The course mainly focuses on the student eager to learn about Matrix Laboratory which is a high-level language and interactive environment for numerical computation, visualization, programming and simulation of electrical circuits. Using MATLAB, A student can analyze data, develop algorithms, and simulate electrical circuits.

OBJECTIVE

The objectives of course are:

1. To make students familiar with MATLAB software
2. To teach students basic MATLAB programming.
3. The course will also teach the students about the simulink modelling.

OUR TRAINER

Ms. A. Pillewan, Asst. Prof. EE Email Id: akshu1712@gmail.com

TOPIC COVERAGE

1.Introduction (8hrs)

- MATLAB Basics for the Budding Engineer
- Basic commands
- Script & function file
- Basic mathematical and logical calculations
- Use of for loop
- Drawing plot

2.Experimentation and Modelling in MATLAB (6hrs)

- Design and Implementation
- Project Based Learning
- Accessing, exploring, analysing and visualizing data in MATLAB

3. Electrical engineering concepts Using MATLAB and Simulink (7hrs)

- Introduction to Simulink
- Applications of Simulink in System modelling
- Modelling Basic electrical Circuit in Simulink and obtaining characteristic plots

4.Electrical engineering using Simscape (Physical Modeling)(8hrs)

- Electrical engineering using Sim Power systems
- Control system design and analysis
- Power Electronics Based drive analysis

5. MATLAB Scope in R & D (9hrs)

- Different models of wind and solar system
- Industrial power system Design
- Diffrent industrial models

1.2.2 Number of Add on /Certificate programs offered during the year 4

1.2.3 Number of students enrolled in Certificate/ Add-on programs as against the total number of students during the year

Name of Add on /Certificate programs offered	Course Code (if any)	Year of offering	No. of times offered during the year	Duration of course	Number of students enrolled in the year	Number of Students completing the course in the year
"Introduction of Python Programming"	Nil	2023	1	35 hours	45	40

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GURU NANAK INSTITUTE OF ENGINEERING & TECHNOLOGY

Dahegaon, Kalmeshwar Road, Nagpur-441 501

DEPARTMENT OF ELECTRICAL ENGINEERING

List of Students Enrolled for Course on

"APPICATIONS OF MATLAB IN ELECTRICAL ENGG"

Name of resource person : Mr. A.Pillewan
Date : 28th December to 02 Jan 2022
Mode -Online
Session: 2022-23

Sr. No.	Roll No	Student Name	Sign
1.	1	ACHAL RUPCHAND WADBUDHE	
2.	2	ARTI DINESH KHAMBALKAR	
3.	3	BHAVIKA NILKANTH SHENDE	
4.	4	OJASVI SANJAY BURANDE	
5.	5	PALLAVI DEORAO GHONGE	
6.	6	POOJA DILIPRAO SHENDE	
7.	7	PUNAM CHANDRABHAN MAHURE	
8.	8	RAKHIBAI KESHORAO PATLE	
9.	9	SADHANA SOVINDAS BISEN	
10.	10	SHREYA SANGAM KAPSE	
11.	11	SHWETA BAPURAO RANDKHE	
12.	12	SHWETA KIRANRAO GHATOLE	
13.	13	SUSHMA RAJENDRA MENDHE	
14.	14	VAISHNAVI RAJU MADANKAR	
15.	15	VANDANA SHOBHARAM MOHANKAR	
16.	16	YOGITA TEJRAM UIKEY	
17.	17	AJINKYA JANKIDAS MATE	
18.	18	AKHIL HIRALAL CHHANIKAR	
19.	19	ANKIT UPASRAO KAWADKAR	
20.	20	ARJUN SHESHRAO DESHMUKH	
21.	21	BADAL SOMAJI RANGARI	
22.	22	BHAGWAT DINESH DEVSARKAR	
23.	23	BHUSHAN VISHNU MURODIYE	
24.	24	CHETAN WASUDEO AMBAGADE	
25.	25	DEEPAK CHAMANLAL PACHE	
26.	26	DHAMMANAND PRABHUDAS MOHOD	
27.	27	GAJANAN SANTOSH GAHULE	
28.	28	GANESH RAMRAO BHANDARWAD	

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29.	29	GAURAV SHESHRAO DAKHARE	G.S. Dakhare
30.	30	GAURAV SUDHIR MADEKAR	
31	31	HARSHAL PANDURANG JAIWAR	
32	32	JITESH KASHINATH GHARPURE	Jitesh
33	33	KIRTESH PRABHAKAR SATPUTE	
34	34	MAHESH DILIP MUSALE	MDMusale
35	35	MAHESH RAJU VERMA	MRverma
36	36	MAYUR RAJENDRA BHAKTE	
37	37	MILIND KULDEEP GADLING	
38	38	NIKHIL MADHUKAR BHALERAO	NMBhalerao
39	39	NIRAJ SHRIPAD NILE	Nile
40	40	PRASAD SHRIDHAR TEMBHURNIKAR	
41	41	PRITAM SANJAYRAO CHAPLE	
42	42	RAJAT MADHUKAR KUTHE	RMkuthe
43	43	RAVINDRA VINAYAK HOLE	
44	44	RUGWED SHIVSHANKAR TEMBHARE	
45	45	SANKET PRAVIN GUND	
46	46	SARVAN NARAYAN GOUR	SARVAN
47	47	SATISH ARVIND DUDHE	
48	48	SAURABH GOPAL KHUJNARE	Skhujnare
49	49	SHUBHAM MADHAVRAO RAJEPWAD	
50	50	SHUBHAM RAMCHANDRA MATHURKAR	
51	51	SUMIT WASUDEO BHOYAR	Sumit
52	52	SURAJ VIJAYRAO LEKURWALE	Suraj
53	53	VAIBHAV DHAONDU MAMTKAR	
54	54	VILAS DHUPLAL MAHURE	VMahure
55	55	VIVEK SURAJLAL SAHARE	
56	56	WAQAR AHMAD MUMTAZ NAZEER ALI	

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GURU NANAK INSTITUTE OF ENGINEERING & TECHNOLOGY

Dahegaon, Kalmeshwar Road, Nagpur-441 501.

Department of Electrical Engineering

Session(2020-21)

CERTIFICATE COURSE ON APPLICATIONS OF MATLAB IN ELECTRICAL

Time Table

Date:-02-12-2022

Duration of Course: 38 Hours

Date	Course Contents
28-12-2022	Introduction to Matlab, Script of Matlab
29-12-2022	Experimentation in MATLAB, Modelling in MATLAB
30-12-2022	Electrical engineering concepts Using MATLAB and Simulink
31-12-2022	Electrical engineering using Simscape (Physical Modeling)
01-1-2023	Power Electronics Based drive analysis
2-1-2023	MATLAB Scope in R & D

Schedule

- Session I-9:00 am to 12:00 p.m
- Lunch Break-12:00 p.m. to 1:00 p.m.
- Session II-1:00 p.m to 4:00 p.m

Venue

Mode Online .

Coordinator

Prof.A.Pillewan

Principal

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COURSE ON APPLICATIONS OF MATLAB IN ELECTRICAL

COURSE OBJECTIVES

The objectives of this course are:

1. To make students familiar with MATLAB software
2. To teach students basic MATLAB programming.

SYLLABUS

DURATION : 38 HOURS

1.Introduction (8hrs)

- MATLAB Basics for the Budding Engineer
- Basic commands,
- Script & function file
- Basic mathematical and logical calculations
- Use of for loop
- Drawing plot

2.Experimentation and Modelling in MATLAB (6hrs)

- Design and Implementation
- Project Based Learning
- Accessing, exploring, analysing and visualizing data in MATLAB

3. Electrical engineering concepts Using MATLAB and Simulink (7hrs)

- Introduction to Simulink
- Applications of Simulink in System modelling
- Modelling Basic electrical Circuit in Simulink and obtaining characteristic plots

4.Electrical engineering using Simscape (Physical Modeling)(8hrs)

- Electrical engineering using SimPowersystems
- Control system design and analysis
- Power Electronics Based drive analysis

5. MATLAB Scope in R & D (9hrs)

- Different models of wind and solar system
- Industrial power system Design
- Diffrent industrial models

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References: 1. **https://www.mathworks.com**
2. Getting Started With Matlab Rudra Pratap Oxford University Press

COURSE OUTCOME

After completing this course, students will be able to,

1. Understand basic programming in MATLAB
2. Understand the fundamental features of Simulation.
3. Able to design simulink models of different electrical circuits.
4. Understand the importance of MATLAB in R & D.

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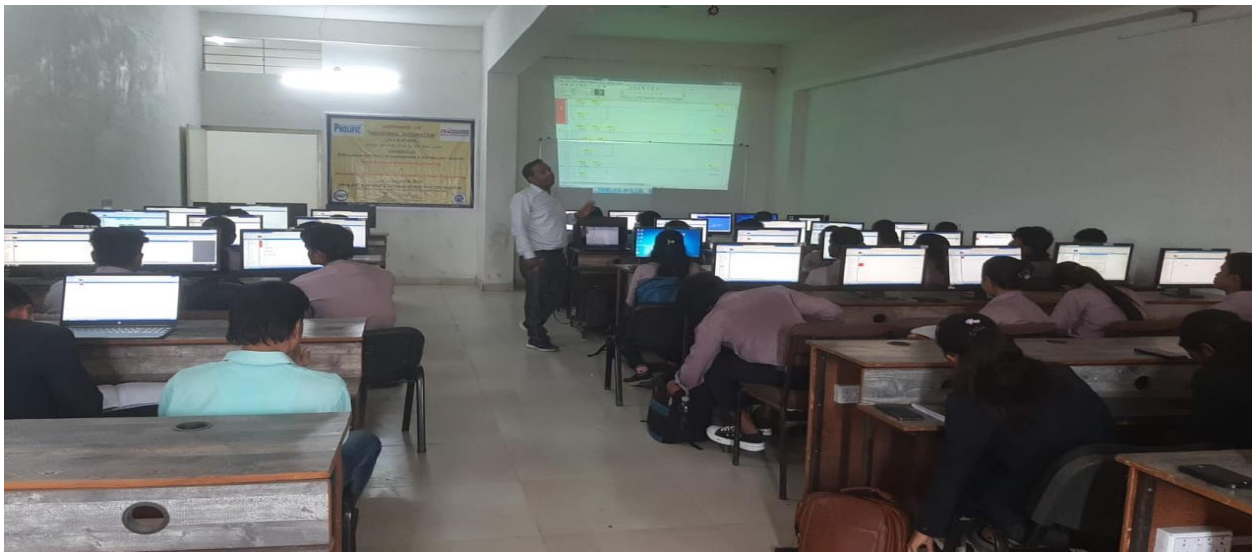

Course of Application of MATLAB in Electrical on Dated 28/12/22 to 2/01/23

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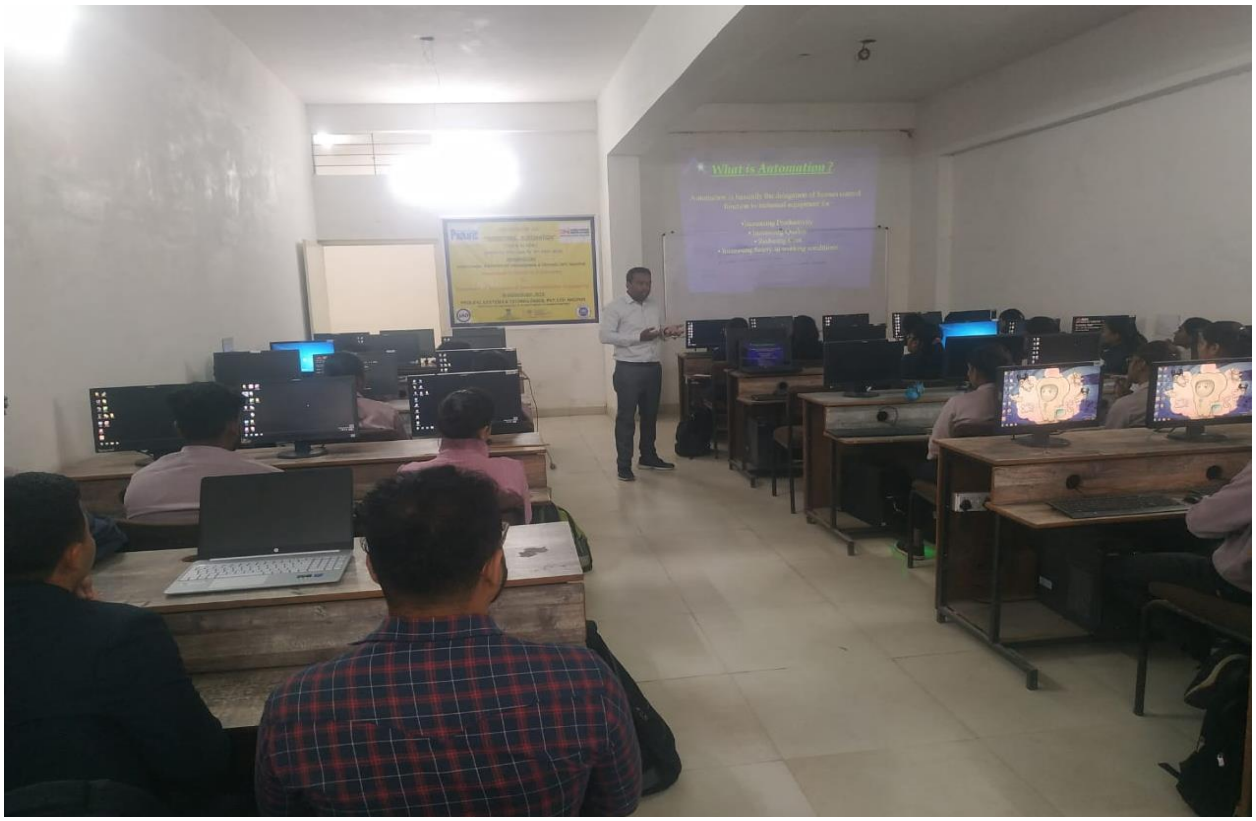

Prof. Akshay Pillewan
Coordinator

Prof. Rajendra Bhombe
H.O.D (EE)

Dr. Hemant Hajare
Principal

Principal
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GURU NANAK INSTITUTE OF ENGINEERING & TECHNOLOGY
Dahegaon, Kalmeshwar Road, Nagpur-441 501
DEPARTMENT ELECTRICAL ENGINEERING

Session 2022-2023

Date:27/08/2020

APPLICATIONS OF MATLAB IN ELECTRICAL

MCQ

Name of Student:-.....

1. To add comments in MATLAB, use _____
   a) //
   b) %/
   c) /%
   d) %

2. To display comments of M-file, we use _____
   a) echo on
   b) comment on
   c) show %
   d) Cannot be displayed

3. Where do we need to store a function to call it in other programs?
   a) The bin folder
   b) Anywhere
   c) The MATLAB folder
   d) Desktop

4. What are the difference between the ‘help’ and the ‘look for’ command?
   a) No difference
   b) Syntactical difference
   c) Help returns the entire set while look for returns specific commands
   d) Help returns all the toolbox while look for returns a single toolbox

5. What will the following set of commands do when they are present in a script file?

```
stem[y1,y2];
title('p');
```

```
print -deps p
```

a) Plot the discrete graph of y1 and y2
b) There is no stem command in MATLAB
c) Store the graph as a separate file
d) Cannot be determined

6. The function to close the windows containing graphs generated from MATLAB is _____

a) close all
b) close graphs
c) delete graphs
d) end all

7. What is not displayed by the Workspace?
   a) Time of variable generation
   b) Standard deviation of the variable values
   c) Class of the variables
   d) Nature of the variables
8. MATLAB allows modelling of different control systems using _____
   a) Simulink
   b) Control System Toolbox
   c) Not available in MATLAB as of yet
   d) ezplot

9. How to stop the execution of a chain of commands?
   a) Press Ctrl +c
   b) Cannot be stopped
   c) Only usage of debugging mode is possible in MATLAB
   d) Quit

10. What are MEX files in MATLAB?
    a) No such thing as MEX files
    b) Helps to analyse commands in MATLAB
    c) Allows the user to combine C source files with Matlab files
    d) Same as MAT files

Answers key
1)d,2)a,3)a,4)c,5)c,6)a,7)a,8)a,9)a,10)c

Add on Course evaluation Form

Please submit feedback regarding the Add on course you have just completed, including feedback on course structure, content, and instructor.

Sign in to Google to save your progress. Learn more

* Indicates required question

Student Name *

Your answer

Contact Number *

Contact Number *

Your answer

Email Id

Your answer

Level of effort you put into the course *

- ◯ Poor
- ◯ Fair
- ◯ Satisfactory
- ◯ Very Good

Contribution of the course to your skill and knowledge *

- Poor
- Fair
- Satisfactory
- Very Good

Skill and responsiveness of the instructor *

- Poor
- Fair
- Satisfactory
- Very Good

Course content was organized and well planned *

- Poor
- Fair
- Satisfactory
- Very Good

What aspects of this course were most useful or valuable? *

Your answer

Any other comments or suggestions? Please share them below

Your answer

Feedback Analysis of Add on Courses on Exploring the APPLICATIONS OF MATLAB IN ELECTRICAL

Total No. of Students: 43

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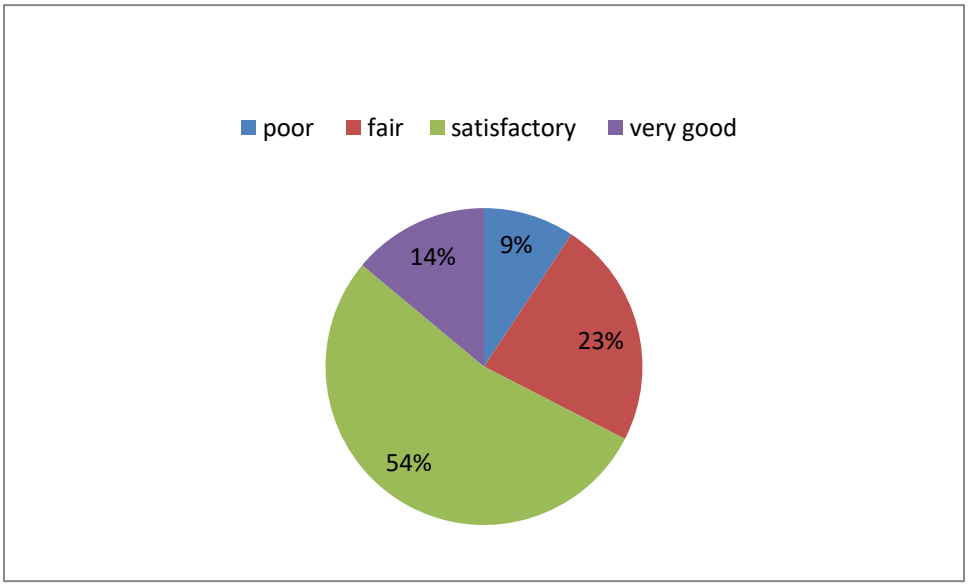
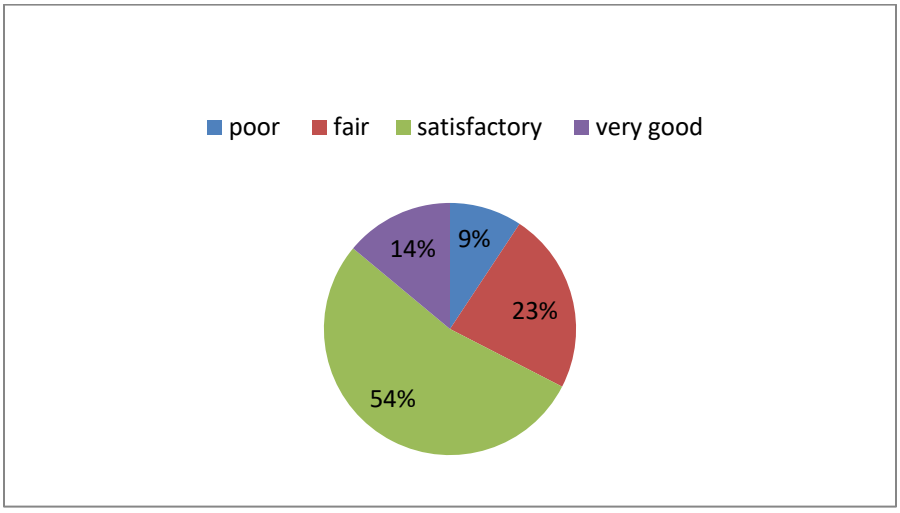
1. **Level of effort you put into the course**



2. Contribution of the course to your skill and knowledge



3. Skill and responsiveness of the instructor

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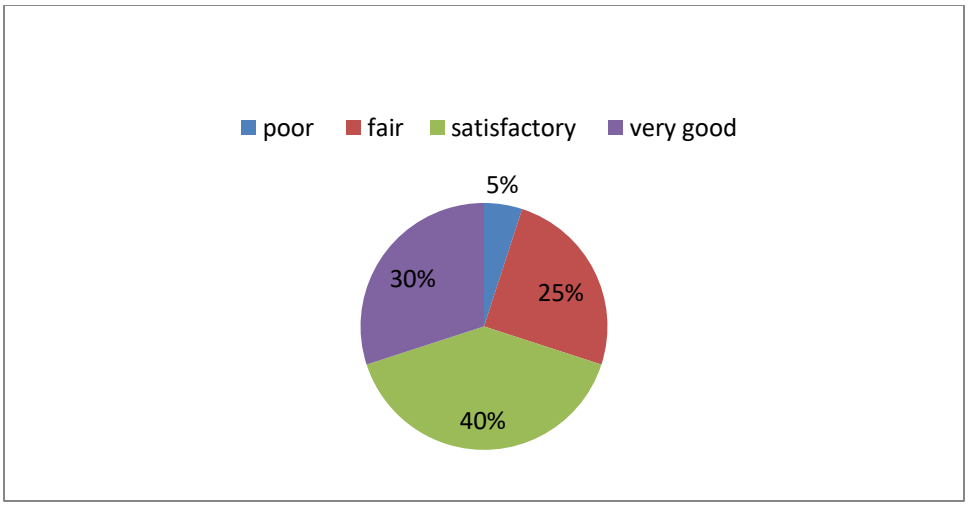
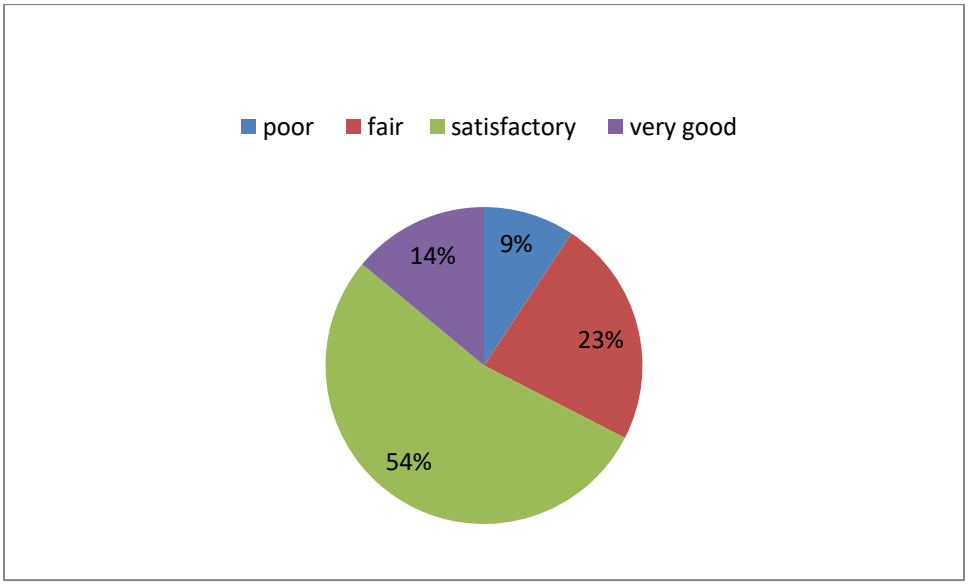


4. Course content was organized and well planned



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Add – on Course

“Certificate Course in Digital Marketing”

Organized By: Department of Master of Business Administration

(2022-2023)

Guru Nanak Educational Society's

GURU NANAK INSTITUTE
OF ENGINEERING & TECHNOLOGY

APPROVED BY AICTE, DTE & AFFILIATED TO RTM NAGPUR UNIVERSITY, NAGPUR

Dahegaon, Opp. IOC Petrol Pump, Kalmeshwar Road, Nagpur – 441501 Ph. 07118-661400
Website: www.gniet.ac.in Email: gnietnagpur@gmail.com

GURU NANAK INSTITUTE OF ENGINEERING & TECHONOLOGY

Dahegaon kalmeshwar road, nagpur

Department of Management Studies

Session (2022-2023)

CERTIFICATE COURSE ON DIGITAL MARKETING

(07/02/2023 to 16/02/2023)

Course Objectives:

The objective of this course are:

- Brand Awareness
- Lead Generation
- Promotion for new products & services
- Target Customers
- Retaining Old customers
- Increase Sales/Profit
- Expand Market
- More Website Traffic
- Improve User Experience
- Improve conversions
- Less Costly

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Syllabus

Duration: 60 Hours

Module 1: Search Engine Optimization (SEO): (15 Hours)

1.1 Introduction to Marketing and Advertisements
1.2 Introduction to Digital Marketing and Its Advantages over Traditional Marketing
1.3 Customer Centricity
1.4 What is SEO and how do Search Engines Work?
1.5 Understanding On-page and Of-page SEO In Detail
1.6 Keyword research
1.7 Technical SEO, Mobile SEO, and Schema Markups
1.8 Link building – Blogger Outreach and Other Techniques
1.9 Social SEO, Local SEO, and International SEO
1.10 SEO Audits
1.11 SEO Tools – SEMrush, Ahrefs, etc.
1.12 Algorithm Updates
1.13 How to Rank #1 on Google?

Module 2: Social Media Optimization (SMO)(8 Hours)

2.1 What is Social Media Optimization?
2.2 Why Social Media Marketing?
2.3 Different Social Media Platforms – Quora, Facebook, Twitter, Instagram, LinkedIn, Pinterest, etc.
2.4 Promotion of Content or Product(s) on these platforms
2.5 Managing and Driving Engagement
2.6 Guidelines and Best Practices
2.7 Social Media Platforms – Case studies

Module 3: Email Marketing(12Hours)

3.1 What is Email Marketing?
3.2 Its Objectives
3.3 Tips and Tricks
3.4 Domain Reputation and SPF
3.5 Different Email Providers – Mailchimp, etc.
3.6 Campaign Creation – HTML and Built-in Editors
3.7 A/B Testing
3.8 Source Tracking, List Management, etc.

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Module 4: Content Marketing and Influencer Marketing(15 Hours)

4.1 What is Content Marketing?
4.2 Its Objectives
4.3 Different Types of Content Marketing
4.4 Writing Blogs and Content and Promoting It on Different Platforms
4.5 Creating Engaging Videos and Promoting Them
4.6 What is Influencer Marketing?
4.7 How to Reach Out to Influencers and Engage Them?

Text Books:

1) Digital Marketing, Raghavendra K., Shruti Prabhakar, Himalaya Publ. House, 2016, page no. 96-147, 155-174

2)Digital Marketing, Raghavendra K., Shruti Prabhakar, Himalaya Publ. House, 2016, page no. 179-252

Reference Books:

Digital Marketing, Raghavendra K., Shruti Prabhakar, Himalaya Publ. House, 2016, page no. 1-79

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ATTENDANCE SHEET

		Dates 7 to 16 Feb 2022									
SN	**Candidate Name**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
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3	SHETE ACHAL DIWAKAR	P	A	P	P	P	P	U	P	P	P
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5	PANCHADHARE ANAND ASHOK	P	P	P	P	P	A	N	P	P	P
6	MANKAR ANIKET DNYANESHWAR	P	P	A	P	P	P		P	P	P
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11	RAUT ASHWINI RAMESH	P	P	P	A	P	P	Y	P	P	P
12	SONONE ASMITA RAMESH	P	P	A	P	P	P		P	P	P
13	MANKAR AVINASH RAMBHAU	P	P	P	A	P	P		P	P	P
14	KUMBHALKAR BHOJVI VISHWANATH	P	A	P	P	P	P		P	P	P
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