Department of Electronics

Sree Ayyappa College, Eramallikkara

ADD-ON Course for BSc ELECTRONICS 2019-2020

EXADD 8051 Microcontroller and Interfacing

Objective

- Understand the concept of microcontroller based system.
- Enable the design, programming & interfacing of microcontroller basedSystem

Design

The course consists of 30Hrs of theory practical sessions.

Students are made aware of the basics of the following topics

1.Difference between microcontrollers and microprocessors

2.Architecture of 8051 controller

3.Instruction set and programming

4.Interfacing peripherals with 8051

Syllabus

Module 1

Introduction, Comparison of microprocessor and microcontroller, Over view and blockdiagram of 8051,Architecture of 8051, program counter and memory organization, Data typesand directives, PSW registers, register banks, and stack, pin diagram of 8051, portorganization, Interrupts and timers. [8 hours]

Module 2

Addressing modes, Instruction set of 8051:Addressing modes and accessing memory usingvarious addressing modes, instruction set: Arithmetic, Logical, Simple bit, jump, loop andcall instructions and their usage. Time delay generation and calculation, Timer/ Counterprogramming.

[7 hours]

Module 3

Interfacing and application of Microcontroller: Interfacing of PPI 8255, DAC (0804),Temperature measurement (LM35), interfacing seven segment displays, displayinginformation on a LCD, control of a stepper motor (Uni –polar), Interfacing a 4 X 3 matrixKeypad, Generation of different types of waveforms using DAC. [15 hours]

Text books

1. The 8051 microcontroller and embedded systems By Muhammad Ali Maxzali and

Janice GillispeMazali –Pearson edition Asis, 4thReprint 2002.

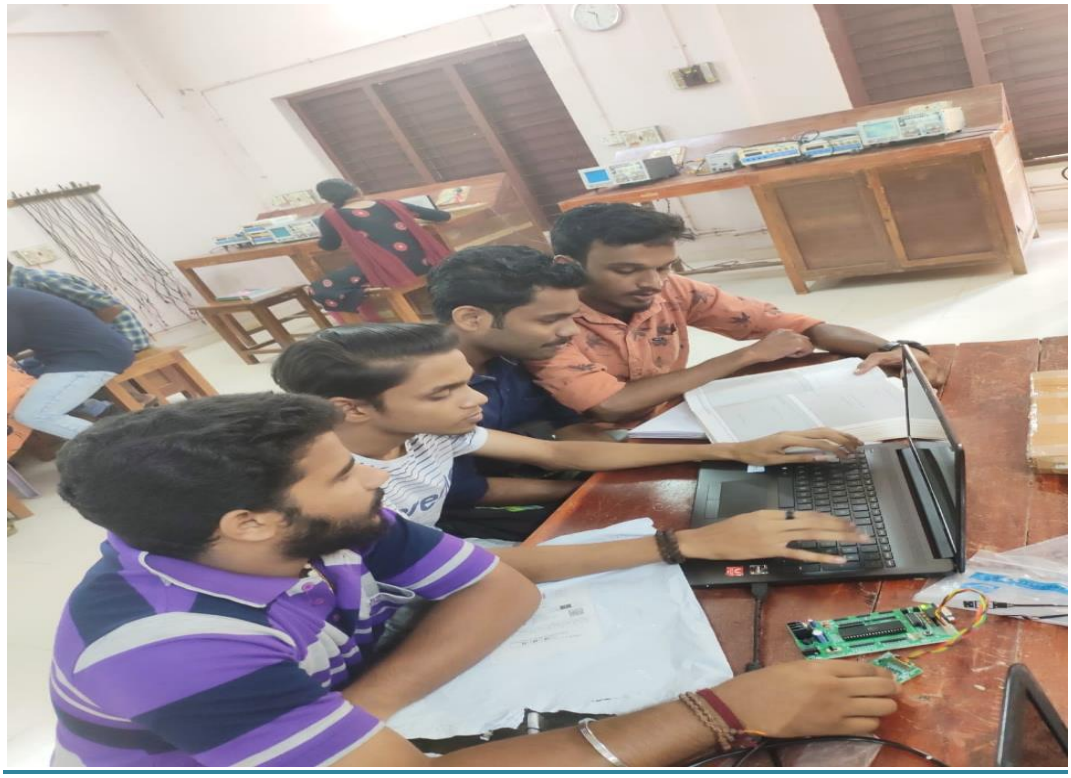
2. The 8051 Microcontroller and embedded stems using assembly and c -Kennet , J.

Ayalam, DhananjayV.gadre, cengage publications

The Add-On course, ‘ Microcontroller and Interfacing’ offered by the Department of Electronics was inaugurated by Prof.(Dr) NishaKuruvilla, Principal, College of Engineering, Kallooppara, Pathanamthitta, on 24th January 2020. The class was led by Sri. Remesh Kumar, Senior Research Fellow, MG University, Kottayam.

Introductory Classes:

Practical Classes:



Assessment-sample questions

1. 8051 series of microcontrollers are made by which of the following companies?
   a) Atmel
   b) Philips
   c) Atmel & Philips
   d) None of the mentioned
   Answer: d
   Explanation: Atmel series AT89C2051 and Philips family P89C51RD2 are the two most common microcontrollers of 8051 families.
2. 2. AT89C2051 has RAM of:
   a) 128 bytes
   b) 256 bytes
   c) 64 bytes
   d) 512 bytes

   Answer: a
   Explanation: It has 128 bytes of RAM in it.
3. 8051 series has how many 16 bit registers?
   a) 2
   b) 3
   c) 1

d) 0

Answer: a
Explanation: It has two 16 bit registers DPTR and PC.

4. When 8051 wakes up then 0x00 is loaded to which register?
   a) DPTR
   b) SP
   c) PC
   d) PSW

   Answer: c
   Explanation: When a program wakes up, then 0x00 is loaded to the program counter register because at this place the first op code is burnt.
5. When the microcontroller executes some arithmetic operations, then the flag bits of which register are affected?
   a) PSW
   b) SP
   c) DPTR
   d) PC

   Answer: a
   Explanation: It stands for program status word. It consists of carry, auxiliary carry, overflow, parity, register bank select bits etc which are affected during such operations.

DEPERTMENT OF ELECTRONICS

SREE AYYAPPA COLLEGE, ERAMALLIKKARA

Add-on course on

Microcontrollers and its Applications (2019-2020)

Attendance

Sl. No	Name	Date: 24/01/2020 Time: 9.45 to 12.45 p.m	Date: 24/01/2020 Time: 1:30 pm to 3:30 pm	Date: 31/01/2020 Time: 1.30 pm to 3.30 pm	Date: 14/02/2020 Time: 1.30 pm to 3.30 pm	Date: 18/02/2020 Time: 1.30 pm to 3.30 pm	Date: 19/02/2020 Time: 9.30 – 12.30
1.	Abhijith Anil						
2.	Abhiram Satheeshan						
3.	Adithya Raj.S						
4.	Altima.S.B						
5.	Anantha Vishnu						
6.	Anandhu Jayakumar						
7.	Anandhu.S.Kumar						
8.	Anandhu.V						
9.	Anchal.M.Panicker						
10.	Greeshma Raj						
11.	Prajin.P.S						
12.	Radhya Chandran						
13.	Rajshekhar Nair						
14.	Sangeeth Syam						
15.	Silpa.G						
16.	Soumya.S						
17.	Vinodini.V.S						
18.	Vishnu.V.Pillai						
19.	Vivek.V						

Course Coordinator **Head of the Department** **PRINCIPAL**

SREE AYYAPPA COLLEGE (T.D.B) ERAMALLIKKARA P.O, THIRUVANANDOOR

DEPERTMENT OF ELECTRONICS

SREE AYYAPPA COLLEGE, ERAMALLIKKARA

Add-on course on

Microcontrollers and its Applications (2019-2020)

Attendance

Sl. No	Name	Date: 25/02/2020 Time: 9.30-12.30	Date: 25/02/2020 Time: 1.30-3.30	Date: 27/02/2020 Time: 9.30-12.30	Date: 27/02/2020 Time: 1.30-3.30	Date: 28/02/2020 Time: 1.30-3.30	Date: 09/03/2020 Time: 1.30-3.30
1.	Abhijith Anil	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]
2.	Abhiram Satheeshan	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]
3.	Altima.S.B	[signature]	[signature]	[signature]	[signature]	[signature]	
4.	Anantha Vishnu	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]
5.	Anandhu Jayakumar	[signature]					
6.	Anandhu.S.Kumar	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]
7.	Anandhu.V	[signature]	[signature]	[signature]	[signature]	[signature]	
8.	Anchal.M.Panicker	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]
9.	Greeshma Raj	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]
10.	Prajin.P.S	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]
11.	Radhya Chandran	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]
12.	Rajshekhar Nair	[signature]	[signature]				
13.	Sangeeth Syam	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]
14.	Silpa.G	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]
15.	Soumya.S	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]
16.	Vinodini.V.S	[signature]	[signature]	[signature]	[signature]		
17.	Vishnu.V.Pillai	[signature]	[signature]	[signature]	[signature]	[signature]	[signature]
18.	Vivek.V	Vivek.	[signature]	[signature]	[signature]	[signature]	[signature]

Course Coordinator **Head of the Department** **PRINCIPAL**

SREE AYYAPPA COLLEGE (T.D.B) ERAMALLIKKARA P.O, THIRUVANVANDOOR

Scanned with ACE Scanner

DEPERTMENT OF ELECTRONICS

SREE AYYAPPA COLLEGE, ERAMALLIKKARA

Add-on course on

Microcontrollers and its Applications (2019-2020)

Attendance

Sl. No	Name	Date: 09/03/2020 Time: 9.30-11.30	Date: 09/03/2020 Time: 1.30-3.30	Date: 10/03/2020 Time: 1.30-3.30	Date: Time:	Date: Time:	Date: Time:
1.	Abhijith Anil	Ab	Ab				
2.	Abhiram Satheeshan	Ab	Ab	Ab			
3.	Altima.S.B						
4.	Anantha Vishnu						
5.	Anandhu Jayakumar	Ab	Ab				
6.	Anandhu.S.Kumar						
7.	Anandhu.V						
8.	Anchal.M.Panicker						
9.	Greeshma Raj						
10.	Prajin.P.S						
11.	Radhya Chandran						
12.	Rajshekhar Nair	Ab	Ab				
13.	Sangeeth Syam						
14.	Silpa.G						
15.	Soumya.S						
16.	Vinodini.V.S						
17.	Vishnu.V.Pillai						
18.	Vivek.V						

Course Coordinator **Head of the Department** **PRINCIPAL**

SREE AYYAPPA COLLEGE (T.D.B) ERAMALLIKKARA P.O, THIRUVANVANDOOR CHENGANNUR, ALAPPUZHA DIST. 689 121

ClassMarker

Results

Tests Groups Links

Microcontrollers and its Applications
S6 BSc ELECTRONICS

Results Settings
0%
1 hour
1 Attempt Allowed

Statistics by Category

All dates | Any status & score | Any duration

Name	Percentage	Score	Duration	Date	
Average	68.2%	20.5/30	00:42:17		
Abhijith Anil	76.7%	23/30	00:22:07	Thu 2 Apr '20 10:31am	Answers
Radhya Chandran	53.3%	16/30	00:18:59	Thu 2 Apr '20 11:05am	Answers
Silpa G	86.7%	26/30	00:54:09	Thu 2 Apr '20 10:41am	Answers
Anandhu Jayakumar	53.3%	16/30	00:45:31	Thu 2 Apr '20 10:31am	Answers
Anchal M Panicker	56.7%	17/30	00:58:08	Thu 2 Apr '20 11:09am	Answers
Rajshekhar Nair	73.3%	22/30	01:00:03	Thu 2 Apr '20 10:37am	Answers
Prajin Ps	66.7%	20/30	00:09:58	Thu 2 Apr '20 10:35am	Answers
Greeshma Raj	66.7%	20/30	00:51:41	Thu 2 Apr '20 10:32am	Answers
Soumya S	60%	18/30	00:53:06	Thu 2 Apr '20 10:34am	Answers
Anandhu S Kumar	63.3%	19/30	00:47:19	Thu 2 Apr '20 10:37am	Answers

Altima Sb	86.7%	26/30	00:37:25	Thu 2 Apr '20 11:38am	Answers
Sangeeth Shyam	80%	24/30	00:49:04	Thu 2 Apr '20 10:33am	Answers
Anandhu V	83.3%	25/30	00:45:13	Thu 2 Apr '20 10:34am	Answers
Vivek V	60%	18/30	00:54:45	Thu 2 Apr '20 10:54am	Answers
Vishnu V Pillai	60%	18/30	00:53:50	Thu 2 Apr '20 10:32am	Answers
Anantha Vishnu	73.3%	22/30	00:49:30	Thu 2 Apr '20 10:45am	Answers
Vinodini Vs	60%	18/30	00:08:15	Thu 2 Apr '20 10:50am	Answers

www.classmarker.com

SREE AYYAPPA COLLEGE
ERAMALLIKKARA, CHENGANNUR, ALAPPUZHA DIST.
Aided College Affiliated to University of Kerala and Managed by Travancore Devaswom Board
NAAC Accredited with 'B' grade
Centre for Incubation and Entrepreneurship (SAC-CIE) &
Centre for Outreach Society Activities, Department of Electronics

CERTIFICATE

This is to certify that ..... Altima. S. B
student of ..... Final year B.Sc Electronics
has successfully completed the add-on course entitled "8051 Microcontrollers and Interfacing" during 2019-2020.

HOD, Electronics | SAC-CIE Convener | IQAC Convener | PRINCIPAL

Conclusion

The whole students from Final year B.Sc Electronics (2017 Admission) batch (18Nos.), were actively participated in the add-on course offered by the Department of Electronics. The course was arranged, based on the 30 hour syllabus including both theory and practical classes. Finally, an evaluation was done. As the Country as a whole was entered into lock down during the last week of March2020, the evaluation was conducted in the online mode. The evaluation shows that the students were befitted from the course. The certificates were also distributed later.

****