



SRI SRINIVASA EDUCATIONAL & CHARITABLE TRUST (R)
Sapthagiri College of Engineering
 (Affiliated to Visvesvaraya Technological University, Belgaum & Approved by AICTE, New Delhi)

STUDENTS FEEDBACK ON CURRICULUM

This questionnaire is to collect information relating to your satisfaction towards curriculum for creating conducive atmosphere for teaching and learning. The information provided by you will be kept confidential and will be used as important feedback for quality improvement of the program of studies/institution.

Academic Year	2016-2017
Branch	ECE
Name of the Student	Harish B.
USN	15G15EC037

Rate the curriculum/syllabus on the following Points

SL NO	Statements	Excellent	Very good	Good	Average	Below Average
		5	4	3	2	1
1	How do you rate the syllabus of the courses that you have studied in relation to the competencies expected out of the course?		✓			
2	How do you rate the allocation of the credits to the courses?		✓			
3	Relevance for implementation in projects	✓				
4	How do you rate the electives offered in relation to the technological advancements?		✓			
5	How do rate the evaluation scheme designed for each of the course?	✓				
6	How do you rate the percentage of courses having LAB components?	✓				
7	Curriculum is sufficient to make you analyze the engineering problems and its suitable solution	✓				
8	Suggestions (if any)					

Suggestions: Introduce a Conduct certification courses on Embedded system design

Signature

Harish B.

Principal
Sapthagiri College of Engineering
 14/5, Chikkasandra, Hosuraghatta Main Road
 Bengaluru - 560 057



FACULTY FEEDBACK ON CURRICULUM

This questionnaire is intended to collect information relating to your satisfaction towards the curriculum, teaching, learning and evaluation. The information provided by you will be kept confidential and will be used as important feedback for quality improvement of the program of studies/institution.

Academic Year	2016-2017
Branch	Electronics & Communication Engg
Name of the Faculty	Karthik N. C.
Designation	Lecturer
Subject/Sub. code	ARM Microcontroller & Embedded systems

Rate the curriculum/syllabus on the following Points

SL NO	Statements	Excellent	Very good	Good	Average	Below Average
		5	4	3	2	1
1	Do you feel that the curriculum is defined in a way to clarify your teaching goals and what you expect your students to learn?		✓			
2	Is the curriculum sufficient to bridge the gap between industry standards, current global scenarios and academics?	✓				
3	Is the timely coverage of curriculum possible in the mentioned number of hours?			✓		
4	Sufficient reference material and books are available for the topics mentioned in the curriculum?	✓				
5	The evaluation methods mentioned in the curriculum are sufficient for providing proper assessment?	✓				
6	Curriculum is suitable to the course	✓				
7	The curriculum/course of this subject increased my knowledge and perspective in the subject area	✓				

Suggestions: Foundation for the subjects required interms of hardware circuits like Relays, motor interfacing, serial communication (like) Vire. UART, I²C, SPI etc.

Signature: Karthik



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ALUMN FEEDBACK ON CURRICULUM

We are glad that you have spent valuable years pursuing courses of your choice at SCE. We shall be thankful if you can spare some of your valuable time to fill up this feedback form and give us valuable suggestions for further improvement of the College. Your valuable inputs will be of great use to improve the quality of our academic programs and enhance the credibility of our Institution. Rate the adequacy of following as they were during your tenure as a student

Year of Passing	2016
Branch	RCE
Name	Aparith
Status : Work/Study	Working
Phone no.	7760314742

Rate the curriculum/syllabus on the following Points

SL NO	Statements	Excellent	Very good	Good	Average	Below Average
		5	4	3	2	1
1	When you compare yourself with other counterparts from other Institution, you feel that you got most of all the facilities which is not available in other Institution		✓			
2	Learning value (in terms of skills, concepts, knowledge, analytical abilities or broadening perspectives)		✓			
3	Curriculum is sufficient to make you analyze the engineering problems and its suitable solution			✓		
4	How do you rate the learning experience in terms of their relevance to the real life application		✓			
5	Ability to work in teams	✓				
6	Ability to link theory to practice		✓			
7	How do you rate the course/curriculum content that you have learnt in relation to your current job			✓		
8	Compatibility with industry standards		✓			

Suggestions: I would suggest to include some of the latest technologies into the course curriculum like ARMY etc

Signature

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Sapthagiri College of Engineering
 14-5, Chikkaandra, Heggarghatu Main Road
 Bangalore - 560 057

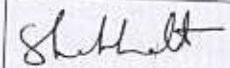
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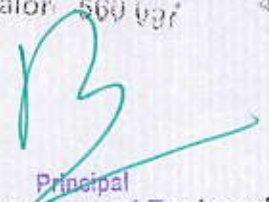
CIRCULAR

Date: 22/05/2017

This is to inform that there will be a meeting of Academic committee members for analyzing curriculum syllabus of academic year 2017-18. The meeting is scheduled on 23/05/2017 at 2.30 PM in M. Tech. Classroom.

Sl No.	Faculty Name	Designation	Signature
1.	Prof. Agalya P	Associate Professor	
2.	Prof. Shobha S	Associate Professor	
3.	Prof. Ravishankara M N	Associate Professor	
4.	Prof. Shobha I Hugar	Assistant professor	


Head of the Department
Electronics & Communication
Sapthagiri College of Engineering
Bangalore - 560 057


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Date: 23/05/2017

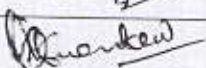
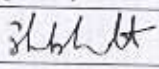
MINUTES OF MEETING

With reference to circular dated 22/05/2017, the academic committee members attended the meeting at the M. Tech. classroom for addressing the following agenda.

Agenda:

- Reviewing the department curriculum syllabus of Academic Year 2017-18
- Reviewing the feedback analysis from various stake holders for the academic year 2016-17
- Identifying the gaps
- Action to be taken for the identified gaps

The following members were present at the meeting

Sl No.	Faculty Name	Designation	Signature
1.	Prof. Agalya F	Associate Professor	
2.	Prof. Shobha S	Associate Professor	
3.	Prof. Ravishankara M N	Associate Professor	
4.	Prof. Shobha I Hugar	Assistant Professor	

The following points were discussed in the meeting

1. The committee members analysed of department curriculum syllabus.
2. The committee members discussed about the feedback of department curriculum syllabus.
3. The members identified the gaps based on the analysis.
4. The following actions were taken for the gaps identified.
5. The committee members identified in house faculties Prof. Agalya P. & Prof. Karthik N C as resource persons for this course

Sl. No.	Semester	Course Title	Identified Gap
1	VI-A/B	ARM Microcontroller and Embedded system Design	Not introduced to basic ARM Microcontroller concepts & Programming

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Sapthagiri College of Engineering
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Action Taken:

Based on the feedback obtained from Students, Faculties and Alumni and analysis of syllabus by department academic committee members, it was decided to conduct certification course on Advanced Embedded system Design using ARM Microcontrollers for 5th Semester students to overcome the gaps identified in the curriculum/syllabus.



HOD

Head of the Department
Electronics & Communication
Sapthagiri College of Engineering
Bangalore - 560 057.



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Sapthagiri College of Engineering
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ELECTRONICS & COMMUNICATION ENGINEERING

Date: 20/05/2017

To

IQAC Coordinator

Sapthagiri College of Engineering

Bengaluru-560 057

Respected sir/madam,

Subject: Requisition for conduction of certification course and approval from Governing Council.

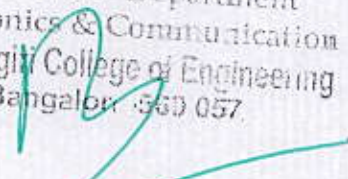
With respect to the subject above, a meeting of the academic committee members was held for analyzing department curriculum/syllabus for the academic year 2017-18. Certain gaps were identified by the committee members after analyzing the syllabus and feedback from stakeholders. To bridge the gaps identified in the curriculum, the committee members decided to conduct a certification course on Advanced Embedded system Design using ARM Microcontrollers for the academic year 2017-18. So, I request you to forward and get the approval from the governing council for the same.

Thanking You,

*Forwarded for the
GC approval / satisfaction
Jan*


HOD

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Electronics & Communication
Sapthagiri College of Engineering
Bengaluru - 560 057


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Sapthagiri College of Engineering
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ELECTRONICS & COMMUNICATION ENGINEERING

Date: 20/06/2017

To,

The IQAC Coordinator,
Sapthagiri College of Engineering,
Bengaluru - 560057

Respected Sir,

Subject: Budget Proposal for conduction of certification program on "Advanced Embedded System Design using ARM Microcontroller".

The Budget Proposal for conducting the certification program on Advanced Embedded Systems using ARM from 24-07-2017 to 28-07-2017 is hereby enclosed for your kind consideration and approval.

The details of the Recurring budget are given as follows:

Recurring Amount:

Sl. No.	Description	Quantity	Amount in Rs.
1	Bouquet	2	300
2	Certificates	Students	2000
3	Others		1000
Total			3300

*Forwarded to the
HC approval / certification
Jann.*

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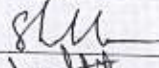
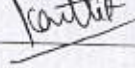
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ELECTRONICS & COMMUNICATION ENGINEERING

Date: 03/07/2017

CIRCULAR

This is to inform that the Academic Committee members are requested to attend the meeting on 04/07/2017 at 11:30 AM in M. Tech. classroom to decide the syllabus and the lesson plan for the certification program on "Advanced Embedded Systems Design using ARM Microcontrollers".

Sl No.	Faculty Name	Designation	Signature
1.	Prof. Agalya P	Associate Professor & Resource person	
2.	Prof. Shobha S	Associate Professor	
3.	Prof. Ravishankara M N	Associate Professor	
4.	Prof. Shobha I Hugar	Assistant Professor	
5.	Prof. karthik N C	Resource Person	


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Date: 04/07/2017

Minutes of Meeting

A meeting was held on 04/07/2017 at 11:30AM in the M. Tech. classroom to discuss and approve the following about the 5 days Certification Course for 5th semester ECE Students.

- **Course Title :** Advanced Embedded Systems Design using ARM Microcontrollers
- **Resource Personnel :** Prof. Agalya P, Assoc. Professor & Prof. Karthik N C, Lecturer, Dept of ECE, Sapthagiri College of Engineering, Bengaluru.
- **Course Duration & Date:** 5 Days from 24-07-2017 to 28-07-2017
- **Syllabus :**

Introduction to embedded system, ARM architectures, LPC1768 Pin Descriptions, Architecture, instruction set, Thumb and Thumb2 Instruction set, Introduction to cortex M3 assembly language programming, introduction to embedded C programming, GPIO programming, CMSIS, interfacing of keyboard, LCD, LED, Stepper and DC motors, relays, temperature sensor, bus interface AHB, AMBA, serial communication protocols – SPI, I²C, UART

Detailed Syllabus & Schedule

Date	Time	Topics	Hours
24.07.2017	8:30AM-10:15AM	Introduction to ARM, RISC Vs ARM	6.30hrs
	10:30 -12:30PM	Programming model, Advantages of ARM Processor	
	1:30PM – 3PM	Core Extensions, Architecture Revisions ARM Processor Families, ARM Registers	
	3:15PM – 4:30PM	Current Program Status Register AMBA Concept, Pipeline	
25.07.2017	8:30AM-10:15AM	Introduction to LPC 21XX series, System Connect Block	6.30hrs
	10:30 -12:30PM	Memory Mapping, Vectored Interrupt Controller, Pin Configuration	
	1:30PM – 3PM	Memory Mapping, Vectored Interrupt Controller, Pin Configuration	
	3:15PM – 4:30PM	Pin Connect Block, GPIO	
26.07.2017	8:30AM-10:15AM	Introduction to Keil Programming and Philips Utilities, Flash Magic	6.30hrs
	10:30 -12:30PM	Introduction to Keil Programming and Philips Utilities, Flash Magic	
	1:30PM – 3PM	Port Programming, LED control using switch	

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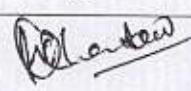
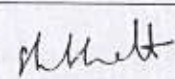
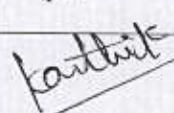
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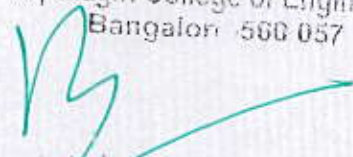
	3:15PM - 4:30PM	LCD Programming (4 Bit & 8 Bit)	
27.07.2017	8:30AM-10:15AM	DC & Stepper Motor interfacing	6.30hrs
	10:30 -12:30PM	Key Pad interfacing	
	1:30PM - 3PM	Programming ADC and DAC using LPC2148	
	3:15PM - 4:30PM	Programming UART0, UART1	
28.07.2017	8:30AM-10:15AM	Hands on session for programming Motor direction control	6.30hrs
	10:30 -12:30PM	Hands on session for programming UAFT 0 /1	
	1:30PM - 3PM	Hands on session for programming Keypad	
	3:15PM - 4:30PM	Hands on session for programming LCD	

The following members were present in the meeting and the syllabus and lesson plan for the certification program has been decided.

Sl. No.	Faculty Name	Designation	Signature
1.	Prof. Shobha S	Associate Professor	
2.	Prof. Ravishankara M N	Associate Professor	
3.	Prof. Shobha I Hugar	Assistant Professor	
4.	Prof. Agalya P	Guest Speaker	
5.	Prof. Karthik N C	Guest Speaker	


HOD

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17.07.2017

NOTICE

As a part of programming skill development Department of Electronics and Communication Engineering is conducting Five days Certification Course on **“Advanced Embedded Systems Design using ARM Microcontrollers”** from 24-07-2017 to 28-07-2017

All the 5th sem ECE students must attend the course compulsorily.



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Academic Year: 2017-18

List of Students enrolled for the certification course on "Advanced Embedded system Design using ARM Microcontrollers"

Sl. No	USN	Name of the Students	Semester & Sec
1.	ISG14EC009	AMAN KUMAR	V A
2.	ISG14EC026	DEEPA RAM	V A
3.	ISG14EC037	HARSHITH K GOWDA	V A
4.	ISG15EC001	ABHIJITH N	V A
5.	ISG15EC002	ABHISHEK K	V A
6.	ISG15EC003	ABHISHEK N	V A
7.	ISG15EC004	ADITYA P THAKKER	V A
8.	ISG15EC006	AISHWARYA G	V A
9.	ISG15EC007	AKHIL SINGH	V A
10.	ISG15EC008	ANJALI V JAKATI	V A
11.	ISG15EC009	ANJAN O	V A
12.	ISG15EC010	ANKIT PRIYAM	V A
13.	ISG15EC011	ANKIT SHIVHARE	V A
14.	ISG15EC012	ANN NILEENA HENRY C	V A
15.	ISG15EC013	ANU PRIYE	V A
16.	ISG15EC014	APOORVA G A	V A
17.	ISG15EC015	ARCHANA B S	V A
18.	ISG15EC016	ASHWANI GUPTA	V A
19.	ISG15EC017	ASHWIN V	V A
20.	ISG15EC018	B NIKHILESHWAR REDDY	V A
21.	ISG15EC019	BHAVYA R	V A
22.	ISG15EC020	BHOOMIKA J	V A
23.	ISG15EC021	BINDU B	V A
24.	ISG15EC022	BIPUL KUMAR	V A
25.	ISG15EC023	C S ADITH KIRAN	V A
26.	ISG15EC024	CHANDANA D L	V A
27.	ISG15EC025	CHIANNA BASAVA	V A
28.	ISG15EC026	CHARITHA B M	V A
29.	ISG15EC027	CHIRAG S	V A
30.	ISG15EC028	CHITHRA K	V A
31.	ISG15EC029	DARSHAN C	V A
32.	ISG15EC030	DHARMKIRTI KUMAR	V A
33.	ISG15EC031	DILIP V	V A
34.	ISG15EC032	DIVYA B	V A
35.	ISG15EC033	DIVYA R	V A
36.	ISG15EC034	GEETHA M	V A
37.	ISG15EC035	GIRISH S	V A
38.	ISG15EC036	GOUTHAM M	V A
39.	ISG15EC037	HARISH C	V A
40.	ISG15EC038	HARSHA K B	V A
41.	ISG15EC039	HARSHITHA L	V A

42.	ISG15EC040	HIMANSHU SHEKHAR	V A
43.	ISG15EC041	HIMANSHU TIWARI	V A
44.	ISG15EC042	K AKSHAYA	V A
45.	ISG15EC043	KANAKA LAKSHMI A	V A
46.	ISG15EC044	KANNIKA HEGDE	V A
47.	ISG15EC045	KARTHIK K	V A
48.	ISG15EC046	KAVYASHREE G S	V A
49.	ISG15EC047	KIRAN R	V A
50.	ISG15EC048	KOSLENDER SINGH	V A
51.	ISG15EC050	KOUSALYA S	V A
52.	ISG15EC051	KOUSHALYA D	V A
53.	ISG15EC052	KUMARI NEHA	V A
54.	ISG15EC053	LAVANYA M L	V A
55.	ISG15EC054	LINGARAJU L	V A
56.	ISG15EC056	MANJUNATHA NAIK N	V A
57.	ISG15EC057	MANOJ G	V A
58.	ISG16EC400	ANUSHA R	V A
59.	ISG16EC401	ANUSHA S	V A
60.	ISG16EC402	ANUSHA V MURTHY	V A
61.	ISG16EC403	ARCHANA Y	V A
62.	ISG16EC404	ASHWINI S	V A
63.	ISG16EC405	BANADESH	V A
64.	ISG16EC406	BHANU PRIYA M	V A
65.	ISG16EC407	BHARATHI V	V A
66.	ISG16EC408	BHARATHI Y C	V A
67.	ISG16EC409	DIVYA P	V A
68.	ISG16EC410	DIVYASHREE M R	V A
69.	ISG16EC411	GANESH G	V A
70.	ISG16EC412	KAVYASHREE N	V A
71.	ISG16EC414	PAVAN RAJ R	V A
72.	ISG16EC419	RAHUL SINGH S	V A
73.	ISG16EC424	SHARATH P	V A
74.	ISG16EC426	SOMASHEKAR D K	V A
75.	ISG16EC432	VENKATESH S HALLI	V A
76.	ISG16EC433	VINAY R	V A
77.	ISG13EC088	RANJITHA R	V B
78.	ISG13EC131	RAMYA S K JADAV	V B
79.	ISG15EC058	MANU RAJ SINGH	V B
80.	ISG15EC059	MEGHANA A S	V B
81.	ISG15EC060	MOHAMMED SHAHID	V B
82.	ISG15EC061	MOHAN VARMA K	V B
83.	ISG15EC062	MOHIT SHARMA	V B
84.	ISG15EC064	NAYANA H J	V B
85.	ISG15EC065	NEHA S	V B
86.	ISG15EC066	NIDA SULTHANA N	V B
87.	ISG15EC067	NIKHIL R A	V B
88.	ISG15EC069	NISHANT KUMAR	V B

89.	ISG15EC070	NIVEDITHA M	V B
90.	ISG15EC071	NIVEDITHA S	V B
91.	ISG15EC072	PAVITHRA J	V B
92.	ISG15EC073	PAVITRA	V B
93.	ISG15EC074	POOJA R	V B
94.	ISG15EC075	POOJA S BHAT	V B
95.	ISG15EC076	PRAJWAL K	V B
96.	ISG15EC077	PRAJWAL S	V B
97.	ISG15EC078	PRASHANT RAJPUT	V B
98.	ISG15EC079	PRASHANT SRIVASTAVA	V B
99.	ISG15EC080	PRATEEK KUMAR THAKUR	V B
100.	ISG15EC081	PRATHIBHA K	V B
101.	ISG15EC082	PREMA K S	V B
102.	ISG15EC083	PRIYADARSHINI C	V B
103.	ISG15EC084	PRUTHVI R	V B
104.	ISG15EC085	R REKHA	V B
105.	ISG15EC086	RAJ KUMAR	V B
106.	ISG15EC087	RAKSHA G R	V B
107.	ISG15EC088	RANJAN S	V B
108.	ISG15EC089	RANJITH GOWDA B	V B
109.	ISG15EC090	RAVI C	V B
110.	ISG15EC091	SAI SIDDHARTH M	V B
111.	ISG15EC092	SANDHYA V	V B
112.	ISG15EC093	SANDHYA Y G	V B
113.	ISG15EC094	SANJANA A S	V B
114.	ISG15EC095	SANJAY KUMAR B N	V B
115.	ISG15EC098	SHASHANK H S	V B
116.	ISG15EC099	SHASHANK SHEKHAR	V B
117.	ISG15EC100	SHASHIKANT KUMAR	V B
118.	ISG15EC101	SHRISHI JHA	V B
119.	ISG15EC102	SHUBHAM KUMAR	V B
120.	ISG15EC103	SHUBHAM KUMAR	V B
121.	ISG15EC104	SHUBHAM KUMAR MISHRA	V B
122.	ISG15EC105	SMITHA B BIRADAR	V B
123.	ISG15EC107	SUBHAM SHEKHAR PANDEY	V B
124.	ISG15EC108	SUKANYA KRISHNA POOJARI	V B
125.	ISG15EC110	SUMALATHA N	V B
126.	ISG15EC111	USHA KIRAN S	V B
127.	ISG15EC112	VAISHNAVI R SHETTY	V B
128.	ISG15EC113	VARSHINI N	V B
129.	ISG15EC114	VEERESH M	V B
130.	ISG15EC115	VIKAS KASHYAP	V B
131.	ISG15EC116	VINAYAKA L S	V B
132.	ISG16EC413	MANJUNATHA B	V B
133.	ISG16EC415	POOJA J	V B
134.	ISG16EC416	PRAJWAL R	V B
135.	ISG16EC417	PRASHANTH J	V B

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136.	ISG16EC418	R PRASHANTH	VB
137.	ISG16EC420	RAJESHWARI R	VB
138.	ISG16EC421	RAMYA T K	VB
139.	ISG16EC422	SAMITHA M	VB
140.	ISG16EC423	SHAKUNTALA	VB
141.	ISG16EC425	SHIVA S	VB
142.	ISG16EC427	STEEVEN MENEGES	VB
143.	ISG16EC428	TOUFIQ KAGWDAKAR	VB
144.	ISG16EC429	UMA R	VB
145.	ISG16EC430	VAIBHAVI G GUMASTE	VB
146.	ISG16EC431	VARUN KUMAR S	VB


Coordinator


Head of the Department
Electronics & Communication
Sapthagiri College of Engineering
Bangalore -560 057


Principal
Sapthagiri College of Engineering
14/5, Chikkasandra, Hesaraghatta Main Road
Bengaluru - 560 057

Academic Year : 2017-18

List of Students enrolled for the certification course on "Advanced Embedded system Design using ARM Microcontrollers"

Sl. No	USN	Name of the Students	24.07.2017		25.07.2017		26.07.2017		27.07.2017		28.07.2017	
			MS	AS	MS	AS	MS	AS	MS	AS	MS	AS
1.	ISG14EC009	AMAN KUMAR	1	2	3	3	4	5	6	7	8	9
2.	ISG14EC026	DEEPA RAM	1	2	2	3	4	5	6	7	8	9
3.	ISG14EC037	HARSHITH K GOWDA	1	2	3	3	4	5	6	7	8	9
4.	ISG15EC001	ABHIJITH N	1	2	3	4	5	6	7	8	9	10
5.	ISG15EC002	ABHISHEK E	1	2	3	3	4	5	6	7	8	9
6.	ISG15EC003	ABHISHEK N	1	2	3	4	5	5	6	7	8	9
7.	ISG15EC004	ADITYA P THAKKER	1	2	3	4	5	6	7	8	9	10
8.	ISG15EC006	AISHWARYA C	1	1	2	3	4	5	6	7	8	9
9.	ISG15EC007	AKHIL SINGH	1	2	3	4	5	6	7	8	9	10
10.	ISG15EC008	ANJALI V JAEATI	1	2	3	3	4	5	5	6	7	8
11.	ISG15EC009	ANJAN C	1	2	3	4	5	5	6	7	8	9
12.	ISG15EC010	ANKIT PRIYAM	1	2	2	3	4	5	6	7	8	9
13.	ISG15EC011	ANKIT SHIVHALE	0	1	2	3	4	5	6	7	8	9
14.	ISG15EC012	ANN NILHENA HENRY C	1	2	3	4	5	6	7	8	9	10
15.	ISG15EC013	ANU PRIY E	1	2	3	4	5	6	7	8	9	10
16.	ISG15EC014	APOORVA G A	1	2	3	4	4	5	6	7	8	9
17.	ISG15EC015	ARCHANA B S	1	2	3	4	5	6	7	8	9	10
18.	ISG15EC016	ASHWANI GUPTA	1	2	3	4	5	6	7	7	8	9
19.	ISG15EC017	ASHWIN V	1	2	2	3	4	5	6	7	7	8
20.	ISG15EC018	B NIKHILESHWAR REDDY	1	2	3	4	5	6	7	8	8	9

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	ISG15EC019	BHAVYA E.	0	1	2	3	4	4	5	6	7	8
22.	ISG15EC020	BHOOMIKA J	1	2	2	3	4	4	5	6	7	8
23.	ISG15EC021	BINDU B	1	2	2	3	3	4	5	5	6	7
24.	ISG15EC022	BIPUL KUMAR	1	1	2	3	4	5	6	7	8	9
25.	ISG15EC023	C S ADITHYAN	1	1	2	3	3	4	5	6	7	8
26.	ISG15EC024	CHANDANA D L	1	2	3	4	5	6	7	8	9	10
27.	ISG15EC025	CHANNA BASAVA	1	2	2	3	4	5	6	7	8	9
28.	ISG15EC026	CHARITHA M	1	2	3	4	5	6	7	8	9	10
29.	ISG15EC027	CHIRAC S	1	2	2	3	4	4	5	6	7	8
30.	ISG15EC028	CHITHRA K	1	2	3	3	4	4	5	5	6	7
31.	ISG15EC029	DARSHAN C	1	2	3	4	5	6	7	8	9	10
32.	ISG15EC030	DHARMKIRTI KUMAR	1	2	3	3	3	4	4	5	6	7
33.	ISG15EC031	DILIP V	1	2	3	4	5	6	7	8	9	10
34.	ISG15EC032	DIVYA B	1	2	2	3	4	5	6	7	8	9
35.	ISG15EC033	DIVYA R	1	2	3	4	5	6	7	8	9	10
36.	ISG15EC034	GEETHA M	1	2	2	3	3	4	5	6	7	8
37.	ISG15EC035	GIRISH S	1	2	2	3	3	4	5	6	7	8
38.	ISG15EC036	GOUTHAM M	1	2	3	4	5	6	7	8	9	10
39.	ISG15EC037	HARISH C	1	2	2	2	2	3	4	5	6	7
40.	ISG15EC038	HARSHA K B	1	2	3	4	5	6	7	8	9	10
41.	ISG15EC039	HARSHITHA L	1	2	3	4	5	5	6	6	7	8
42.	ISG15EC040	HIMANSHU SHEKHAR	1	2	3	4	5	6	7	8	9	10
43.	ISG15EC041	HIMANSHU TIWARI	1	2	3	4	5	5	6	6	6	7
44.	ISG15EC042	KAKSHAYA	1	2	3	4	5	5	7	8	9	10

	ISG15EC043	KANAKA LAKSHMI A	0	1	2	3	3	4	5	6	6	7
46.	ISG15EC044	KANNIKA HEGDE	1	2	3	4	5	6	7	8	9	10
47.	ISG15EC045	KARTHIK K	1	1	2	3	3	4	5	6	7	8
48.	ISG15EC046	KAVYA SHREE G S	1	2	3	3	4	5	6	7	8	9
49.	ISG15EC047	KIRAN R	1	1	2	3	3	4	5	6	7	8
50.	ISG15EC048	KOSLENER SINGH	1	2	3	4	5	6	7	8	9	10
51.	ISG15EC050	KOUSALYA S	1	2	2	3	3	4	5	6	7	8
52.	ISG15EC051	KOUSHALYA D	1	2	3	3	4	5	6	7	8	9
53.	ISG15EC052	KUMARI NEHA	1	2	3	4	5	6	7	8	9	10
54.	ISG15EC053	LAVANYA M L	1	1	2	3	3	4	5	6	7	8
55.	ISG15EC054	LINGARAJU L	1	2	3	3	4	5	6	7	8	9
56.	ISG15EC056	MANJUNATHA NAIK N	1	2	3	4	5	6	7	8	9	10
57.	ISG15EC057	MANOJ G	1	2	3	4	5	6	7	8	9	10
58.	ISG16EC400	ANUSHA R	1	2	3	3	4	5	6	7	8	9
59.	ISG16EC401	ANUSHA S	1	1	2	3	4	5	6	6	7	8
60.	ISG16EC402	ANUSHA V MURTHY	1	2	3	4	5	6	7	8	9	10
61.	ISG16EC403	ARCHANA Y	1	2	3	3	4	5	5	6	7	8
62.	ISG16EC404	ASHWINIS	1	2	3	4	5	6	7	8	9	10
63.	ISG16EC405	BANADESH	1	1	2	2	3	4	5	6	7	8
64.	ISG16EC406	BHANUPRIYA M	1	2	3	4	5	6	7	8	9	10
65.	ISG16EC407	BHARATHI V	1	2	3	3	4	5	5	6	7	8
66.	ISG16EC408	BHARATHI Y C	1	2	3	4	5	6	7	8	9	10
67.	ISG16EC409	DIVYA P	1	2	3	4	4	4	5	6	7	8
68.	ISG16EC410	DIVYASHREE M R	1	2	3	4	5	6	7	8	8	9

	ISG16EC411	GANESH G	1	2	3	4	5	5	6	7	7	8
70.	ISG16EC412	KAVYASHREE N	1	2	2	3	4	4	5	6	7	8
71.	ISG16EC414	PAVAN RAJR	1	1	2	2	3	3	4	5	6	7
72.	ISG16EC419	RAHUL SINGH S	1	2	3	3	3	4	5	6	7	8
73.	ISG16EC424	SHARATH P	1	2	2	3	4	5	5	6	7	8
74.	ISG16EC426	SOMASHEKAR D K	1	2	3	3	3	4	5	6	7	8
75.	ISG16EC432	VENKATESH S HALLI	1	2	2	3	4	5	6	6	7	8
76.	ISG16EC433	VINAY R	1	2	3	3	3	4	5	6	7	8
77.	ISG13EC088	RANJITHAR	1	2	3	4	5	5	6	7	8	9
78.	ISG13EC131	RAMYA S K JADAV	1	2	3	3	3	3	4	5	6	7
79.	ISG15EC058	MANU RAJ SINGH	1	2	2	3	4	5	6	7	8	9
80.	ISG15EC059	MEGHANA A S	1	2	2	3	4	4	5	6	7	8
81.	ISG15EC060	MOHAMMED SHAHID	1	2	2	3	4	5	6	7	8	9
82.	ISG15EC061	MOHAN VARMA K	1	1	2	3	4	4	5	6	7	8
83.	ISG15EC062	MOHIT SHAZMA	1	2	2	3	3	4	5	6	7	8
84.	ISG15EC064	NAYANA H J	1	2	2	3	4	5	6	7	8	9
85.	ISG15EC065	NEHA S	1	2	3	4	4	5	6	7	8	9
86.	ISG15EC066	NIDA SULTHANA N	1	2	3	3	4	5	6	7	8	9
87.	ISG15EC067	NIKHIL R A	1	2	3	4	5	6	7	7	8	9
88.	ISG15EC069	NISHANT KUMAR	1	2	3	4	5	6	7	7	7	8
89.	ISG15EC070	NIVEDITHA M	1	2	3	4	5	6	7	8	9	10
90.	ISG15EC071	NIVEDITHA S	1	2	3	4	5	6	7	8	9	10
91.	ISG15EC072	PAVITHRA J	1	2	2	3	4	5	6	7	7	8
92.	ISG15EC073	PAVITRA	1	2	3	4	5	5	6	7	8	9

	ISG15EC074	POOJA R	0	1	2	3	4	5	6	7	8
94	ISG15EC075	POOJA S BEAT	1	2	3	3	4	5	5	6	7 8
95	ISG15EC076	PRAJWAL K	1	2	3	3	4	4	5	6	7 8
96	ISG15EC077	PRAJWAL S	1	2	3	4	5	6	7	8	9 10
97	ISG15EC078	PRASHANT RAJPUT	1	1	2	3	4	5	6	7	8 9
98	ISG15EC079	PRASHANT SRIVASTAVA	1	2	3	4	5	6	7	8	9 10
99	ISG15EC080	PRATEEK KUMAR THAKUR	1	2	3	4	4	5	5	6	7 8
100	ISG15EC081	PRATHIBHA K	1	2	3	4	5	6	7	8	9 10
101	ISG15EC082	PREMA K S	1	1	2	3	3	4	5	6	7 8
102	ISG15EC083	PRIYADARSHINI C	1	2	3	3	4	5	5	6	7 8
103	ISG15EC084	PRUTHVI R	1	2	3	4	5	6	7	8	9 10
104	ISG15EC085	R REKHA	1	2	2	3	4	5	6	7	8 9
105	ISG15EC086	RAJ KUMAR	1	2	3	4	5	5	6	7	8 9
106	ISG15EC087	RAKSHA G R	1	2	2	3	4	4	5	6	7 8
107	ISG15EC088	RANJAN S	1	2	3	4	5	6	7	8	9 10
108	ISG15EC089	RANJITH GOWDA B	1	2	2	3	3	4	5	6	7 8
109	ISG15EC090	RAVIC	1	2	3	4	5	5	6	7	8 9
110	ISG15EC091	SAI SIDDHARTH M	1	2	3	4	5	6	7	8	9 10
111	ISG15EC092	SANDHYA V	1	2	2	3	4	4	5	6	7 8
112	ISG15EC093	SANDHYA Y G	1	2	3	4	5	6	7	8	9 10
113	ISG15EC094	SANJANA A S	1	1	2	2	3	4	5	6	7 8
114	ISG15EC095	SANJAY KUMAR B N	1	2	3	4	4	4	5	6	7 8
115	ISG15EC098	SHASHANK H S	1	2	3	4	5	6	7	8	9 10
116	ISG15EC099	SHASHANK SHEKHAR	1	2	2	3	4	5	6	7	8 9

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	ISG15EC100	SHASHIKANT KUMAR	0	1	2	3	4	5	5	6	7	8
118	ISG15EC101	SHERSH JHA	1	2	3	4	4	5	6	7	8	9
119	ISG15EC102	SHUBHAM KUMAR	1	2	2	3	4	5	5	6	7	8
120	ISG15EC103	SHUBHAM KUMAR	0	1	2	3	4	5	6	7	8	9
121	ISG15EC104	SHUBHAM KUMAR MISRA	1	2	3	3	4	5	6	7	8	9
122	ISG15EC105	SMITHA B BIFADAR	1	2	2	3	4	5	6	7	8	9
123	ISG15EC107	SUBHAM SHEKHAR PANDEY	1	2	3	4	5	6	6	7	8	9
124	ISG15EC108	SUKANYA KRISHNA POOJARI	1	2	3	3	4	5	6	7	8	9
125	ISG15EC110	SUMALATHA N	1	2	3	4	5	6	7	8	9	10
126	ISG15EC111	USHA KIRAN S	1	1	2	3	4	4	5	6	7	8
127	ISG15EC112	VAISENAVI R SHETTY	1	2	3	3	4	5	5	6	7	8
128	ISG15EC113	VARSHINI N	1	2	3	4	5	6	7	8	9	10
129	ISG15EC114	VEERESH M	1	1	2	2	3	4	5	6	7	8
130	ISG15EC115	VIKAS KASHYAP	1	2	3	4	4	5	6	7	8	9
131	ISG15EC115	VINAYAKA L S	1	2	2	3	4	5	6	7	8	9
132	ISG16EC413	MANJUNATHA B	1	2	3	4	5	5	6	7	8	9
133	ISG16EC415	POOJA J	1	1	2	3	4	5	6	7	7	8
134	ISG16EC416	PRAJWAL R	1	2	2	3	3	4	5	6	7	8
135	ISG16EC417	PRASHANTH J	0	1	2	3	4	5	6	7	8	8
136	ISG16EC418	R PRASHANTH	1	2	3	3	3	4	5	6	7	8
137	ISG16EC420	RAJESHWARI R	0	1	2	3	4	5	6	6	7	8
138	ISG16EC421	RAMA T K	1	2	3	4	5	5	6	7	7	8
139	ISG16EC422	SAMITHA M	1	2	2	3	4	5	6	7	8	9
140	ISG16EC423	SHAKUNTALA	1	2	3	4	5	6	7	8	9	9

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ELECTRONICS & COMMUNICATION ENGINEERING

**5 days Certification Course on "Advanced Embedded Systems Design using ARM
Microcontrollers"**
Question Paper

Duration: 60 Mins

Maximum marks: 50M

Date: 04-08-2017

Question No. 1-15 (1.5 M Each)

Question No. 16 & 17 (10 M Each)

Answer all the Questions:

1. What is the processor used by ARM7?

- a) 8-bit CISC
- b) 8-bit RISC
- c) 32-bit CISC
- d) 32-bit RISC

2. What is the instruction set used by ARM7?

- a) 16-bit instruction set
- b) 32-bit instruction set
- c) 64-bit instruction set
- d) 8-bit instruction set

3. How many registers are there in ARM7?

- a) 35 register(28 GPR and 7 SPR)
- b) 37 registers(28 GPR and 9 SPR)
- c) 37 registers(31 GPR and 6 SPR)
- d) 35 register(30 GPR and 5 SPR)

4. ARM7 has an in-built debugging device?

- a) True
- b) False

5. What is the capability of ARM7 f instruction for a second?

- a) 110 MIPS
- b) 150 MIPS
- c) 125 MIPS
- d) 130 MIPS


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6. We have no use of having silicon customization?

- a) True
- b) False

7. Which of the following has the same instruction set as ARM7?

- a) ARM6
- b) ARMv3
- c) ARM71a0
- d) ARMv4T

8. What are t, d, m, I stands for in ARM7TDMI?

- a) Timer, Debug, Multiplex, ICE
- b) Thumb, Debug, Multiplier, ICE
- c) Timer, Debug, Modulation, IS
- d) Thumb, Debug, Multiplier, ICE

9. ARM stands for _____

- a) Advanced RISC Machine
- b) Advanced RISC Methodology
- c) Advanced Reduced Machine
- d) Advanced Reduced Methodology

10. What are the profiles for ARM architecture?

- a) A,R
- b) A,M
- c) A,R,M
- d) R,M

11. ARM7DI operates in which mode?

- a) Big Endian
- b) Little Endian
- c) Both big and little Endian
- d) Neither big nor little Endian

12. In which of the following ARM processors virtual memory is present?

- a) ARM7DI
- b) ARM7TDMI-S
- c) ARM7TDMI
- d) ARM7EJ-S

13. How many instructions pipelining is used in ARM7EJ-S?



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- a) 3-Stage
- b) 4-Stage
- c) 5-Stage
- d) 2-stage

14. How many bit data bus is used in ARM7EJ-s?

- a) 32-bit
- b) 16-bit
- c) 8-bit
- d) Both 16 and 32 bit

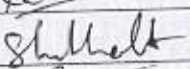
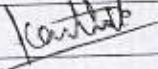
15. What is the cache memory for ARM710T?

- a) 12Kb
- b) 16Kb
- c) 32Kb
- d) 8Kb

16. Write an ALP to add the integers from 1 to 10.

17. Write an Embedded C program to control a buzzer and LED through switches using LPC2148.

Approved by Academic Committee Members & Guest Speaker

Sl. No.	Faculty Name	Designation	Signature
1.	Prof. Shobha S	Associate Professor	
2.	Prof. Ravishankara M N	Associate Professor	
3.	Prof. Shobha I Hugar	Assistant Professor	
4.	Prof. Agalya P	Resource Person	
5.	Prof. Karthik N C	Resource Person	



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HOD
Head of the Department
Electronics & Communication
Sapthagiri College of Engineering
Bangalore - 560 057

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Solutions

1. Answer: c
2. Answer: a
3. Answer: c
4. Answer: a
5. Answer: d
6. Answer: b
7. Answer: b
8. Answer: b
9. Answer: a
10. Answer: c
11. Answer: c
12. Answer: a
13. Answer: c
14. Answer: a
15. Answer: d
16. Program to add 1+2+3.....+10.

```
#include <LPC17xx.H>
#include "Lcd.h"

extern void sumten(void);    //Name of assembly routine
extern unsigned int globvar; //global variable to access at asm code

unsigned int globvar;

int main(void)
{
    SystemInit();
    sumten();    //calling asm code

    LCD_DISP(globvar);    //display the result on LCD

    while(1);
}

THUMB
AREA sum, CODE, READONLY
EXPORT DVALUE
EXPORT sumten
IMPORT globvar
ENTRY
```


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```
sumten
MOV R1,#10          ; load 10 to register
MOV R2,#0           ; empty the register to store result
loop
ADD R2,R2,R1        ; add the content of R1 with result at R2
SUBS R1,#0x01       ; Decreament R1 by 1
BNE loop            ; repeat till r1 goes 0

LDR R0,=globvar ; load the addr of var into R0
STR R2,[R0]       ; store the result into addrs location

BX LR              ; jumps back to C code
```

```
AREA DATA1,DATA,READWRITE
DVALUE
DCD 0x00000000;
ALIGN
```

17. Program

```
#include <LPC17xx.H>          /* NXP LPC17xx definitions */

#define KEY1    (1 << 14)    //p1.14
#define KEY2    (1 << 15)    //p1.15
#define LED     (1 << 4)     //p0.4
#define BUZZ    (1 << 25)    //p3.25
#define KEY_PIN  LPC_GPIO1->FIOPIN

/*-----
Main Program
*-----*/

int main (void)
{
    LPC_GPIO0->FIODIR |= LED; /* LED on PORT0 output */
    LPC_GPIO0->FIOCLR = LED; //LED off
    LPC_GPIO3->FIODIR |= BUZZ; /* BUZZER on PORT3 output */
    LPC_GPIO3->FIOCLR = BUZZ; //BUZZER off
    LPC_GPIO1->FIODIR &= ~(KEY1 | KEY2 | KEY3); //keys input
    LPC_GPIO1->FIOSET = (KEY1 | KEY2 | KEY3); //keys pullup
    while(1)
    {
        if (!(KEY_PIN & KEY1))
            LPC_GPIO0->FIOSET = LED;
    }
}
```



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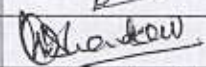
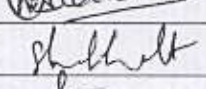
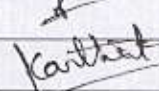
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```
LPC_GPIO0->FIOCLR = LED;

if (!(KEY_PIN & KEY2))
    LPC_GPIO3->FIOSET = BUZZ;
else
    LPC_GPIO3->FIOCLR = BUZZ;
}
}
```

Approved by Academic Committee Members & Guest Speaker

Sl. No.	Faculty Name	Designation	Signature
1.	Prof. Shobha S	Associate Professor	
2.	Prof. Ravishankara M N	Associate Professor	
3.	Prof. Shobha I Hugar	Assistant Professor	
4.	Prof. Agalya P	Guest Speaker	
5.	Prof. Karthik N C	Guest Speaker	


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ELECTRONICS AND COMMUNICATION ENGINEERING

5 days Certification Course on "Advanced Embedded System Design using ARM Microcontrollers"

Participant Feedback

1. How was the overall organization of the Certification Course ?
a) Poor b) Satisfactory c) Good d) ~~Excellent~~
2. How appropriate were the facilities provided ?
a) Poor b) Satisfactory c) Good d) ~~Excellent~~
3. Opportunity to ask questions for clarification and interaction with presenters
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4. Effectiveness of the Hands-on Sessions
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5. Topic and contents of the Certification Course
a) Poor b) Satisfactory c) Good d) ~~Excellent~~
6. How do you rate the Certification Course compared to other workshops that you have attended ?
a) Poor b) Satisfactory c) Good d) ~~Excellent~~
7. Generally how was your overall experience during the Certification Course
a) Poor b) Satisfactory c) Good d) ~~Excellent~~
8. Any Suggestions:

Banadish
Student Name

Banadish
Student Signature

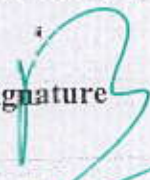
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8. Any Suggestions:

Ankit Priyam
Student Name


Student Signature


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Principal
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8. Any Suggestions:

Chirag
Student Name

[Signature]
Student Signature

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5 days Certification Course on "Advanced Embedded System Design

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8. Any Suggestions:

Student Name

Student Signature

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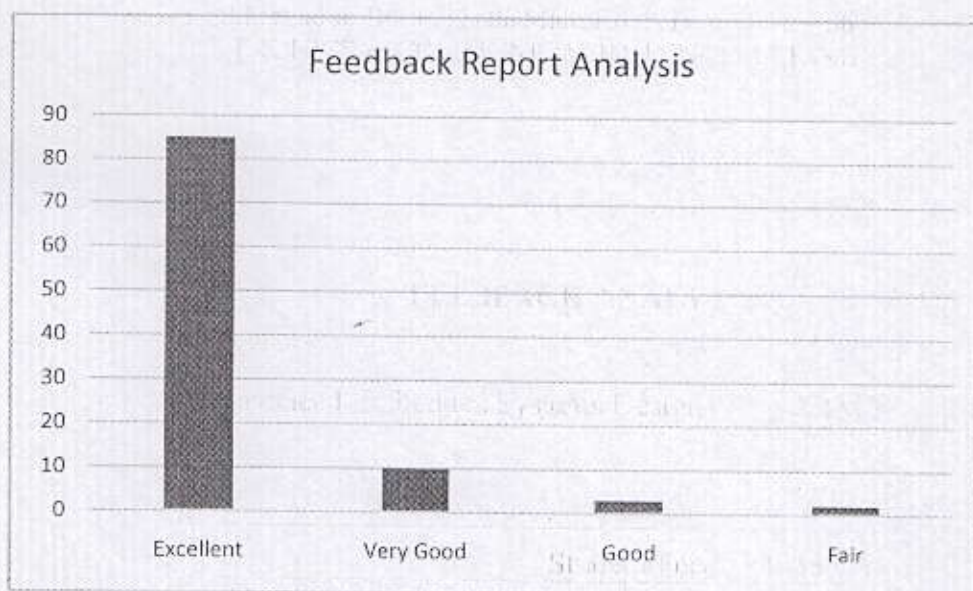
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FEEDBACK ANALYSIS

Certification Program: "Advanced Embedded Systems Design using ARM Microcontrollers"

No. of students	Student Feedback (in %)			
	Excellent	Very Good	Good	Fair
87	89	8	2	1



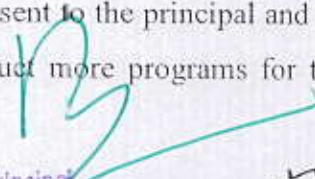
Action Report:

89 % of students were completely happy with the certification program and 8 % of students felt it was a good program and remaining 3 % students were satisfied with the program.

Action Taken:

The Feedback report which was collected from the students were sent to the principal and he would take necessary actions based on the comments and conduct more programs for the benefit of students.


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ELECTRONICS & COMMUNICATION ENGINEERING

Certification Course Report

Department of ECE conducted Certificate Course on Advanced Embedded Systems Design using ARM Microcontroller.

- **Guest Speaker:** Prof. Agalya P, Associate Professor & Prof. Karthik N C, Assistant Professor, Department of ECE, Sapthagiri College of Engineering, Bengaluru.
- **Duration of the course :** Five days from 24-07-2017 to 28-07-2017

Objective of the Course: The five day course made the students to be familiar with the concepts of Embedded Systems. Certification Course became the vital step to improve the knowledge of students

Day wise Report of the certification course

Date	Topics
24.07.2017	Speaker delivered lecture on Introduction to ARM processor and its programming model
25.07.2017	Speaker delivered lecture on Introduction to LPC 21XX series, and its pin configuration
26.07.2017	Speaker delivered lecture on Introduction to Keil Programming, Philips Utilities and Flash Magic
27.07.2017	Students learnt interfacing of IO devices
28.07.2017	Students had Hands on session for programming the interface devices.

Students attending Certification Course with Resource Person



Conclusion: This 5 days certification course on Advanced Embedded system design using ARM Microcontrollers made the students comfortable with programming using ARM

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Microcontrollers and its application in the design of Embedded Systems The optimistic learning environment prompted motivation in the learning of the students. They felt bonhomie after the course they took. A sense of satisfaction was also seen. Faculty members were also equally benefited with the course. A structured environment was created. This helped in the smooth flow of academic lesson plan by adhering to the timelines. This Course helped the student to improve their knowledge in Embedded Systems Design.



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Electronics & Communication
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DEPARTMENT OF ELECTRONICS AND COMMUNICATION

Five days certification course on

"ADVANCED EMBEDDED SYSTEM DESIGN using ARM MICROCONTROLLERS"

CERTIFICATE

This is to certify that Mr/Mshas attended
five days certification course on "ADVANCED EMBEDDED SYSTEM DESIGN using
ARM MICROCONTROLLERS" organized by the Department of Electronics and
Communication Engineering, Sapthagiri college of Engineering, Bengaluru from 24th
July to 28th July 2017.

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S.C.E., Bengaluru

Principal
S.C.E., Bengaluru


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Five days certification course on

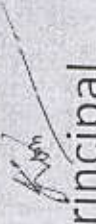
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CERTIFICATE

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