



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	2013 - 2014
Branch	ECE
Name of the Student	Abhishek Kumar
USN	18612EC003

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: Conduction of some certified courses like Arduino so that we can do our projects (Final year Projects)

Signature

Principal

Sapthagiri College of Engineering
14/5, Chikkasandra, Hesareghatta 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	2013-2014
Branch	RCE
Name of the Faculty	PRATHIBHA P.
Designation	ASST. PROF.
Subject/Sub. code	BASIC ELECTRONICS

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:

Signature

The course enable the students to implement the knowledge, what they have gained in their semester in microcontroller, to implement practically on projects. Arduino is one of the most popular microcontroller to implement educational & industrial related projects.



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ALUMNI 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	2012
Branch	BCE
Name	Sampath Hegde
Status : Work/Study	working In Bosch
Phone no.	9138465089

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: suggested to include userfriendly microcontrollers supporting industry support

Signature

knowledge
 Sampath

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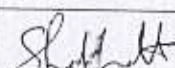
SAPTHAGIRI COLLEGE OF ENGINEERING

ELECTRONICS AND COMMUNICATION ENGINEERING

CIRCULAR

Date: 24/05/2014

This is to inform that there will be a meeting of Academic committee members for analyzing curriculum syllabus of academic year 2014-15. The meeting is scheduled on 26/05/2014 at 10.30 AM in HOD's chamber.

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	


HOD

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SAPTHAGIRI COLLEGE OF ENGINEERING

ELECTRONICS AND COMMUNICATION ENGINEERING

Date: 26/05/2014

MINUTES OF MEETING

With reference to circular dated on 24/05/2014, the academic committee member meeting started in HODs chamber at 10:30 AM on 26.05.2014 for addressing the following agenda.

Agenda:

- Reviewing the department curriculum syllabus of Academic Year 2014-15
- Reviewing the feedback analysis from different stake holders for the Academic Year 2013-14
- Identifying the gaps
- Action to be taken for the identified gaps.

During the meeting the following members were present

Sl No.	Faculty Name	Designation
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

The following points were discussed in the meeting

1. The committee members analysed the 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 that are identified.




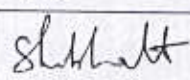
SL.NO	SEM	Course Title	Identified Gap
1	IV-A/B	Microcontroller	Need for introduction to user friendly Microcontroller Circuit boards

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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 ARDUINO Programming and its Applications to overcome the gaps identified in the curriculum/syllabus.

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	
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SAPTHAGIRI COLLEGE OF ENGINEERING
ELECTRONICS AND COMMUNICATION ENGINEERING

Date:27/05/2014

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 Academic committee members meeting was held for analyzing department curriculum/syllabus for the academic year 2014-15. The committee members identified few gaps after analyzing the syllabus and feedback from the stakeholders. To bridge the gaps identified in the curriculum, the committee members decided to conduct a certification course on ARDUINO programming and its Applications for the academic year 2014-15. So, I request you to forward and get the approval from the governing council for the same.

Thanking You,



HCD

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

*Forwarded to the
Ac approval / ratification
[Signature]*



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SAPTHAGIRI COLLEGE OF ENGINEERING

ELECTRONICS AND COMMUNICATION ENGINEERING

Date: 27-05-2014

To,

THE IQAC Coordinator
Sapthagiri College of Engineering
Bangalore - 560057.

Respected Sir,

Subject: Budget Proposal for conduction of certification program on "ARDUINO PROGRAMMING AND ITS APPLICATIONS"

The Budget Proposal for conduction a certification program on "Arduino Programming and its applications" from 19-Jan-2015 to 23-Jan-2015 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	200
2	Certificates	No. of Students	2000
3	Others	1	1000
Total			3200

Forwarded for the
Gc approval / ratification
[Signature]

[Signature]
HOD

Head of the Department
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[Signature]
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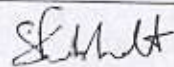
SAPTHAGIRI COLLEGE OF ENGINEERING

ELECTRONICS AND COMMUNICATION ENGINEERING

Date 09-01-2015

CIRCULAR

This is to inform that the following Academic Committee members are requested to attend the meeting on 10/01/2015 at 11AM in the HODs chamber to decide the syllabus and the lesson plan for the certification program on "ARDUINO Programming and its Applications"

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	


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SAPTHAGIRI COLLEGE OF ENGINEERING
ELECTRONICS AND COMMUNICATION ENGINEERING

Date 09-01-2015

To,

Dr. Dinesh Anwekar
Professor and HOD
Department of CSE,
Nitte Meenakshi Institute of Technology
Bangalore - 560057.

Respected Sir,

Subject: Invitation as a "Guest Speaker" in certification program and to attend meeting to discuss about the certification program

Department of Electronics & Communication Engineering have planned to conduct a certification program titled "ARDUINO Programming and its Applications" for 6th semester students from 19-Jan-2015 to 23-Jan-2015. In this connection, we are privileged to invite you as a guest speaker on the above mentioned topic.

Thanking you for your kind acceptance to our request on phone. We request you to attend the meeting to discuss about the conduction of certification course on 10/01/2015 at 11AM. We look forward to welcome you at SCE.

Thanking you

Yours faithfully

HOD

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

Principal
Sapthagiri College of Engineering
14/5, Chikkasandra, Heeraghatta Main Road
Bangalore - 560 057

10.01.2015

Minutes of Meeting

A meeting was conducted on 10th Jan 2015 at 11 AM in ECE HOD's Chamber to discuss and approve the following about the 5 days Certification Course for 6th semester ECE Students.

- **Course Title :** ARDUINO Programming and its Applications
- **Resource Person :** Dr. Dinesh Anwekar, Professor and HOD, Department of CSE, Nitte Meenakshi Institute of Technology, Bengaluru.
- **Course Duration & Date:** 5 Days from 19-01-2015 to 23-01-2015

Syllabus Plan & Schedule of the certification program



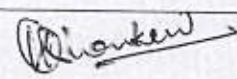
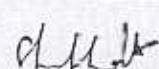
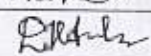
Date	Time	Topics	Total Hours
19.01.2015	8:30 AM - 10:15 AM	Introduction to embedded system, Understanding Embedded System, Overview of basic electronics and digital electronics	6.15 hrs.
	10:30 AM - 12:30 AM	Microcontroller vs. Microprocessor, RISC vs. CISC Architectures, Harvard and Von Neumann architectures, Common features of Microcontroller, Comparison between the Microprocessor and microcontroller	
	1:30PM - 3PM	Different types of microcontrollers (Both RISC and CISC)	
	3.15PM - 4.30PM	Different types of microcontrollers (Both RISC and CISC)	
20.01.2015	8:30 AM - 10:15 AM	Introduction to Arduino, Pin configuration and architecture	6.15 hrs.
	10:30 AM - 12:30 AM	Device and platform features, Concept of digital and analog ports.	
	1:30PM - 3PM	Familiarizing with different kinds of Arduino Interfacing Boards	
	3.15PM - 4.30PM	Introduction to Embedded C and Arduino platform	
21.01.2015	8:30 AM - 10:15 AM	Arduino data types , Variables and constants, Operators, Control Statements, Arrays, Functions	6.15 hrs.
	10:30 AM - 12:30 AM	Arduino program structure, setup(), loop() functions, importance of math.h header file in Arduino programs	
	1:30PM - 3PM	Arduino i/o Functions : Pins Configured as INPUT and OUTPUT, Pull up resistors, pinMode() Function	


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ELECTRONICS AND COMMUNICATION ENGINEERING

	3.15PM – 4.30PM	Arduino advanced I/O functions: analogReference() Function, digitalWrite() Function, analogRead() function, analogWrite(), Arduino Time functions.	
22.01.2015	8:30 AM - 10:15 AM	Introduction to General Hardware Interfacings like LED's, Switches, Seven Segment Display, Relays, LCD, Buzzer, Sensors and actuators	6.15 hrs.
	10:30 AM – 12:30 AM	Introduction to different kinds of communications, Serial vs. parallel, Synchronous and asynchronous to serial communication	
	1:30PM – 3PM	UART communication in Arduino, Serial.begin(), Serial.write(), Serial.print(), Serial.println() functions	
	3.15PM – 4.30PM	I ² c and SPI communication in Arduino boards	
23.01.2015	8:30 AM - 10:15 AM	Pulse Width Modulation, DC Motor Stepper Motor	6.15 hrs.
	10:30 AM – 12:30 AM	Arduino Interrupts	
	1:30PM – 3PM	Case studies of Arduino projects	
	3.15PM – 4.30PM	Case studies of Arduino projects	

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. Agalya P.	Associate Professor	
2.	Prof. Shobha S.	Associate Professor	
3.	Prof. Ravishankara M. N.	Associate Professor	
4.	Prof. Shobha I Hugar	Assistant Professor	
5.	Dr. Dinesh Anwekar	Guest Speaker	


Principal
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HOD
Head of the Department
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Bengaluru - 560 057

12.01.2015

NOTICE

As a part of programming skill development, Department of Electronics and Communication Engineering is conducting Five days Certification Course on “**ARDUINO Programming and its Applications**” from 19-01-2015 to 23-01-2015.

All VI semester ECE students must attend the course compulsorily.



HOD

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Bengaluru - 560 057

Academic Year: 2014-15

List of Students enrolled for the certification course on “ ARDUINO Programming and its Applications”

Sl. No	USN	Name of the Students	Semester & Sec
1.	1SG12EC001	ABHILASH N	VI A
2.	1SG12EC002	ABHISHEK	VI A
3.	1SG12EC003	ABHISHEK KUMAR	VI A
4.	1SG12EC004	AJEET KUMAR	VI A
5.	1SG12EC005	AKSHATA ASHOK NAIK	VI A
6.	1SG12EC006	AMAN KUMAR	VI A
7.	1SG12EC008	ANAND VARDHAN	VI A
8.	1SG12EC009	ANEESHA JOVIAL	VI A
9.	1SG12EC010	ANURAG GHOSH	VI A
10.	1SG12EC011	ANURAG KUMAR	VI A
11.	1SG12EC012	ANUSHA S	VI A
12.	1SG12EC013	APOORVA S	VI A
13.	1SG12EC014	ARBINTAJ N	VI A
14.	1SG12EC015	ARCHANA O V	VI A
15.	1SG12EC017	ARPITH D BHAT	VI A
16.	1SG12EC019	ARSHIYA TABASSUM	VI A
17.	1SG12EC020	ARUN R	VI A
18.	1SG12EC021	ASHA N G	VI A
19.	1SG12EC022	ASHA R	VI A
20.	1SG12EC023	ASHA S	VI A
21.	1SG12EC024	AVINASH KUMAR	VI A
22.	1SG12EC025	AVINASH KUMAR	VI A
23.	1SG12EC026	BHAVANA H T	VI A
24.	1SG12EC027	BUDUR SIDDHARTHA REDDY	VI A
25.	1SG12EC028	C N LAKSITH CHENGAPPA	VI A
26.	1SG12EC029	CHANDRESH VIKRAM	VI A
27.	1SG12EC030	CHARAN S	VI A
28.	1SG12EC031	CHARANRAJ O	VI A
29.	1SG12EC032	CHIDANANDA HONNAPPA HALLI	VI A
30.	1SG12EC033	CLAVIN PATRICK ABRAHAM	VI A
31.	1SG12EC034	DEEPA	VI A
32.	1SG12EC035	DHANYASHREE K V	VI A
33.	1SG12EC035	DIVYA LAKSHMI B N	VI A
34.	1SG12EC037	G SRINIVAS	VI A
35.	1SG12EC039	GHANENDRA SINGH	VI A
36.	1SG12EC040	GRISHM KHURANA	VI A
37.	1SG12EC041	GURUPRASAD G	VI A
38.	1SG12EC042	HARSH KUMAR	VI A
39.	1SG12EC043	HEMALATHA S	VI A
40.	1SG12EC044	JATRAM AKSHAY	VI A
41.	1SG12EC045	KARTHIK HEGDE H A	VI A

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42.	1SG12EC046	KAVITHA B	VI A
43.	1SG12EC047	KAVYA S	VI A
44.	1SG12EC048	KIRAN KUMAR S L	VI A
45.	1SG12EC049	KSHITIJ YADAV	VI A
46.	1SG12EC050	LAVANYA K	VI A
47.	1SG12EC051	LIKITHA A B	VI A
48.	1SG12EC052	M NIHAL	VI A
49.	1SG12EC054	MANASA K	VI A
50.	1SG12EC055	MANJULA H N	VI A
51.	1SG12EC056	MOHIT G	VI A
52.	1SG12EC057	NANDINI N P	VI A
53.	1SG12EC058	NAYANA R	VI A
54.	1SG12EC059	NEHA U TATTI	VI A
55.	1SG12EC060	NIKESH KUMAR	VI A
56.	1SG12EC061	NILESH KUMAR	VI A
57.	1SG12EC062	NIRANJAN P M	VI A
58.	1SG13EC401	AKSHATHA V P	VI A
59.	1SG13EC402	AMRUTHRAJ S	VI A
60.	1SG13EC403	ANJALI	VI A
61.	1SG13EC404	ASHOK T	VI A
62.	1SG13EC405	BASAVARAJU M	VI A
63.	1SG13EC406	CHAITHRA D N	VI A
64.	1SG13EC407	CHAITHRA G C	VI A
65.	1SG13EC408	GIRISH B S	VI A
66.	1SG13EC409	HARISH KUMAR PRASAD	VI A
67.	1SG13EC410	LATHA C K	VI A
68.	1SG13EC411	LAVANYA P	VI A
69.	1SG11EC013	ASHISH M RAO	VI A
70.	1SG11EC017	CHAITHRA P	VI A
71.	1SG12EC411	MURUGESH P D	VI A
72.	1SG12EC063	NIRANJAN SINGH	VI B
73.	1SG12EC065	NITHIN VISHWA M V	VI B
74.	1SG12EC066	NITISH KUMAR	VI B
75.	1SG12EC067	P PRIYADARSHINI	VI B
76.	1SG12EC069	PAVAN H R	VI B
77.	1SG12EC071	POORNESH K P	VI B
78.	1SG12EC073	PRAVEEN SHASHWAT	VI B
79.	1SG12EC074	PRIYANKA B M	VI B
80.	1SG12EC075	PRUTHVIK G.S	VI B
81.	1SG12EC076	PUSHPALATHA K	VI B
82.	1SG12EC077	R MANJUNATH	VI B
83.	1SG12EC078	RAHUL CHANDRA	VI B
84.	1SG12EC079	RAJEEV RANJAN MISHRA	VI B
85.	1SG12EC081	RAKSHITH B A	VI B
86.	1SG12EC082	RAKSHITH KUMAR G	VI B
87.	1SG12EC083	RAMYA R PAI	VI B
88.	1SG12EC084	RASHMI	VI B



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89.	1SG12EC085	RAVIRAJ KAMATI	VI B
90.	1SG12EC086	RODRIGUES RYAN	VI B
91.	1SG12EC087	RONIT SINGH	VI B
92.	1SG12EC088	ROOPA M	VI B
93.	1SG12EC089	ROOPASHREE M	VI B
94.	1SG12EC090	SACHIN TENDULKAR	VI B
95.	1SG12EC091	SAKET KUMAR	VI B
96.	1SG12EC092	SALIL KUMAR GUPTA	VI B
97.	1SG12EC093	SANDHYA R	VI B
98.	1SG12EC095	SANTHOSH MURTHY B K	VI B
99.	1SG12EC096	SANTOSH KUMAR	VI B
100.	1SG12EC097	SAURAV NIRALA	VI B
101.	1SG12EC098	SMITHA IYENGAR	VI B
102.	1SG12EC099	SMITHA K SABNIS	VI B
103.	1SG12EC100	SRINIDHI M RAO	VI B
104.	1SG12EC101	SRINIVASA B R	VI B
105.	1SG12EC102	SUHAS V	VI B
106.	1SG12EC103	SUMA C	VI B
107.	1SG12EC104	SUNITHA Y	VI B
108.	1SG12EC105	SUSHMITHA H N	VI B
109.	1SG12EC106	SUSHMITHA T S	VI B
110.	1SG12EC107	SUVARNA SUSHMITHA PADMANABHA	VI B
111.	1SG12EC108	T R VIJAY	VI B
112.	1SG12EC109	T V SWAROOP	VI B
113.	1SG12EC110	THEERTHA C	VI B
114.	1SG12EC111	TRILOK KUMAR	VI B
115.	1SG12EC112	VASUDEV D	VI B
116.	1SG12EC113	VIJAY A	VI B
117.	1SG12EC114	VILAS RAJ V URS	VI B
118.	1SG12EC115	VINOD PANDURANGA PATIL	VI B
119.	1SG12EC116	VISHWAS V	VI B
120.	1SG12EC117	VIVEK ANAND	VI B
121.	1SG12EC118	VIVEK KUMAR	VI B
122.	1SG12EC119	VIVEK KUMAR MANN	VI B
123.	1SG12EC121	YESHASWINI L	VI B
124.	1SG12EC123	YUVASHREE M	VI B
125.	1SG12EC124	POOJA J	VI B
126.	1SG12EC126	ANIKA SANJEEVAN	VI B
127.	1SG12EC127	AISHWARYA P	VI B
128.	1SG12EC128	SATEESH B R	VI B
129.	1SG13EC413	LOKESHACHAR N E	VI B
130.	1SG13EC414	NAVEEN KUMAR D M	VI B
131.	1SG13EC415	NAYANA G S	VI B
132.	1SG13EC418	RAFI J	VI B
133.	1SG13EC419	RAVICHANDRAN M	VI B
134.	1SG13EC420	SANDHYARANI C K	VI B

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135.	1SG13EC422	UDAY N V	VI B
136.	1SG13EC423	V DYA SREE R	VI B
137.	1SG11EC041	MAHENDRA CHOUDARY	VI B
138.	1SG11EC032	KAFTHIK M N	VI B
139.	1SG11EC079	SOURABH KR SINGH	VI B
140.	1SG11EC049	PAVAN P	VI B
141.	1SG13EC424	KAVITHA HS	VI B
142.	1SG11EC098	MCHAMED IBRAHIM A	VI B
143.	1SG10EC019	DHANANJAY KUMAR UJJAIN	VI B


Coordinator


Head of the Department
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Principal
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Bengaluru - 560 057

Academic Year: 2014-15

List of Students enrolled for the certification course on "ARDUINO Programming and its Applications"

Sl. No	USN	Name of the Students	19.01.2015		20.01.2015		21.01.2015		22.01.2015		23.01.2015	
			MS	AS	MS	AS	MS	AS	MS	AS	MS	AS
1	1SG12EC001	ABHILASH N	1	2	3	4	5	6	7	8	9	10
2	1SG12EC002	ADHISHEK	1	2	3	4	5	6	7	8	9	10
3	1SG12EC003	ADHISHEK KUMAR	1	2	3	4	5	6	7	8	9	10
4	1SG12EC004	AJEET KUMAR	1	2	3	4	5	6	7	8	9	10
5	1SG12EC005	AKHATA ASHOK NAJK	1	2	3	4	5	6	7	8	9	10
6	1SG12EC006	AMAN KUMAR	1	2	3	4	5	6	7	8	9	10
7	1SG12EC008	AMAND VARDHAN	1	2	3	4	5	6	7	8	9	10
8	1SG12EC009	ANEESHA JOVIAL	1	2	3	4	5	6	7	8	9	10
9	1SG12EC010	ANJURAG GHOSH	1	2	3	4	5	6	7	8	9	10
10	1SG12EC011	ANJURAG KUMAR	1	2	3	4	5	6	7	8	9	10
11	1SG12EC012	ANUSHA S	1	2	3	4	5	6	7	8	9	10
12	1SG12EC013	APCORVA S	1	2	3	4	5	6	7	8	9	10
13	1SG12EC014	AREINTAJ N	1	2	3	4	5	6	7	8	9	10
14	1SG12EC015	ARCHANA O V	1	2	3	4	5	6	7	8	9	10
15	1SG12EC017	ARF TH D BHAT	1	2	3	4	5	6	7	8	9	10
16	1SG12EC019	ARSHIYA TABASSUM	1	2	3	4	5	6	7	8	9	10
17	1SG12EC020	ARL N R	1	2	3	4	5	6	7	8	9	10
18	1SG12EC021	ASHA N G	1	2	3	4	5	6	7	8	9	10
19	1SG12EC022	ASHA R	1	2	3	4	5	6	7	8	9	10
20	1SG12EC023	ASHA S	1	2	3	4	5	6	7	8	9	10

1	1SG12EC024	AVINASH KUMAR	1	1	3	4	5	6	7	8	9	10
22	1SG12EC025	AVINASH KUMAR	1	1	3	4	5	6	7	8	9	10
23	1SG12EC026	BHAVANA HT	1	2	3	4	5	6	7	8	9	10
24	1SG12EC027	BUDJR SIDDHARTHA REDEY	1	2	3	4	5	6	7	8	9	10
25	1SG12EC028	C N LAKSITH CHEE. GAPP	1	2	3	4	5	6	7	8	9	10
26	1SG12EC029	CHANDRESH VIKRAM	1	2	3	4	5	6	7	8	9	10
27	1SG12EC030	CHAPAN S	1	1	2	3	4	4	5	6	7	8
28	1SG12EC031	CHAFANRA. O	1	2	3	4	5	6	7	8	9	10
29	1SG12EC032	CHIDANANDA HONHAPPA HALLI	1	2	3	4	5	6	7	8	9	10
30	1SG12EC033	CLAVIN PATRICK ABRAHAM	1	2	3	4	5	6	7	8	9	10
31	1SG12EC034	DEEPA	1	2	3	4	5	6	7	8	9	10
32	1SG12EC035	DEANYASHREE K V	1	2	3	4	5	6	7	8	9	10
33	1SG12EC036	DIVYA LAKSHMI B N	1	2	3	4	5	6	7	8	9	10
34	1SG12EC037	G SRIHIVAS	1	2	3	4	5	6	7	8	9	10
35	1SG12EC038	GHANENDRA SINGH	1	2	3	4	5	6	7	8	9	10
36	1SG12EC040	GR SHV KHURANA	1	2	3	4	5	6	7	8	9	10
37	1SG12EC041	GUFUPRASAD G	1	2	3	4	5	6	7	8	9	10
38	1SG12EC042	HARSH KUMAR	1	2	3	4	5	6	7	8	9	10
39	1SG12EC043	HEMALATHA S	1	2	3	4	5	6	7	8	9	10
40	1SG12EC044	JATEMA AKSHAY	1	2	3	4	5	6	7	8	9	10
41	1SG12EC045	KARTHIK HEGDE H A	1	2	3	4	5	5	6	7	8	10
42	1SG12EC046	KAVITHA B	1	2	3	4	5	6	7	8	9	10
43	1SG12EC047	KALYAS	1	2	3	4	5	6	7	8	9	10
44	1SG12EC048	KIRAN KUMAR S L	1	2	3	4	5	6	7	8	9	10

45	1SG12EC049	KSHITIJ YADAV	1	2	3	4	5	5	6	7	8	9
46	1SG12EC050	LAVANYA K	1	2	3	4	5	6	7	8	9	10
47	1SG12EC051	LIKITHA A B	1	2	3	4	5	6	7	8	9	10
48	1SG12EC052	M NIFAL	1	2	3	4	5	6	7	8	9	10
49	1SG12EC054	MANASA K	1	2	3	4	5	6	7	8	9	10
50	1SG12EC055	MANJULA H N	1	2	3	4	5	6	7	8	9	10
51	1SG12EC056	MOHIT G	1	2	3	4	5	6	7	8	9	10
52	1SG12EC057	NANDINI N P	1	2	3	4	5	6	7	8	9	10
53	1SG12EC058	NAYANA R	1	2	3	4	5	6	7	8	9	10
54	1SG12EC059	NEHA J TATTI	1	2	3	4	5	6	7	8	9	10
55	1SG12EC060	NIKESH KUMAR	1	2	3	4	5	6	7	8	9	10
56	1SG12EC061	NILESH KUMAR	1	2	3	4	5	6	7	8	9	10
57	1SG12EC062	NIRANJAN P M	1	2	3	4	5	6	7	8	9	10
58	1SG13EC401	AKSHATHA V P	1	1	2	3	4	5	6	7	8	9
59	1SG13EC402	AMRUTHRAJ S	1	1	2	3	4	5	6	7	8	9
60	1SG13EC403	ANJALI	1	2	3	4	5	5	6	7	8	9
61	1SG13EC404	ASHOK T	1	2	3	4	5	6	7	7	8	9
62	1SG13EC405	BASAVARAJU M	1	2	3	4	5	6	7	7	8	9
63	1SG13EC406	CHAITHRAD N	1	2	3	4	5	6	7	7	8	9
64	1SG13EC407	CHAITHRAG C	1	2	3	4	5	6	7	8	9	10
65	1SG13EC408	GIRISH B S	1	2	3	4	5	6	7	8	9	10
66	1SG13EC409	HARISH KUMAR PRASAD	1	2	3	4	5	6	7	8	9	10
67	1SG13EC410	LATHA C K	1	1	2	3	5	6	7	8	9	10
68	1SG13EC411	LAVANYA P	1	2	3	4	5	6	7	8	9	10

Principal

	1SG11EC013	ASH SH M RAO	1	1	2	3	4	5	6	7	8	9
70	1SG11EC017	C-A THRA P	1	1	2	3	4	5	6	7	8	9
71	1SG12EC411	M JEUGESH P D	1	1	2	3	4	5	6	7	8	9
72	1SG12EC063	NIRANJAN SINGH	1	2	3	4	5	6	7	8	9	10
73	1SG12EC065	N THIN VISHWA M V	1	2	3	4	5	6	7	8	9	10
74	1SG12EC066	N TISH KUMAR	1	2	3	4	5	6	7	8	9	10
75	1SG12EC067	P PRIYADARSHINI	1	2	3	4	5	6	7	8	9	10
76	1SG12EC069	PAVAN H R	1	2	3	4	5	6	7	8	9	10
77	1SG12EC071	POORNESH K P	1	2	3	4	5	6	7	8	9	10
78	1SG12EC073	PFAVEEN SHASHWAT	1	2	3	4	5	6	7	8	9	10
79	1SG12EC074	PRIYANKA B M	1	2	3	4	5	6	7	8	9	10
80	1SG12EC075	PRUTHVIK G.S	1	2	3	4	5	6	7	8	9	10
81	1SG12EC076	PLSI-PALATHA K	1	2	3	4	5	6	7	8	9	10
82	1SG12EC077	R MANJUNATH	1	2	3	4	5	6	7	8	9	10
83	1SG12EC078	RAHUL CHANDRA	1	2	3	4	5	6	7	8	9	10
84	1SG12EC079	RAJEEV RANJAN MISHRA	1	2	3	3	4	5	6	7	8	9
85	1SG12EC081	RAKSHITH B A	1	2	3	4	5	6	7	8	9	10
86	1SG12EC082	RAKSHITH KUMAR G	1	2	3	3	4	5	6	7	8	9
87	1SG12EC083	RAKSHA R PAI	1	2	3	4	5	6	7	8	9	10
88	1SG12EC084	RAHMI	1	2	3	4	5	6	7	8	9	10
89	1SG12EC085	RAMFAJ KAMATI	1	2	3	3	4	5	6	7	8	9
90	1SG12EC086	RODRIGUES RYAN	1	2	3	4	5	6	7	8	9	10
91	1SG12EC087	ROKIT SINGH	1	2	3	4	5	6	7	8	9	10
92	1SG12EC088	ROCPA M	1	2	3	4	5	6	7	8	9	10

	1SG12EC089	ROOPASHREE M	1	2	3	4	5	6	7	8	9	10
94	1SG12EC090	SACHIN TENDULKAR	1	2	3	3	4	5	6	7	8	9
95	1SG12EC091	SAKET KUMAR	1	2	3	3	4	5	6	7	8	9
96	1SG12EC092	SALIL KUMAR GLFTA	1	2	3	4	5	6	7	8	9	10
97	1SG12EC093	SANDHYA R	1	2	3	4	5	6	7	8	9	10
98	1SG12EC095	SANTHOSH N JITHY B K	1	2	3	3	4	5	6	7	8	9
99	1SG12EC096	SANTOSH KUMAR	1	2	3	4	5	6	7	8	9	10
100	1SG12EC097	SAURAV NIRALA	1	2	3	4	5	6	7	8	9	10
101	1SG12EC098	SMITHA IYENGAR	1	2	3	4	5	6	7	8	9	10
102	1SG12EC099	SMITHA K SABNIS	1	2	3	4	5	6	7	8	9	10
103	1SG12EC100	SRINIDHI M RAO	1	2	2	3	4	5	6	7	8	9
104	1SG12EC101	SRINIVASA B R	1	2	2	3	4	5	6	7	8	9
105	1SG12EC102	SUHAS V	1	2	3	4	5	6	7	8	9	10
106	1SG12EC103	SUMAN C	1	2	3	4	5	6	7	8	9	10
107	1SG12EC104	SUNITHA Y	1	2	3	4	5	6	7	8	9	10
108	1SG12EC105	SUSHMITHA H N	1	2	3	4	5	6	7	8	9	10
109	1SG12EC106	SUSHMITHA T S	1	2	3	4	5	6	7	8	9	10
110	1SG12EC107	SUVARNA SUSHMITHA PADEMANABHA	1	2	3	4	5	6	7	8	9	10
111	1SG12EC108	TRIVILAY	1	2	3	4	5	6	7	8	9	10

112	1SG12EC109	T V SWAROOP	1	2	3	4	5	6	7	8	9	10
113	1SG12EC110	THEETHA C	1	2	3	4	5	6	7	8	9	10
114	1SG12EC111	TRILOK KUMAR	1	2	2	3	4	5	6	7	8	9
115	1SG12EC112	VASUDEVD	1	2	3	4	5	6	7	8	9	10
116	1SG12EC113	VUJAY A	1	2	3	4	5	6	7	8	9	10
117	1SG12EC114	VILAS RAJ V URS	1	2	3	4	5	6	7	8	9	10
118	1SG12EC115	VINOD PANDL RANGA PATIL	1	2	3	4	5	6	7	8	9	10
119	1SG12EC116	VISHWAS V	1	2	3	4	5	6	7	8	9	10
120	1SG12EC117	VIVEK ANAND	1	2	3	4	5	6	7	8	9	10
121	1SG12EC118	VIVEK KUMAR	1	2	3	4	5	6	7	8	9	10
122	1SG12EC119	VIVEK KUMAR MANN	1	2	3	4	5	6	7	8	9	10
123	1SG12EC121	YESHASWINI L	1	2	3	4	5	6	7	8	9	10
124	1SG12EC123	YUVASHREE M	1	2	3	4	5	6	7	8	9	10
125	1SG12EC124	POOJA I	1	2	2	3	4	5	6	7	8	9
126	1SG12EC126	ANIKA SANJEEVAN	1	2	2	3	4	5	6	7	8	9
127	1SG12EC127	AISHWARYA P	1	2	3	4	5	6	7	8	9	10

128	1SG12EC128	SATEESH B R	1	2	2	3	4	5	6	7	8	9
129	1SG13EC413	LOKESHACHAR N E	1	2	3	4	5	6	7	8	9	10
130	1SG13EC414	NAVEEN KUMAR D M	1	2	3	4	5	6	7	8	9	10
131	1SG13EC415	NAYANA G S	1	2	3	4	5	6	7	8	9	10
132	1SG13EC418	RAFI J	1	2	2	3	4	5	6	7	8	9
133	1SG13EC419	RAVICHANDRAN M	1	✓	3	4	5	6	7	8	9	10
134	1SG13EC420	SANDHYARANI C E	1	2	3	4	5	6	7	8	9	10
135	1SG13EC422	UDAY N V	1	2	3	4	5	6	7	8	9	10
136	1SG13EC423	VIDYA SREE R	1	2	3	4	5	6	7	8	9	10
137	1SG11EC041	MAHENDRA CHOUDARY	1	2	2	3	4	5	6	7	8	9
138	1SG11EC032	KARTHIK M N	1	2	2	3	4	5	6	7	8	9
139	1SG11EC079	SOURABH KR SINGH	1	2	2	3	4	5	6	7	8	9
140	1SG11EC049	PAVAN P	1	2	3	4	5	5	6	7	8	9
141	1SG13EC424	KAVITHA HS	1	2	3	4	5	6	7	8	9	10
142	1SG11EC098	MOHAMED IBRAHIM A	1	2	2	3	4	5	6	7	8	9
143	1SG10EC019	DHANANJAY KUMAR UJJAIN	1	2	2	3	4	5	6	7	8	9



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Electronics and Communication Engineering


Coordinator


100

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SAPTHAGIRI COLLEGE OF ENGINEERING
ELECTRONICS AND COMMUNICATION ENGINEERING

5 days Certification Course on "ARDUINO Programming and its

Applications"

Test Time Table

Sl. No.	DATE	DAY	TIMINGS
1	30-01-2015	Friday	3.00PM-4.00PM


HOD

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


Principal
Sapthagiri College of Engineering
14/5, Chikkasandra, Hosur Road
Bangalore - 560 057

5 days Certification Course on " ARDUINO PROGRAMMING AND ITS

APPLICATIONS "

Question Paper

Date: 30.01.2015

Duration :60Mins

Maximum marks :50

Note: Question number 1-15 (2M each)

Question number 16 & 17 (10 M each)

Answer all the Questions:

1. How many types of arduinos do we have?

- a) 5
- b) 6
- c) 8
- d) 6

2. What is the microcontroller used in Arduino UNO?

- a) ATmega328p
- b) ATmega2560
- c) ATmega32114
- d) AT91SAM3x8E

3. What does p refer to in ATmega328p?

- a) Production
- b) Pico-Power
- c) Power-Pico
- d) Programmable on chip

4. Arduino shields are also called as _____

- a) Extra peripherals
- b) Add on modules
- c) Connectivity modules
- d) Another Arduinos

5. What is the default bootloader of the Arduino UNO?

- a) Optiboot bootloader
- b) AVR-boot
- c) Bare box
- d) CAG

6. Does the level shifter convert the voltage levels between RS-232 and transistor-transistor logic.

- a) True
- b) False

7. Which is the software or a programming language used for controlling of Arduino?

- a) Assembly Language
- b) C Languages
- c) JAVA
- d) Any Language

8. Do Arduino provides IDE Environment?

- a) True
- b) False

9. A program written with the IDE for Arduino is called _____

- a) IDE source
- b) Sketch
- c) Cryptography
- d) Source code

10. Arduino IDE consists of 2 functions. What are they?

- a) Build() and loop()
- b) Setup() and build()
- c) Setup() and loop()
- d) Loop() and build() and setup()

11. How many digital pins are there on the UNO board?

- a) 14
- b) 12
- c) 16
- d) 20

12. _____ board allows sewn into clothing.

- a) UNO
- b) RedBoard
- c) LilyPad
- d) Mega

13. How many analog pins are used in Arduino Mega board?

- a) 16
- b) 14
- c) 12
- d) 8

14. Which board is first to use microcontroller within build USB?

- a) LilyPad
- b) UNO
- c) RedBoard
- d) Leonardo




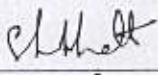
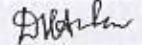
15. _____ are pre built circuit boards that fit on top of Android.

- a) Sensor
- b) Data types
- c) Breadboard
- d) Shields

16. Write a program to read the temperature of the room and display the temperature on the serial window.

17. Write a program to rotate stepper motor for 90 degrees.

Approved by Academic Committee Members & Guest Speaker

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	
5.	Dr. Dinesh Anwekar	Guest Speaker	

Principal

**5 days Certification Course on " ARDUINO PROGRAMMING AND ITS
APPLICATIONS "**

Scheme & Solution

Date: 30.01.2015

Duration :60Mins

Maximum marks :50

Note: Question number 1-15 (2M each)

Question number 16 & 17 (10 M each)

Answer all the Questions:

1. How many types of arduinos do we have?

- a) 5
- b) 6
- c) 8
- d) 6

Answer: c

Explanation: There are 4 Arduino boards and 4 Arduino shields that fit on top of Arduino compatible boards to provide additional capability like connecting to the internet, motor controller, LCD screen controlling etc.,

2. What is the microcontroller used in Arduino UNO?

- a) ATmega328p
- b) ATmega2560
- c) ATmega32114
- d) AT91SAM3x8E

Answer: a

Explanation: ATmega328p is a microcontroller which is 32KB of flash ROM and 8-bit microcontroller.

3. What does p refer to in ATmega328p?

- a) Production
- b) Pico-Power
- c) Power-Pico
- d) Programmable on chip

Answer: b

Explanation: Picopower technology employs advanced features like multiple clock domains, DMA and event systems to minimize power consumption.

4. Arduino shields are also called as _____

- a) Extra peripherals
- b) Add on modules
- c) Connectivity modules
- d) Another Arduinos

Answer: b

Explanation: The Arduino boards can connect with add-on modules termed as shields. Multiple, and possibly stacked shields may be individually addressable via an I2C serial bus.

5. What is the default bootloader of the Arduino UNO?

- a) Optiboot bootloader
- b) AVR-boot
- c) Bare box
- d) GAG



Principal

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Answer: a

Explanation: The optiboot bootloader will take 512 bytes, leaving 32256 bytes for application code. Due to its small size larger up-loadable sketch size is achieved.

6. Does the level shifter converts the voltage levels between RS-232 and transistor-transistor logic.

a) True

b) False

Answer: a

Explanation: Level shifters are used in multi-design, different blocks work on different voltage levels. So when a signal passes from one voltage domain to another voltage this is needed particularly when a signal passes from low level to high level.

7. Which is the software or a programming language used for controlling of Arduino?

a) Assembly Language

b) C Languages

c) JAVA

d) Any Language

Answer: d

Explanation: A program for Arduino can be written in any programming language for a compiler that produces binary machine code for the target processor.

8. Do Arduino provides IDE Environment?

a) True

b) False

Answer: a

Explanation: It includes a code editor with features as text cutting and pasting, searching and replacing text, automatic indenting, brace matching, syntax highlighting, and provides simple one-click mechanism to compile and upload programs to an Arduino board.

9. A program written with the IDE for Arduino is called _____

a) IDE source

b) Sketch

c) Cryptography

d) Source code

Answer: b

Explanation: Sketches are saved on the development computer as text files with the file extension .ino. Arduino software (IDE) pre-1.0 saved sketches with the extension file .pde.

10. Arduino IDE consists of 2 functions. What are they?

a) Build() and loop()

b) Setup() and build()

c) Setup() and loop()

d) Loop() and build() and setup()

Answer: c

Explanation: Setup() is called once in the program when a sketch starts after power-up. It is used to initialize variables, input and output pin modes, and other libraries needed in the sketch.

Loop() is used after setup() been called, function loop() is executed repeatedly in the main program. It controls the board until the board is powered off or is reset.

11. How many digital pins are there on the UNO board?

a) 14

b) 12

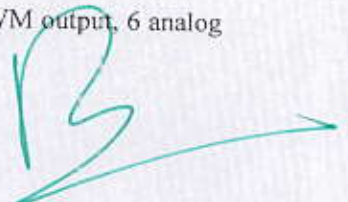
c) 16

d) 20

Answer: a

Explanation: It has 14 digital pins input/output pins of which 6 can be used as PWM output, 6 analog inputs, a USB connection, a power jack, a reset button and more.

12. _____ board allows sewn into clothing.



- a) UNO
- b) RedBoard
- c) LilyPad
- d) Mega

Answer: c

Explanation: LilyPad was creatively designed with large connecting pads and a flat back to allow them to be sewn into clothing with conductive thread.

13. How many analog pins are used in Arduino Mega board?

- a) 16
- b) 14
- c) 12
- d) 8

Answer: a

Explanation: It has lots of digital input/output pins, 14 can be used as PWM output 16 analog inputs, a USB connection, a power jack, and a reset button.

14. Which board is first to use microcontroller within build USB?

- a) LilyPad
- b) UNO
- c) RedBoard
- d) Leonardo

Answer: d

Explanation: The Leonard is Arduino's first development board to use one microcontroller with built-in USB. This means that it can be cheaper and simple, And also, code libraries are available which allow the board to emulate a computer keyboard etc.


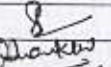
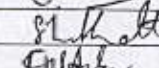
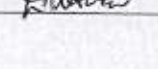

15. _____ are pre built circuit boards that fit on top of Android.


- a) Sensor
- b) Data types
- c) Breadboard
- d) Shields


Answer: d

16 & 17 : Program

Approved by Academic Committee Members & Guest Speaker

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	
5.	Dr.Dinesh Anwekar	Guest Speaker	


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Bangalore - 560 057

Sapthagiri College of Engineering

ELECTRONICS AND COMMUNICATION ENGINEERING

5 days Certification Course on "ARDUINO Programming and its Application"

Design

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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7. Generally how was your overall experience during the Certification Course
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8. Any Suggestions:

Sri nidhi M. Rao
Student Name

[Signature]
Student Signature

Design

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8. Any Suggestions:

Likilth A.B.
Student Name

[Signature]
Student Signature

Design

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8. Any Suggestions:

Nayana R
Student Name


Student Signature

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Arjun R
Student Name

[Signature]
Student Signature

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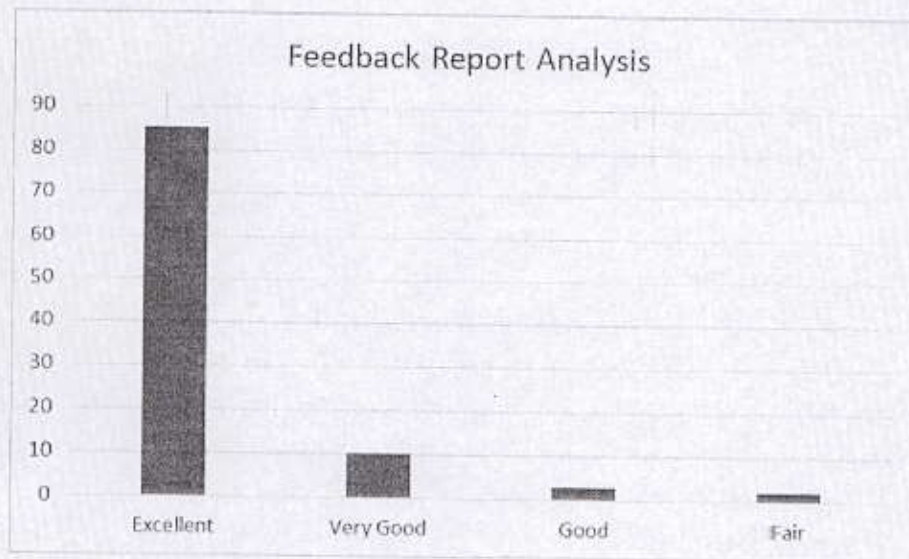
Anwar Keemar
Student Name

[Signature]
Student Signature

FEEDBACK ANALYSIS

Certification Programme: "Arduinio Programming and its applications"

No. of students	Percentage of Student Feedback			
	Excellent	Very Good	Good	Fair
143	84	11	3	2



Action Report:

84 % of students were completely happy with the certification program and 14 % of students felt it was a good program and remaining 2% 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.


CO-ORDINATOR


HOD

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**Certificate Course on ARDUINO Programming & its
Applications**

Post Event Report

Department of ECE conducted Certificate Course on Arduino Programming and its applications.

- **GuestSpeaker:** Dr.DineshAnvekar, Professor and HOD, Department of CSE, NitteMeenakshi Institute of Technology, Bengaluru.
- **Duration of the course:** Five days from 19th Jan 2015 to 23rd Jan 2015.
- **Course detail:** ARDUINO Programming and its Applications

Objective of the Course: The five day course is to make the students to be familiar with the major concepts in ARDUINO circuit board which is a main platform for their career .

Syllabus & Schedule of Certification Course

Date	Topics Delivered
19.01.2015	Speaker delivered lecture on Introduction to embedded system, Microcontrollers & microprocessor and the different instruction set architectures
20 .01.2015	Speaker delivered lecture on Introduction to Arduino. Pin configuration and architecture and Familiarized students with different kinds of Arduino Interfacing Boards and Embedded ARDUINO programming
21.01.2015	Speaker delivered lecture on Arduino program structure, setup(), loop() functions, importance of math.h header file in Arduino programs
22.01.2015	Students learnt about general hardware interfacing with ARDUINO
23.01.2015	Speaker delivered lecture on Advanced concepts of ARDUINO programming with example.

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Conclusion:

This 5 days Certificate course made the students more comfortable with the ARDUINO circuit board programming in the field of Embedded system. Learning style adopted by students, which eventually is developed into a skill of their forte. Through this course, an ecstatic learning background paved way to a positive learning environment in the class where active participation was seen from every end. A sense of satisfaction was also seen among the students. Faculty members were also equally benefited with the course. They felt more expedient while delivering the lectures as the margin was erased between these students and others. This Course helped the student to improve their knowledge in ARDUINO PROGRAMMING AND ITS APPLICATIONS.


Coordinator


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SAPTHAGIRI COLLEGE OF ENGINEERING

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION

Five days certification course on

"ARDUINO MICROCONTROLLER PROGRAMMING AND ITS APPLICATIONS"

CERTIFICATE

This is to certify that Mr/Ms has attended the five days certification course on "ARDUINO MICROCONTROLLER PROGRAMMING AND ITS APPLICATIONS" organized by the Department of Electronics and Communication Engineering, Sapthagiri college of Engineering, Bengaluru from 19th January to 23rd January 2015.

H.O.D., Dept. of ECE
S.C.E., Bengaluru


Principal
Sapthagiri College of Engineering
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Principal
S.C.E., Bengaluru



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DEPARTMENT OF ELECTRONICS AND COMMUNICATION

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CERTIFICATE

This is to certify that Mr/Ms Arbin Taj N...... has attended the five days certification course on "ARDUINO MICROCONTROLLER PROGRAMMING AND ITS APPLICATIONS" organized by the Department of Electronics and Communication Engineering, Sapthagiri college of Engineering, Bengaluru from 19th January to 23rd January 2015.

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CERTIFICATE

This is to certify that Mr/Ms *Charan Raj D* has attended the five days certification course on "ARDUINO MICROCONTROLLER PROGRAMMING AND ITS APPLICATIONS" organized by the Department of Electronics and Communication Engineering, Sapthagiri college of Engineering, Bengaluru from 19th January to 23rd January 2015.

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This is to certify that Mr/Ms Niranjana Singh..... has attended the five days certification course on "ARDUINO MICROCONTROLLER PROGRAMMING AND ITS APPLICATIONS" organized by the Department of Electronics and Communication Engineering, Sapthagiri college of Engineering, Bengaluru from 19th January to 23rd January 2015.

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This is to certify that Mr/Ms *Nitish...Kumar* has attended the five days certification course on "ARDUINO MICROCONTROLLER PROGRAMMING AND ITS APPLICATIONS" organized by the Department of Electronics and Communication Engineering, Sapthagiri college of Engineering, Bengaluru from 19th January to 23rd January 2015.

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CERTIFICATE

This is to certify that Mr/Ms *Manasa K.* has attended the five days certification course on "ARDUINO MICROCONTROLLER PROGRAMMING AND ITS APPLICATIONS" organized by the Department of Electronics and Communication Engineering, Sapthagiri college of Engineering, Bengaluru from 19th January to 23rd January 2015.

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