About RCASC

Dr. M S Ramaiah, a visionary and philanthropist established "Gokula Education Foundation (GEF)", in the year 1962, to deliver education and healthcare for the betterment of mankind. Under the tutelage of GEF, Ramaiah college of Arts, Science and Commerce (RCASC) was established in 1994. RCASC is Re-accredited with "A" Grade by NAAC, permanently affiliated to Bangalore University (BU) and Bengaluru Central University, and approved by AICTE.

About VAC

Currently the skills in Designing and trouble shooting in Electronics have wide opportunities and room to emerge as Entrepreneurs in the field of Electronics. This value added course will enhance the expertise of the students in designing and troubleshooting small scale Electronic devices. Students will be able to learn, how to use the techniques and tools to ensure high reliability soldering in this hands-on program. The universal assembly and repair module covers all aspects of single-sided through-hole circuit board technology, including: high reliability soldering, solder theory; assembly and rework techniques of wire connections; terminals; axial lead; DIPS; flat packs and multi leaded components.

The Surface Mount Technology (SMT) assembly and repair module stresses the safe installation and removal of surface-mount components, chip using the latest equipment and techniques.

Course Coordinator:

Mrs. Asharani R.
Assistant Professor,
Dept. of Electronics,
MSRCASC

For Registration, please send request to mail ID msrcasc_elec@gmail.com or before 10th January 2022

There is no Registration fee

RAMAIAH
College of Arts, Science & Commerce

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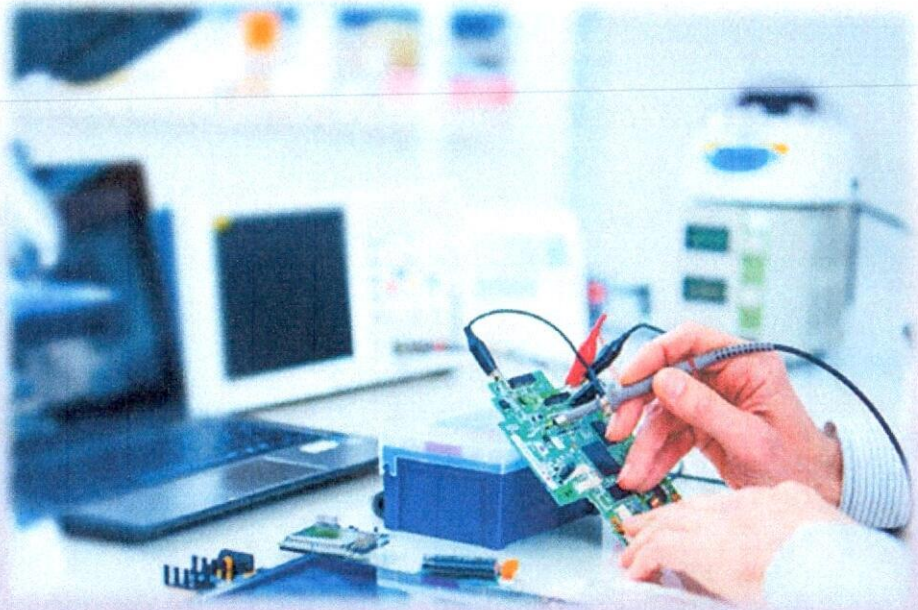
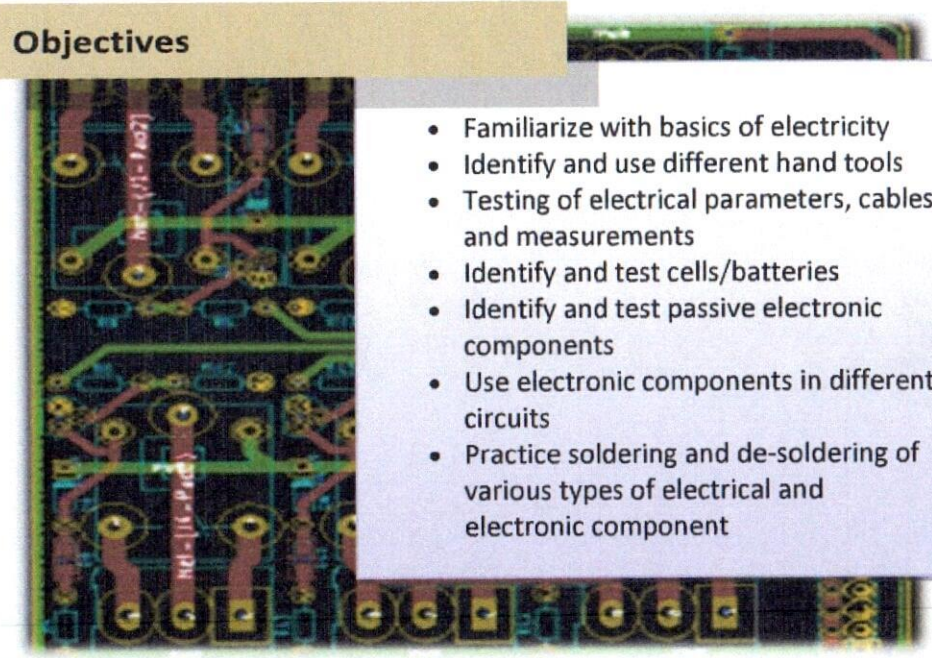
Value added Program
On
"Electronic Components Assembly"
(ELE-VAC22_01)



From 22 /01/2022 to 01/-04/2022

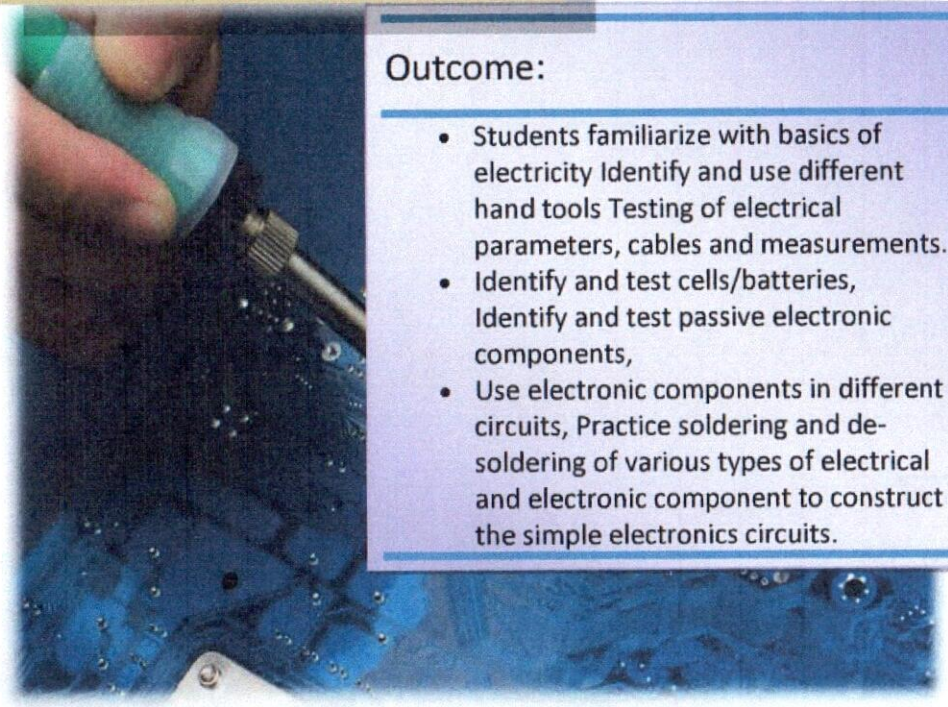
Organized by:
Department of Electronics
M S Ramaiah college of Arts, Science and Commerce,
Bangalore - 560054

Objectives



- Familiarize with basics of electricity
- Identify and use different hand tools
- Testing of electrical parameters, cables and measurements
- Identify and test cells/batteries
- Identify and test passive electronic components
- Use electronic components in different circuits
- Practice soldering and de-soldering of various types of electrical and electronic component

Outcome



Outcome:

- Students familiarize with basics of electricity Identify and use different hand tools Testing of electrical parameters, cables and measurements.
- Identify and test cells/batteries, Identify and test passive electronic components,
- Use electronic components in different circuits, Practice soldering and de-soldering of various types of electrical and electronic component to construct the simple electronics circuits.

Patrons

Sri.M.R.Janakiram
(Hon'ble Director, GEF)

Sri.M.R.Kodandaram
(Hon'ble Director, GEF)

Sri.B. S. Ramaprasad
(Chief Executive, Gen Sc, GEF)

Sri.G.Ramachandra
(Chief of Finance, E &Gen Sc., GEF)

Dr.Nagarathna.A
Principal, MSRCASC

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MSRCASC/ELE_VAC/2021-22/02

Date: 04/02/2022

CIRCULAR

The Department of Electronics is conducting value added course on "**Electronic Components Assembly (ELE-VAC 02)**" for all the First Year E&Cs students from 22/02/2022 to 01/04/2022. The interested candidates can register your name in the Electronics Department.

HOD

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M.S.R. Nagar, Bangalore-560 054.

Principal

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Course Content: (ELE-VAC 02) Electronic components assembly

Total hours: 15hrs

UNIT 1:

Basics of AC and Electrical Cables-, Identify the Phase, Neutral and Earth on power Socket. Use a Tester to monitor AC power, measure the voltage phase ground and rectify earthing, Identify and test different AC mains cables. Skin the electrical wires /cables using the wire stripper and cutter, Measure AC and DC voltages using multi mete. Cells & Batteries- Identify the primary and secondary cells, Measure and test the voltages of the given cells/battery using analog / digital multi meter, Transformers- identify different types of mains transformers and test. Identify the primary and secondary transformer windings and test the polarity. Identify different sizes, shapes of cores used in low-capacity transformers. [6 hours]

UNIT 2:

AC & DC measurements- Identify the meter for measuring AC & DC parameters, Use the multi meter to measure the various functions (AC V, DC V, DC I, AC I, R), Replace the fuse, battery for the given multimeter, Identify the different controls on the CRO front panel and observe the function of each controls, Measure DC voltage, AC voltage ,time period using CRO, Identify the different controls on the function generator front panel and observe the function of each controls, Connect the function generator to CRO and observe the different wave form. [4 hours]

UNIT 3:

Soldering & De-soldering and switches Identify different types of soldering guns and practice soldering of different electronic active and passive components and IC bases on lug boards and PCBs, Join the broken PCB track and test, Practice de-soldering, prepare component for soldering, demonstrate soldering and de-soldering using soldering and de-soldering stations, construction of electronics circuit model on through hole PCB. [5 hours]

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Report on value added course on Electronic components assembly (ELE-VAP 02)

The Department of Electronics was conducted value added course on Electronic components assembly for all the First Year E&Cs students from 22/02/2022 to 24/03/2022

Place: Electronics LAB

Faculty in charge:

Mrs. Asharani. R
Assistant professor
Department of Electronics
MSRCASC

Objective:

- Familiarize with basics of electricity
- Identify and use different hand tools
- Testing of electrical parameters, cables and measurements
- Identify and test cells/batteries
- Identify and test passive electronic components
- Use electronic components in different circuits
- Practice soldering and de-soldering of various types of electrical and electronic component

There are two working benches are set aside for assembly of circuits, with facilities of soldering and de soldering, electronic tool kits etc. With available Electronic consumables in lab the Department has decided to design a Value added course with course which enhance the both theoretical and practical skills of the students necessary for their career in backend supports at Electronics Industry. The Department has conducted a faculty meeting and collected opinions form some Industrial Experts about the course, then finalized the course with outcomes.

The main focus of this course is to train the students to build the modules of simple experiments already included in their regular curriculum of Electronics. In general, they are used to build the circuit on the bread board or spring board with fundamental Electronics components like Capacitor, resistor, Diode and transistors.

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Mrs Asharani has taken initiatives for conducting the course for B.Sc. Electronics First year students during Lab hours and additional theory classes through multimode. She initiated course by explaining about Basic terms of electronics such are electric current, voltage, resistance, capacitor, inductors, Active and passive components and their measurement by using LCR meter. Positive and negative voltages and their measurement. Time period representation and frequency conversion. Signal scaling and measuring in CRO. By using multi meter measuring line voltage and phase voltage, ground voltage. The different types of cables using in the lab such are single stage, double stand and multi strand wires and their specifications. Different types of the battery and checking of working battery by using mustimeter. Types of battery namely primary and secondary battery.

The effective voltage of the battery if we connected them in series and parallel combination. Battery replacement in the devices like multimeter and simple measuring devices in the lab. Troubleshooting and servicing of Electronic devices.

The fallowing concepts were covered in theory class and hands on training during lab session:

- Nature of Electrical signals and visualization through CRO.
- Batteries and types, working principle of Battery.
- Calibration Electronics component and its response curve along with wide classification.
- Network fundamental laws of Electricity, and Their experiments.
- Transformers and its type and usage in domestic appliances.
- Multi meter, use of meters in different circuits, LCR meter.
- Different types of soldering guns, related to Temperature and wattages, types of tips. Solder materials and their grading.
- Use of flux and other materials. Selection of a soldering gun for specific requirement. Soldering and De-soldering stations and their specifications. Different switches and their specification, uses.

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Outcome:

Students familiarize with basics of electricity Identify and use different hand tools Testing of electrical parameters, cables and measurements, Identify and test cells/batteries, Identify and test passive electronic components, use electronic components in different circuits, Practice soldering and de-soldering of various types of electrical and electronic component to construct the simple electronics circuits.

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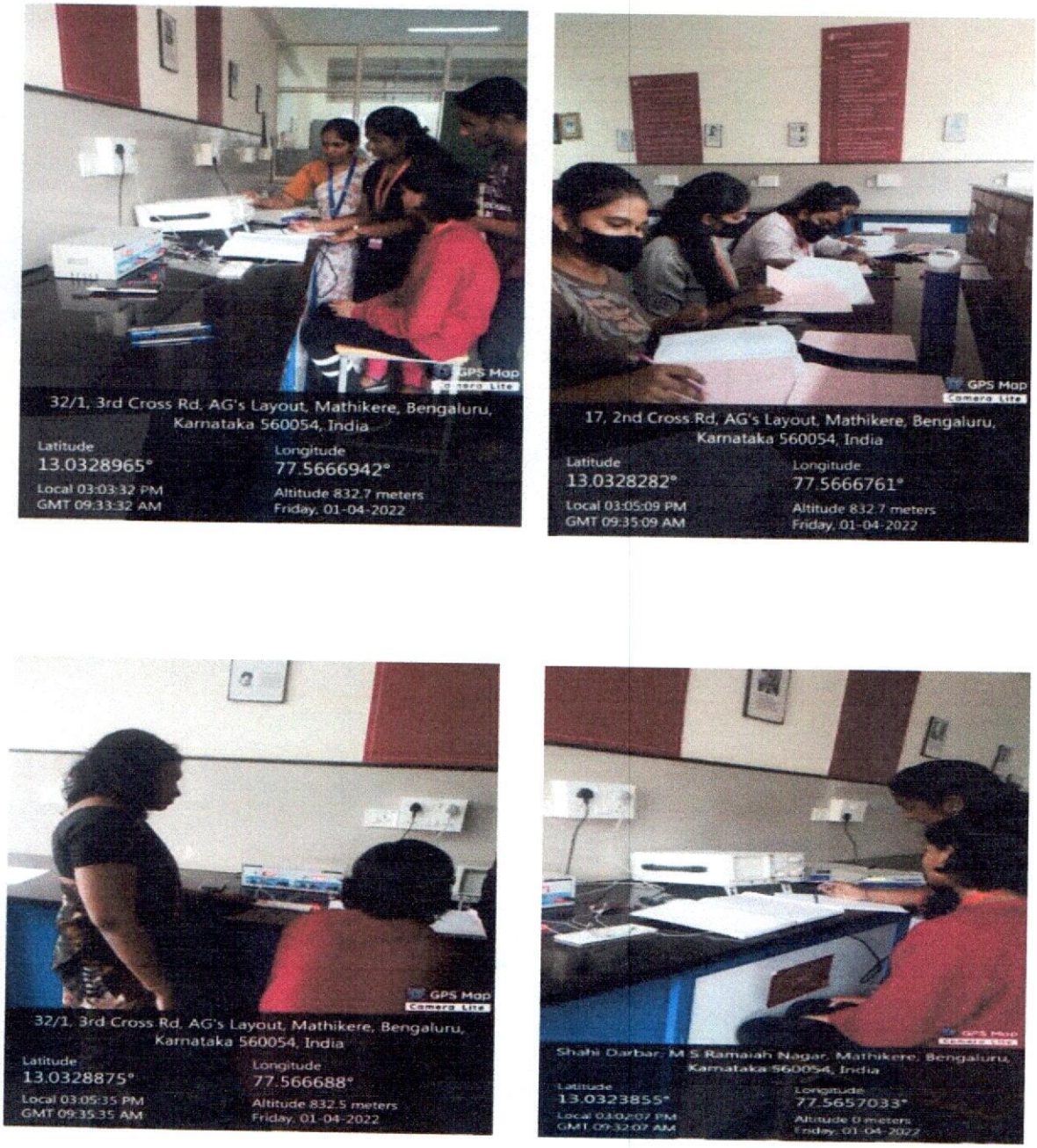

Figure 1: Active participation of students in the program

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Attendance of VAC on Electronic components assembly (ELE-VAP 02)

Sl. No	NAME	1 3/02	2 3/02	3 4/02	4 4/02	5 22/02	6 23/02	7 23/02	8 24/02	9 24/02	10 10/03	11 10/03	12 24/03	13 30/03	14 30/03	15 01/04	Total (15)
1.	ABDULLA FAHMI	P	P	P	A	A	A	A	A	A	A	A	P	P	P	P	07
2.	AMRITHA S	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	15
3.	ANANYA VALLABHA B G	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	15
4.	ANOOP R	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	15
5.	BHARATH M S	P	P	P	P	P	P	P	A	P	P	P	A	A	A	P	11
6.	GOUTHAM SINGH	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	15
7.	GURUPREET SINGH	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	15
8.	HARSH PRIYAM	P	P	P	P	P	P	A	A	A	A	P	P	P	P	P	11
9.	KAVERI SAHANI	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	15
10.	KIRAN M	P	P	P	P	P	P	P	P	A	A	A	A	P	P	P	11
11.	LOKESH M N	P	P	A	A	A	P	P	P	P	P	P	P	P	P	P	12
12.	MOHAMMED ASKAR	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
13.	PREKSHITH H V	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	15
14.	SAHANA BM	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	15
15.	SHREYA U	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	15
16.	SUPRIYA G	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	15
17.	SUVEETHA S B	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	15
18.	TANMAY M MALLIK	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	15
19.	VANDANA G A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	15
20.	VIRENDRA SONI	P	P	P	A	A	A	A	A	A	A	A	P	P	P	P	07
21.	YOSHNA SHETTY	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	15
22.	ZUHA FATHIMA N	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	15

Faculty Incharge

(Mrs. ASHARANI R)

Asharani
11/4/22

HOD

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Department of Electronics

value added course on Electronic components assembly (ELE-VAP 02)-

Question paper

Total marks: 20

I. Answer any ten questions each one carries Two marks questions.

1. List any two passive components.
2. List any two active components.
3. Mention any two semiconductor devices.
4. What is rectification?
5. Name the applications of multimeter.
6. What is soldering and desoldering?
7. List any two applications of LCR meter
8. What is fuse? Write its significance in the electrical circuits
9. Mention the device used to measure voltage and current in the electrical circuit.
10. List the applications of transformer.
11. Differentiate AC signal and DC signal

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Assessment

Sl.no	NAME	Att(5)	Test (20)	Ass(15)	Total (40)	signature
1.	ABDULLA FAHMI	2	AB	10	12	
2.	AMRITHA S	5	20	15	40	
3.	ANANYA VALLABHA B G	5	20	15	40	
4.	ANOOP R	5	20	15	40	
5.	BHARATH M S	4	11	15	40	
6.	GOUTHAM SINGH	4	15	15	39	
7.	GURUPREET SINGH	5	15	15	40	
8.	HARSH PRIYAM	4	11	15	30	
9.	KAVERI SAHANI	5	15	15	40	
10.	KIRAN M	4	11	15	30	
11.	LOKESH M N	4	12	15	31	
12.	MOHAMMED ASKAR	0	AB	10	10	
13.	PREKSHITH H V	5	15	15	40	
14.	SAHANA BM	5	19	15	40	
15.	SHREYA U	5	15	15	40	
16.	SUPRIYA G	5	15	15	40	
17.	SUVEETHA S B	5	17	15	40	
18.	TANMAY M MALLIK	5	19	15	40	
19.	VANDANA G A	5	15	15	40	
20.	VIRENDRA SONI	2	01	10	13	
21.	YOSHNA SHETTY	5	15	15	40	
22.	ZUHA FATHIMA N	5	15	14	39	

Faculty Incharge
(Mrs. ASHARANI R) 1/4/22

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CERTIFICATE

DEPARTMENT OF ELECTRONICS

This is to certify that ***SHREYA U (U18EV21S0103)*** of **1st year BSc(E &Cs)** had completed value added course on **"Electronic Components Assembly (ELE-VAC 02)"** from 22/02/2022 to 01/04/2022. Organised from the department of Electronics (under DBT Star college scheme), M S Ramaiah college of Arts Science and Commerce Bengaluru -54.

Dr. Prathiba V K	**Mrs. Asharani. R**	**Dr. A Nagarathna**
HOD, Dept. of Electronics, MSRCASC	Program Co-ordinator, MSRCASC	Principal, MSRCASC