

Rayat Shiksha Santha's
Rajarshi Chhatrapati Shahu College Kolhapur
Department of Physics
Short Term Course Report 2020-21

Department of physics runs a short term course (COC) entitled "**Understanding of Basic Electronics Devices**" for B.Sc.-III students. The purpose of this Course is to provide basic knowledge of students related with electronic devices and their applications, soldering methods, component study, assembling of circuits and testing etc. The duration of this short term course is of 30 hour. Dr.V.V.Killedar, HoD physics working as the coordinator of the course.

The students of B.Sc.III Physics are admitted for this course so that after completion of B.Sc. degree the students can use this knowledge for self business or in job in electronics industry. 12 students have taken admission to this course. The course fee is Rs.200/- per student. The lectures of this course was taken on Friday and Saturday of every week. After curriculum completion, the multiple choice test of 50 marks is conducted. The course completion certificates was given to successful students.



Dr.V.V.Killedar

Head

Department of Physics

Rayat Shikshan Sanstha's
Rajarshi Chhatrapati Shahu College, Kolhapur
Department of Physics

Short term course on "Understanding of Basic Electronics Devices"
Academic Year 2020-21

➤ **Aims & objective:**

- 1. To provide basic knowledge of electronic components to understand the working of electronic components.
- 2. To improve electronic skill among the students.
- 3. To provide job opportunity or self-employment to the students.

➤ **Course Fee:** Rs.200/-

➤ **Course duration:** 30 Periods of 48 Minutes

➤ **Students admitted for the course:** B.Sc.III Physics students

➤ **Syllabus:**

Unit-I: Introduction Basic electricity **6 P**

Safety and precaution of instruments, soldering and disoldering technique, current, voltage, amplitude and frequency.

Unit-II: Introduction of basic electronic components **6 P**

Resistance, capacitance, inductance, transformer construction and working of transformer and its types, type of power supplies i.e. a.c. and d.c., use of multimeter and testing of components

Unit-III: Understanding of Semiconductor devices **6 P**

Introduction to basic semiconductor concept, diode and its types and working, transistors and its type and working.

Unit IV: Digital IC and Timmer IC555 **3P**

IC pin digarms ,various digital IC's,Timmer 555 its pin diagarma,block digram and working,applications of IC 555.

Unit-IV: Building simple circuits on breadboards **2 P**

Introduction to PCB, Tag board, Vero board and Breadboard and its uses.

Unit V: Practical work **6P**

- 1. Testing of digital IC's.
- 2. Construction of 5V Regulated power supply.
- 3. Construction of astable, bistable , monostable multivibrator circuits.

References:

- 1. Electronic instruments Hand Book- Clyde F.Combs
- 2. Electronic engineers Reference Book, L.W.Tuner
- 3. Starting Electronics, Keith Brindley

Head
Department of Physics
Rajarshi Chh. Shahu College, Kolhapur.

**Rayat Shikshan Sanstha's
Rajarshi Chhatrapati Shahu College, Kolhapur
Department of Physics**


Short term course on "Understanding of Basic Electronics Devices"

Academic Year 2020-21

Notice

All the students of B.Sc.III (Physics) are hereby informed that the Department of Physics is going to run a certificate course entitled "Understanding of Basic Electronics Devices" for academic year 2020-21. All the students should make their registration for this course by paying Rs. 200/-as registration fee .




Head
Department of Physics
Rajarshi Chh. Shahu College, Kolhapur.

Rayat Shikshan Sanstha's

Rajarshi Chhatrapati Shahu College, Kolhapur

Department of Physics

Short term course on "Understanding of Basic Electronics Devices"


Academic Year 2020-21

Notice

All the students of B.Sc.III (Physics) are hereby informed that the Inaugural function of certificate course entitled "Understanding of Basic Electronics Devices" organized by Department of Physics for academic year 2020-21 will held on 29/04/2021 at 12 pm . All students should remain present for this function using online mode. The meeting link will be given on your classroom WhatsApp group.



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Head
Department of Physics
Rajarshi Chh. Shahu College, Kolhapur

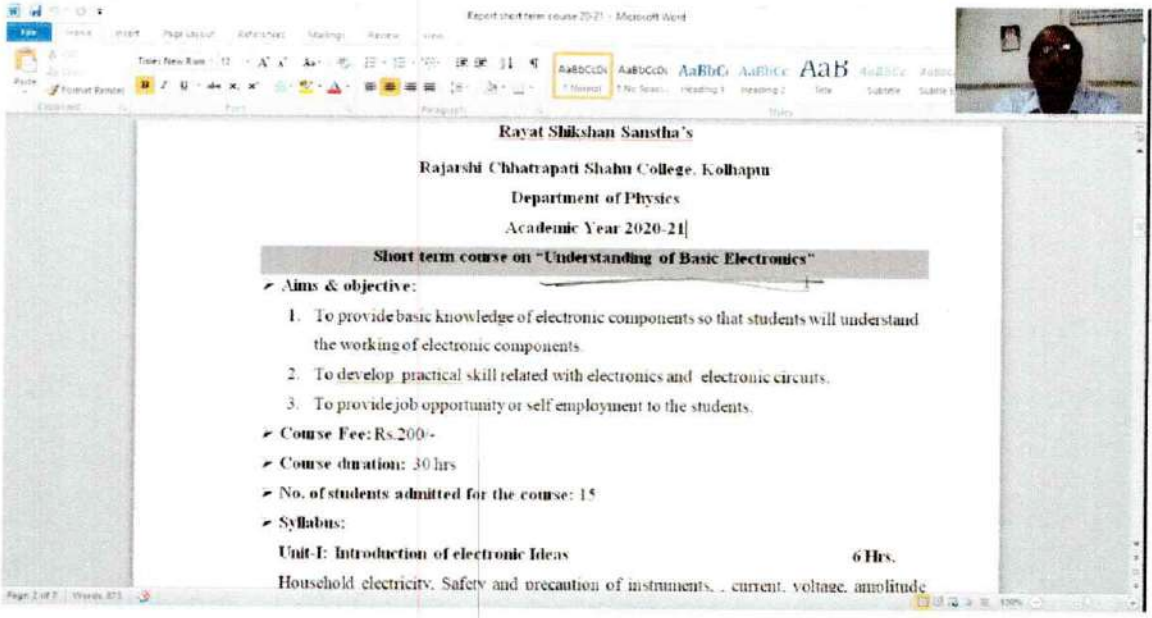


Ravat Shikshan Sanstha, Satara
Rajarshi Chhatrapati Shahu College, Kolhapur
Department of Physics
INAUGURAL PROGRAMME

Short Term Course on
Understanding of Basic Electronics

Date: 29th April 2021 Online Mode Time: 12:00 pm

- **Chief Guest**
Dr. S.T. Salunkhe
 Principal, R. C. Shahu College, Kolhapur
- **Course Coordinator**
Dr. V.V. Killedar,
 Head, Department of Physics



Ravat Shikshan Sanstha's
 Rajarshi Chhatrapati Shahu College, Kolhapur
 Department of Physics
 Academic Year 2020-21

Short term course on "Understanding of Basic Electronics"

- **Aims & objective:**
 1. To provide basic knowledge of electronic components so that students will understand the working of electronic components.
 2. To develop practical skill related with electronics and electronic circuits.
 3. To provide job opportunity or self employment to the students.
- **Course Fee:** Rs.200/-
- **Course duration:** 30 hrs
- **No. of students admitted for the course:** 15
- **Syllabus:**

Unit-I: Introduction of electronic Ideas 6 Hrs.
 Household electricity, Safety and precaution of instruments, current, voltage, amplitude



(Signature)
Head
Department of Physics
Rajarshi Chh. Shahu College, Kolhapur.

Resistor color code

4 Bands: Yellow, Black, Red, Gold → 4.7kΩ, 10%

5 Bands: Blue, Black, Black, Red, Yellow → 68kΩ, 5%

6 Bands: Green, Blue, Black, Black, Yellow, Red → 560kΩ, 5%

1st Digit	2nd Digit	3rd Digit	Multiplier	Tolerance	Temperature Coefficient
0	0	0	0.01	10%	100ppm
1	1	1	0.1	5%	50ppm
2	2	2	1	2%	25ppm
3	3	3	1k	1%	10ppm
4	4	4	10k	0.5%	5ppm
5	5	5	100k	0.25%	2.5ppm
6	6	6	1M	0.1%	1ppm
7	7	7	10M		
8	8	8			
9	9	9			



Three pin IC regulator

7805

V_{IN} (Input Voltage)

V_{OUT} (Output Voltage)

Capacitors: $0.22\mu F$ (input), $0.1\mu F$ (output)



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Head
Department of Physics
Ramesh Chh. Shahu College, Kolhapur.

Rayat Shikshan Sanstha's
Rajarshi Chhatrapati Shahu College, Kolhapur
Department of Physics

Short term course on "Understanding of Basic Electronics Devices"

Year 2020-21

List of admitted students and fees received

Sr.No.	Roll No.	Name of the student	Mobile No.	Fee received	Student Sign.
1	SIII-90	CHARUBALA DIPAK CHANDANE	9503325278	200/-	<i>C Chandane</i>
2	SIII-91	JYOTI HANMANTA AMBALNURE	8329099469	200/-	<i>J Ambalpure</i>
3	SIII-92	KRUSHNA SURESH POWAR	8237106938	200/-	<i>K Powar</i>
4	SIII-93	MAYURI AMBADAS PAWAR	9322010496	200/-	<i>M Pawar</i>
5	SIII-94	PRANALI BHAIRU PAWAR	9022629405	200/-	<i>P Pawar</i>
6	SIII-95	PRANOTI VILAS AITAWADE	9823331752	200/-	<i>P Aitawade</i>
7	SIII-96	SAYALI SHANTARAM GAWADE	9370487859	200/-	<i>S Gawade</i>
8	SIII-97	SHRADDHA APPASO POWAR	9970642014	200/-	<i>S Powar</i>
9	SIII-98	SUPRIYA DHANAJI RAJGURU	8855859721	200/-	<i>S Rajguru</i>
10	SIII-99	SURAJ GANPATI PATIL	7507578357	200/-	<i>S Patil</i>
11	SIII-100	URJITA UTTAM JADHAV	9373841525	200/-	<i>U Jadhav</i>
12	SIII-101	VINAYAK RAJARAM SAWANT	9673459759	200/-	<i>V Sawant</i>
Total				2400/-	

Receipt No. 34447 to 34458 dated 2/2/2022

[Signature]
Head
 Department of Physics
 Rajarshi Chh. Shahu College, Kolhapur.



Rayat Shikshan Sanstha's
Rajarshi Chhatrapati Shahu College, Kolhapur
DEPARTMENT OF PHYSICS

Short term course on "Understanding of Basic Electronics Devices"

Year 2020-21

Time Table

Friday and Saturday of Every Week (Two lectures per day)

Lecture Dates & Time

April 2021			May 2021		
Date	Time	No. of periods	Date	Time	No. of periods
29/4/2021	12pm	1	25/5/2021	11:00am	2
30/4/2021	11.45am	2	2/6/2021	11:00am	2
6/5/2021	1:15 pm	2	3/6/2021	2:45pm	2
7/5/2021	1:15pm	2	4/6/2021	2:15pm	2
8/5/2021	2:15pm	2	8/6/2021	1:15pm	2
11/5/2021	1:30pm	2	10/6/2021	2:30pm	2
13/5/2021	12:45pm	2	15/6/2021	11:00	2
19/5/2021	1:00pm	2	16/6/2021	11:00	1



Dr. V. V. Killedar
 Coordinator & Head
 Department of Physics

Rayat Shikshan Sanstha's
Rajarshi Chhatrapati Shahu College, Kolhapur
Department of Physics

Short term course on "Understanding of Basic Electronics Devices"

Year 2020-21

Student attendance sheet (online mode)

Roll No.	Name of the student	29/14 2021	30/14 2021	6/15 2021	7/15 2021	8/15 2021	11/5 2021	13/5 2021	14/5 2021	25/5 2021	2/6 2021	3/6 2021	4/6 2021	8/6 2021	10/6 2021	15/6 2021	16/6 2021
SIII-90	CHARUBALA DIPAK CHANDANE	P	P	A	P	P	A	P	P	P	A	P	P	P	P	P	P
SIII-91	JYOTI HANMANTA AMBALNURE	P	P	P	P	A	P	P	P	P	P	A	P	P	P	P	P
SIII-92	KRUSHNA SURESH POWAR	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P
SIII-93	MAYURI AMBADAS PAWAR	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
SIII-94	PRANALI BHAIRU PAWAR	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
SIII-95	PRANOTI VILAS AITAWADE	P	P	P	A	P	P	P	P	A	P	P	P	P	P	A	P
SIII-96	SAYALI SHANTARAM GAWADE	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P
SIII-97	SHRADDHA APPASO POWAR	P	P	P	P	P	P	A	P	P	P	A	P	P	P	P	P
SIII-98	SUPRIYA DHANAJI RAJGURU	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P
SIII-99	SURAJ GANPATI PATIL	P	P	A	P	P	A	P	P	A	P	P	P	P	A	P	P
SIII-100	URJITA UTTAM JADHAV	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P
SIII-101	VINAYAK RAJARAM SAWANT	P	P	P	A	P	P	A	P	P	P	A	P	P	A	P	P

No. of periods 1P 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 1



Head

Department of Physics
Rajarshi Chh. Shahu College, Kolhapur.

SHORT TERM COURSE
RAJARSHI CHHATRAPATI SHAHU COLLEGE, KOLHAPUR.
 (Short Term Course- Understanding Basic Electronics) : Fee Register 21-22

02.02.22

Sr.No.	Name of Student	Recpt. No.	Class	COURSE FEE	Bio. Conservation	JOURNAL	LIVING CER	ID	FINE	SHATABDI DENAGI	TOTAL
1	*CHANDANE C.D	34447	BSC-3	200							200
2	*AMBALNURE J.H	34448	BSC-3	200							200
3	POWAR K.S	34449	BSC-3	200							200
4	POWAR M.A	34450	BSC-3	200							200
5	*POWAR P.B	34451	BSC-3	200							200
6	*AITAVADE P.V	34452	BSC-3	200							200
7	*GAWADE S.S	34453	BSC-3	200							200
8	*POWAR S.A	34454	BSC-3	200							200
9	*RAJGURU S.D	34455	BSC-3	200							200
10	PATIL S.G	34456	BSC-3	200							200
11	*JADHAV U.U	34457	BSC-3	200							200
12	SAWANT V.R	34458	BSC-3	200							200
				2400							2400

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 21.02.22

Cashier Clerk Head Clerk Superitendent Principal
 Rajarshi Chhatrapati Shahu College, Kolhapur



Rayat Shikshan Sanstha's
Rajarshi Chhatrapati Shahu College, Kolhapur
Department of Physics

Short term course on "Understanding of Basic Electronic Devices"



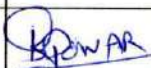


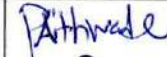
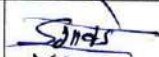
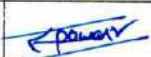
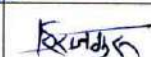
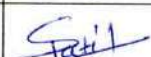

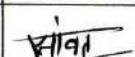
Year 2020-21

Attendance Sheet Of _____ course Test

Day: Friday

Date: 25/06/2021

Time: 3.00 to 4.00 pm

Sr.No.	Roll No.	Name of the student	Sign
1	SIII-90	CHARUBALA DIPAK CHANDANE	
2	SIII-91	JYOTI HANMANTA AMBALNURE	
3	SIII-92	KRUSHNA SURESH POWAR	
4	SIII-93	MAYURI AMBADAS PAWAR	
5	SIII-94	PRANALI BHAIRU PAWAR	
6	SIII-95	PRANOTI VILAS AITAWADE	
7	SIII-96	SAYALI SHANTARAM GAWADE	
8	SIII-97	SHRADDHA APPASO POWAR	
9	SIII-98	SUPRIYA DHANAJI RAJGURU	
10	SIII-99	SURAJ GANPATI PATIL	
11	SIII-100	URJITA UTTAM JADHAV	
12	SIII-101	VINAYAK RAJARAM SAWANT	




Dr. V.V. Killedar
 Head

Department of Physics

Rayat Shikshan Sanstha's
Rajarshi Chhatrapati Shahu College, Kolhapur
Short Term Course In Physics
Understanding of Electronic Devices
Academic Year 2020-21

Date: 25/ 6 /2021

Maximum Marks: 50

Time: 60 Min.

Class: B.Sc.III Roll No. Name of the student:

- Note: 1. All questions are compulsory
 2. All questions carry equal marks
 3. Each question is for 2 Marks
 4 Write correct answer alphabet in rectangle

Q.1. In photodiode its current increases with -----
 a) increase in intensity of light falling on it b) current in the circuit
 c) resistance in the circuit

Q.2 In bridge rectifier the numbers of diodes used are -----
 a) 4 b) 2 c) 3

Q.3. If NPN transistor has current gain of 100 and base current of 1mA then its collector current is ---
 a) 1mA b)10mA c)100mA

Q.4. An inductor or coil electrical energy is stored in the form of -----
 a) Electric field b) magnetic field c) electro-magnetic field

Q.5 Transistor is used in ----- circuits
 a) Amplifier b) rectifier c) both (a) and (b)

Q. 6 In step up transformer secondary voltage is ---- --primary voltage.
 a) greater than b) less than c) equal to

Q.7 ----- emits light when forward biased.
 a) LED b) Rectifier diode c) photo diode

Q.8 In circuit symbol of NPN transistor the arrow -----
 a) points out of the emitter b) points into the emitter
 c) points out of the collector

Q.9 IC 555 is used as -----
 a) Astable multivibrator b) monostable multivibrator c) both (a) & (b)

Q.10 IC 741 is known as -----
 a) Operational amplifier b) Integrated circuit c) Timmer IC

Q.11 Zener diode is always operated in ---- condition
 a) forward biased b) reverse biased c) unbiased

RayatShikshanSanstha's
RajarshiChhatrapatiShahu College, Kolhapur
Department of Physics

Short term course on "Understanding of Basic Electronic Devices"

Year 2020-21

Result sheet

Sr.No.	Roll No.	Name of the student	Marks obtained out of 50
1	SIII-90	CHARUBALA DIPAK CHANDANE	48
2	SIII-91	JYOTI HANMANTA AMBALNURE	44
3	SIII-92	KRUSHNA SURESH POWAR	46
4	SIII-93	MAYURI AMBADAS PAWAR	42
5	SIII-94	PRANALI BHAIRU PAWAR	46
6	SIII-95	PRANOTI VILAS AITAWADE	48
7	SIII-96	SAYALI SHANTARAM GAWADE	42
8	SIII-97	SHRADDHA APPASO POWAR	44
9	SIII-98	SUPRIYA DHANAJI RAJGURU	46
10	SIII-99	SURAJ GANPATI PATIL	44
11	SIII-100	URJITA UTTAM JADHAV	48
12	SIII-101	VINAYAK RAJARAM SAWANT	44



Dr.V.V.Killedar
Head
Department of Physics

“Education through self-help is our motto” - Karmaveer

Rayat Shikshan Sanstha's

Rajarshi Chhatrapati Shahu College, Kolhapur

(Reaccredited 3rd Cycle by NAAC at 'A' Grade with CGPA 3.07)

DEPARTMENT OF PHYSICS

CERTIFICATE OF PARTICIPATION

This is to certify that, Mr./Miss. _____

has successfully completed the certificate course on “ *Understanding of Basic Electronic Devices* ” of 30 period duration conducted by Department of Physics during academic year 2020-21.

Dr. V. V. Killedar
Coordinator

Dr. S. T. Salunkhe
Principal

