

**T.Y.B.SC.**  
**Short-term course:-**  
**“Maintenance and**  
**Repair of Electrical**  
**Domestic Appliances”**  
**(2019-20)**



S.S.G.M College, Kopargaon

Short term course 2019-20

“Maintenance and Repair of Electrical Domestic”

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Rayat Shikshan Sanstha's

**Shri Sadguru Gangageer Maharaj Science, Gautam Arts & Sanjivani  
Commerce College, Kopargaon  
Dist. Ahmednagar (M.S.) 423601**

**Internal Quality Assurance Cell  
(IQAC)**

**Syllabus Approval Letter**

The IQAC committee has approved the submitted syllabus of short term/ COC courses planned to be conducted by the Department of Electronic Science.

Sr. No.	Name of the Course	Type of the Course
1	Maintenance and Repair of Electrical Domestic Appliances	Short term course

.Head of Department of Electronic Science may proceed accordingly.

Date: 25-6-2018

Place: Kopargaon

  
IQAC-Co Ordinator  
S.S.G.M. College, Kopargaon



**S.S.G.M College Kopargaon**  
**Department of electronic science**  
**Class- T.Y.B.Sc**  
**Short Term Course :- Maintenance and Repair of Electrical**  
**Domestic Appliances**  
**Credits :- 3**

**Syllbus**

Aim of course :-

To enable the B.Sc Electronic science student to

1. Understand the working principle and construction of common domestic appliances.
2. Know the causes of fault in these application.
3. Acquire skill for testing and repair of the appliances

Skills and Opportunities :-

The student will get basic knowledge of Electrical domestic Appliances and different electronics components .The students will get Familiar with basic principles of Microwave oven, refrigerator, Electric fan and Electrical water purifier from this course students will becomes more eligible to work in all type of research and industrial laboratories in the future it will also help them for getting employment.

Theory Topics ( 3Credit )- 3 month

Maintenance and Repair of Electrical Domestic Appliances

**Unit 1 ELECTRIC WATER PURIFIER**

1. Introduction : Introduction of electric purifier
2. Construction : Construction of electric water purifier
3. Working principle: Working principle of electric water purifier
4. Common Faults: Common Faults in Electric Water Purifier, causes, testing & Repairing procedure



5. Routine maintains : Routine maintains and its procedure

## Unit 2 :MICROWAVE OVEN

1. Introduction : Introduction Microwave Oven
2. Construction : Construction of Microwave Oven
3. Working principle: Working principle of Microwave Oven
4. Applications : Various Application of Microwave Oven

## Unit 3: ELECTRICAL FANS

1. Introduction : Introduction of Electrical Fans
2. Types : Types of fans –
  - a) Table Fan
  - b) Ceiling Fan
  - c) Exhaust Fan
  - d) Pedestal fan
  - e) Cabin Fan
3. Construction : List of Main parts for each fan i.e. a) motor fan b) blades  
c) canopy d) regulators  

Specific parts : a ) Oscillating mechanism b) stand c) down rod d) capacitors e)  
base diagram of each part
4. Working Principle : Working Principle of each fan along with circuit diagrams and working of fan
5. Special characteristic: Special characteristics and application of each type of fan
6. Common faults , testing and repair over hauling and maintains: List of common faults , their causes and remedies  

Repairing procedure for all type of fans.

Testing of motor , capacitor, regulator with the help of series test lamp or multimeter.

Overholing procedure for all type of fan. Precautions while handling fans.
7. Speed control : Speed control of fan

8. Installation : Installation of exhaust and ceiling fan.

Unit 4. REFRIGERATORS : Introduction , Construction , Working principal, and application of Refrigerator.

#### List of Reference Book

1. Basic Electrical Engineering- M.L.Anwani
2. Study of Electrical Domestic Appliances –K.B.Bhatia
3. Electrical Wiring , Estimating and Costing- S.L.Uppal
4. Electric Appliances –I.M.Anwani
5. Electrical motor Rewinding and Repaire – M.L.Anwan

#### Practical's

1. Dismantling &reassembling testing fault finding & Repaire of electric water purifier
2. Study of Microwave oven
3. 3. Dismantling &Reassembling of Electric Fans – a) Ceiling b) Exhaust c) Cabin
4. Testing fault finding repair of Electric fans - a) Ceiling b) Exhaust c) Cabin
5. Dismantling &reassembling of Washing Machine
6. Testing , Fault finding and repairing Washing Machine



**Rayat Shikshan Sanstha's  
SSGM College, Kopargaon  
Department of Electronic science  
Class- T. Y. B.Sc.  
2019-2020**

**Short Term Course- Maintenance and Repair of Electrical  
Domestic”**

**Notice**

**Date: 21/11/2019**

All Students of T.Y. B.Sc. Class who have enrolled for Short Term Course  
“Maintenance and Repair of Electrical Domestic” will have their lectures from  
09-12-2019 at 2.30 pm. The attendance to the lectures are compulsory.

Venue: Hall No. :- A-219

*fr. Ganai*  
Course Co-ordinator,

*fr. Ganai*  
Head

Department of Electronic science.

**HEAD**  
**Dept. of Electronic Sci.**  
**S.S.G.M. College, Kopargaon**



Rayat Shikshan Sanstha's  
SSGM College, Kopargaon  
Department of Electronic science      Class: T.Y. B.Sc.

Date: 25/11/2019

**Short Term Course- Maintenance and Repair of Electrical Domestic Appliances**  
**Minutes of Meeting**

The meeting of the ShortTerm Course Committee has been conducted on 25/11/2019 at Department of Electronic science. In the meeting the following resolutions and decisions were made:

1. It was decided to revise the syllabus of Short term Course- A Certificate Course in **Maintenance and Repair of Electrical Domestic Appliances.**
2. For conducting the course the complete program of Theory and Practical's was designed.
3. As per the requirements of completion of the syllabus of the short term course the working hours were decided.

*Fr. Jonal*  
Course Co-ordinator,

*Fr. Jonal*  
HEAD  
Dept. of Electronic Sci.  
S.S.G.M. College, Kopargaon  
Department of Electronic Science





Rayat Shikshan Sanstha's  
SSGM College, Kopargaon  
Department of Electronics science,

Class: T. Y. B.Sc.

2019-20

Date- 25/11/2019

**Short Term Course- Maintenance and Repair of Electrical  
Domestic Appliances  
Meeting Notice**

Department of Electronics Science has decided to conduct a short term course in Maintenance and Repair of Electrical Domestic Appliances for T.Y.B.Sc. Students, the syllabus and working hours have been discussed and a complete programme has been prepared. Following members are requested to attend the meeting for the implementation of these academic year 2019-2020. The meeting will be held in Department of Electronic Science.

*for Janal*  
Course Co-ordinator,  
Prof. Bagul.A.E

*for Janal*  
Head,  
HEAD  
Department of Electronic Science  
S.S.G.M. College, Kopargaon

**Committee Members:**

1. Prof. Bagul.A.E *Janal*
2. Prof. Londhe.A.S
3. Prof. Lohate.S.V *Janal*
4. Prof. Malik.K.S *Kimbi*
5. Prof. Bhagure.R.S *Bhenuka*



# **“Maintenance and Repair of Electrical Domestic Appliances”**

**(Skill Development Course)**

**2019-20**

<b>Co-ordinate by :</b>	Department of Electronic Science
<b>Class:</b>	T. Y. B. Sc.
<b>Batch Capacity:</b>	20
<b>No. of students Admitted:</b>	11
<b>Duration of the course:</b>	3 Months
<b>Fee of Course:</b>	Free
<b>Lecture and Practical started:</b>	December, January and February.
<b>Tentative date of Examination:</b>	1 <sup>st</sup> week of March
<b>Syllabus:</b>	3 credits (Theory+ Practical's).

*fr. Jend*  
Co-ordinator:

Head *fr. Jend*  
Dept. of **HEAD** Electronic Science  
Department of Electronic Science  
S.S.G.M. College, Kopergaon

SSGM College Kopergaon  
Dist: Ahmednagar



**Rayat Shikshan santha's**

Rayat Shikshan Sanstha's  
SSGM College, Kopergaon

Short term Course – Maintenance and Repair of Electrical  
Domestic Appliances

Class: T.Y.B.Sc.

2019-20

List of Enrolled Students

Sr.no.	Roll .No	Name of the Student	Sign
1.	8201	Deshmukh abhijit narendra	<i>Abhijit</i>
2.	8202	Game sakshi venunath	<i>Game</i>
3.	8203	Gavhale mayuri ashokrao	<i>Mayurale</i>
4.	8204	Gosavi swati uttam	<i>Gosavi</i>
5.	8205	Jape snehal sopan	<i>Jape</i>
6.	8206	Kale puja sambhaji	<i>Kale</i>
7.	8207	Nehe sarala valmik	<i>Nehe</i>
8.	8208	Pangavhane sagar nanasaheb	<i>P.S.N</i>
9.	8209	Pawar pranali dadasaheb	<i>Pawar.p.d</i>
10.	8210	Salunke kajal sudhakar	<i>Salunke</i>
11	8211	Shinde chetana datattray	<i>Shinde</i>



**Rayat Shikshan Sanstha's**  
**SSGM College, Kopergaon**  
**Short term Course – Maintenance and Repair of Electrical**  
**Domestic Appliances**

**Class: T.Y.B.Sc.**

**2019-20**

**List of Students**

<b>Sr.no.</b>	<b>Roll .No</b>	<b>Name of the Student</b>
1.	8201	Deshmukh abhijit narendra
2.	8202	Game sakshi venunath
3.	8203	Gavhale mayuri ashokrao
4.	8204	Gosavi swati uttam
5.	8205	Jape snehal sopan
6.	8206	Kale puja sambhaji
7.	8207	Nehe sarala valmik
8.	8208	Pangavhane sagar nanasaheb
9.	8209	Pawar pranali dadasaheb
10.	8210	Salunke kajal sudhakar
11	8211	Shinde chetana datattray



**Rayat Shikshan Sanstha's**

**SSGM College ,Kopargaon**

**Short Term Course – Maintenance and Repair of Electrical  
Domestic Appliances**

**Class:-T.Y.B.Sc(Electronics Science)**

**Time table:- 2019-2020**

**December 2019**

<b>Monday (Theory)</b>	<b>Tuesday (Theory)</b>	<b>Wednesday (Theory)</b>
09/12/2019 (SVL)	10/12/2019(ASL)	11/12/2019 (ASL)
16/12/2019 (AEB)	17/12/2019 (AEB)	18/12/2019(SVL)
23/12/2019(RSB)	31/12/2019(RSB)	-

**January 2020**

<b>Monday (Theory)</b>	<b>Tuesday (Theory)</b>	<b>Wednesday (Theory)</b>
06/01/20(ASL)	07/01/20(ASL)	08/01/20(SVL)
13/01/20 (KSM)	-	-
20/01/20(RSB)	21/01/20(KSM)	22/01/20(RSB)
27/01/20 (ASL)	28/01/20(SVL)	

**Feb 2020**

<b>Monday (Practical )</b>	<b>Tuesday (Practical)</b>	<b>Wednesday (Practical)</b>
03/02/2020(SVL)	04/02/2020(ASL)	05/02/2020(ASL)
10/02/2020(ASL)	11/02/2020(KSM)	12/02/2020(KSM)
24/02/2020(RSB)	25/02/2020(RSB)	29/02/2020(SVL)



Rayat Shikshan Sanstha's

SSGM College, Kopergaon

Short term Course: Maintenance and Repair of Electrical  
Domestic Appliances

Class: T.Y.B.Sc. Attendance: 2019-20

Roll .No	Name of the Student	9/12/19	10/12/19	11/12/19	16/12/19	17/12/19	18/12/19	23/12/19	31/12/19
8201	Deshmukh abhijit narendra	P	P	P	P	P	P	A	P
8202	Game sakshi venunath	P	P	A	P	P	P	P	A
8203	Gavhale mayuri ashokrao	P	P	P	P	P	P	P	P
8204	Gosavi swati uttam	P	P	A	P	P	P	P	P
8205	Jape snehal sopan	P	A	P	P	P	P	P	P
8206	Kale puja sambhaji	P	P	A	P	A	P	P	P
8207	Nehe sarala valmik	P	P	P	A	P	A	A	P
8208	Pangavhane sagar nanasaheb	A	P	P	P	P	P	A	P
8209	Pawar pranali dadasaheb	P	P	P	A	P	P	P	P
8210	Salunke kajal sudhakar	P	P	P	P	P	P	P	P
8211	Shinde chetana datatray	A	P	P	A	P	P	A	P



**Rayat Shikshan Sanstha's**  
**SSGM College, Kopargaon**  
**Short term Course: Maintenance and Repair of Electrical**  
**Domestic Appliances**  
**Class: T.Y.B.Sc. Attendance: 2019-20**

Roll .No	Name of the Student	6/11/20	7/11/20	8/11/20	13/11/20	20/11/20	21/11/20	22/11/20	27/11/20	28/11/20
8201	Deshmukh abhijit narendra	P	P	P	P	P	P	P	P	A
8202	Game sakshi venunath	A	P	P	A	P	A	A	P	P
8203	Gavhale mayuri ashokrao	P	P	P	P	P	A	A	P	P
8204	Gosavi swati uttam	P	P	P	A	P	P	A	P	A
8205	Jape snehal sopan	P	P	A	P	P	P	P	P	P
8206	Kale puja sambhaji	A	P	P	P	P	P	A	P	P
8207	Nehe sarala valmik	P	P	P	P	P	P	P	P	P
8208	Pangavhane sagar nanasaheb	P	P	A	P	P	P	P	P	P
8209	Pawar pranali dadasaheb	P	P	P	P	P	P	P	P	P
8210	Salunke kajal sudhakar	A	P	P	P	P	P	P	P	P
8211	Shinde chetana datatray	P	P	P	P	P	A	P	P	P



Rayat Shikshan Sanstha's

SSGM College, Kopergaon

Short term Course: Maintenance and Repair of Electrical  
Domestic Appliances

Class: T.Y.B.Sc. Attendance: 2019-20

Roll .No	Name of the Student	9/2/20	4/2/20	5/2/20	10/2/20	11/2/20	12/2/20	24/2/20	25/2/20	29/2/20
8201	Deshmukh abhijit narendra	P	P	A	P	P	P	P	A	A
8202	Game sakshi venunath	P	P	P	A	P	P	A	P	P
8203	Gavhale mayuri ashokrao	A	P	P	P	P	P	P	P	P
8204	Gosavi swati uttam	P	P	P	P	P	P	P	P	P
8205	Jape snehal sopan	P	P	P	P	P	P	P	P	P
8206	Kale puja sambhaji	A	P	P	P	A	P	P	A	A
8207	Nehe sarala valmik	P	P	P	P	P	P	P	A	P
8208	Pangavhane sagar nanasaheb	P	P	P	P	P	A	P	P	P
8209	Pawar pranali dadasaheb	P	P	P	P	P	A	P	A	P
8210	Salunke kajal sudhakar	A	P	P	P	P	P	P	P	P
8211	Shinde chetana datatray	P	P	P	P	P	P	P	P	P





**S.S.G.M college,kopargaon**

**Department of Electronic science**

**Short term course –examination 2019-20**

**Sub-Maintenance and repair of electrical domestic appliances**

**N.B                      Seat no..... Time:2HRs      Date.....**

1. All questions are compulsory.
2. All questions carry equal marks.

**1.Fill in the blanks by selecting appropriate alternatives.**

**1.Microwave system is divided into.....**

- a) Two ports
- b) Three ports
- c) Four ports

**2.Do not operate oven when.....**

- a) Empty
- b) Fully
- c) Out doors

**3.The D.C fans are of D.C.....motors.**

- a) series
- b) parallel
- c) Out doors

**4.The stationary port of the A.C table fan is.....**

- a) stator
- b) motor
- c) Rotor

**5. ceiling fan works on the principle of rotating .....**

- a) Magnetic field
- b) Electric field
- c) Electromagnetic field

**6.braket fan used the motor.....**

- a) Single phase



- b) Double phase
  - c) Split phase
7. In the refrigerator.....is temperature sensor
- a) thermocouple
  - b) thermistor
  - c) resistor
8. The water is drained by.....in washing machin.
- a) Drain hose
  - b) Water inlet
  - c) Washer
9. The direction of running of wash motor is controlled by.....
- a) Spin timer
  - b) Wash selector
  - c) Water supply selector.
10. by using.....the spin drying time is selected
- a) Micro switch
  - b) Spinner cap
  - c) Spin timer
11. Wash timer used to .....
- a) Set the wash time
  - b) To stop spin drum
  - c) Keep the motor cool
12. The water id drained from clothes by
- a) centrifugal
  - b) centripetal
  - c) linear
13. Maximum spin time is.....
- a) 0.5 minutes
  - b) 1 minutes
  - c) 2minutes
14. wash water does not start.....
- a) Due to open circuit
  - b) Due to bearing jam
  - c) Lfuse blown
15. The frequency of wave in microwave oven is.....
- a) 2.45GHz
  - b) 2.50GHz
  - c) 2.40GHz

**Rayat Shikshan Sanstha's**  
**SSGM College, Kopargaon**  
**Short term Course – Maintenance and Repair of Electrical**  
**Domestic Appliances**

**Class: T.Y.B.Sc.**

**2019-20**

**Marks List of Students**

<b>Sr.no.</b>	<b>Roll .No</b>	<b>Name of the Student</b>	<b>Marks</b>
1.	8201	Deshmukh abhijit narendra	26
2.	8202	Game sakshi venunath	24
3.	8203	Gavhale mayuri ashokrao	20
4.	8204	Gosavi swati uttam	20
5.	8205	Jape snehal sopan	22
6.	8206	Kale puja sambhaji	22
7.	8207	Nehe sarala valmik	28
8.	8208	Pangavhane sagar nanasaheb	28
9.	8209	Pawar pranali dadasaheb	24
10.	8210	Salunke kajal sudhakar	28
11	8211	Shinde chetana datatray	28





Rayat Shikshan Sanstha

Rayat Shikshan Sanstha's  
**SHRI SADGURU GANGAGEER MAHARAJ SCIENCE, GAUTAM  
ARTS & SANJIVANI COMMERCE COLLEGE**

**Kopargaon-423601, Dist.-Ahmednagar**

Affiliated to Savitribai Phule Pune University, Pune

NAAC Accredited 'B++' Grade

**DEPARTMENT OF ELECTRONIC SCIENCE**



**Short Term Course**

**On**

**“Maintenance and Repair of Electrical Domestic Appliances”**

**CERTIFICATE**

This is to certify that Mr/Miss.....of Class T.Y. B.Sc. (Electronic Science) from Shri Sadguru Gangageer Maharaj Science, Gautam Arts & Sanjivani Commerce College, Kopargaon has successfully completed three months Short Term Course “Maintenance and Repair of Electrical Domestic Appliances” during 2019-20.

Coordinator  
Course

Head,  
Department of Electronic Science

Principal,  
S.S.G.M College, Kopargaon

Rayat Shikshan Sanstha's  
S.S.G.M College Kopargaon  
Dist:-Ahmednagar

Certificate Course  
Feedback form( Year 2019-2020)  
How you like this activity ?  
(Please tick(✓)on the appropriate option)

Sr. No	Criteria's	Excellent	Very Good	Good	Average	Poor
1	Content of curriculum					
2	Quality of Lectures					
3	Quality of Practical's					
4	Arrangement of Tour and hands on training collaboratively organized					
5	Is the course is applicable for entrepreneurship development in your future life					
6	Is the course is beneficial for students and parents as far as environment & crop production is concerned					

Any Suggestions :-

Name of the Students :-.....

Class:- .....

Signature :-.....

