

Shirdi Sai Rural Institute's

Arts, Science and Commerce College, Rahata

DEPARTMENTAL PROFILE

DEPARTMENT OF PHYSICS

1. Scope and Importance of Department-

A basic discipline of nature sciences is **physics**. Physics is also a word taken from the Latin dictionary which means nature. In Sanskrit, it is known as “Bhautiki” which is the physical world around. Physics is the study of all basic laws of nature and their manifestation in a different phenomenon. Physics explains the diverse physical phenomenon with respect to concepts and laws. Physics generates fundamental knowledge needed for the future technological advances that will continue to drive the economic engines of the world. Physics contributes to the technological infrastructure and provides trained personnel needed to take advantage of scientific advances and discoveries. Physics is an important element in the education of chemists, engineers and computer scientists, as well as practitioners of the other physical and biomedical sciences. Physics improves our quality of life by providing the basic understanding necessary for developing new instrumentation and techniques.

2. Introduction of Department-

To provide the educational facilities in the higher education, especially for the rural area; Arts, Science and Commerce College, Rahata have been started from the academic year 1997. In the same year Physics department is established. The department is conducting the courses for F.Y.B.Sc., S.Y.B.Sc. and T. Y. B. Sc. level. The Specialization in Physics at T. Y. B. Sc. is started in academic year 2014-15.

Activities and Highlights of Department:

- Highly Qualified, devotional and dedicated staff.
- Guidance for Higher Education including Teaching, Research studies, Training and Co-curricular activities.
- Guidance and mentoring students by Personal Counseling for individual problems.
- Extra efforts are taken for personality Development and Communication Skill.
- Special guidance through Remedial and Bridge Courses.

- Teacher and Students develops Laboratory Experimental kits for understanding of the Practical's like Diode/Transistor Characteristics, Kirchhoff's laws Charging and Discharging of Capacitor, Regulator, Rectifier , Logic Gates etc.
- Students also developed Solar cooker, Dryer, Flat plate collector, etc.
- Department organizes Study Tour, seminar and poster presentation for Students.
- Active involvement of teachers and students in curricular, co-curricular and extracurricular activities.
- Guidance for entrance examination

3. Year of Establishment- 1997- FYBSc, 2014- TYBSc

4. Detail of Programmes / Courses offered (UG, PG, M. Phil., Ph.D., Integrated Masters; Integrated Ph.D., Short term courses, Career oriented courses, etc. (Current academic year)

Sr. No	Programme level	Name of the programme/ Course	Duration	Entry qualification	Medium of Instruction	Sanctioned/ Approved student strength	No. of Student admitted
1	UG	B. Sc.	3 year	HSC Science	English	120	70 (23-24)

5. Annual/ semester/choice based credit system/elective course pattern (programme wise)

Programme	Pattern	Year of Implementation
B. Sc.	Semester CBCS	2019
B. Sc.	National Education Policy	2024

6. Number of Teaching and Non-teaching positions in the department

Designation	Sanctioned	Filled
Associate Professors	02	02
Asst. Professors	02	02
Peon	01	01

7. Faculty profile with name, qualification, designation, specialization, (Ph.D. / M. Phil. Etc)

Sr. No.	Name of faculty	Qualification	Year of appointment	Designation	Specialization	Number of years of teaching experience (Year and months)	
1	Dr. S. R. Potdar	M. Sc., SET, Ph.D.	16/08/2007	Associate Professor	Electronics	17	04
2	Dr. Vikram Popat Bhalekar	M.Sc., Ph.D., SET	10/09/2008	Associate Professor	Nuclear Techniques	16	03
3	Mr. V. P. Chaudhary	M. Sc., SET, NET	15/06/2018	Assistant Professor	Renewable Energy Sources	06	06
4	Mr. B. M. Pehere	M. Sc., B.Ed. SET	15/06/2021	Assistant Professor	Renewable Energy Sources	03	06

8. Ongoing /completed research projects by faculty funded by governmental and non-governmental agencies

Sr. No	Name of the principal investigator	Duration of the project	Name of the research project	Amount fund received	Name of funding agency	Year of sanction	Dept. of recipient
1	Dr. S. R. Potdar	2012-14	Microprocessor 8085 based Temperature control system	1,85,000/-	UGC	2012	Physics
2	Dr. S. R. Potdar	2012-14	Genetic Fuzzy Optimization of Greenhouse Temperature	1,55,000/-	SPPU, Pune University	2012	Physics

9. Research papers published in journals notified on UGC website (Last five years)

Sr. No.	Name of Journal	Title of Research Paper	ISSN/ ISBN No.	Whether peer reviewed. Impact Factor, if any

Author- Dr. S. R. Potdar				
1	Journal of Information and Computational Science	Optimization of Fuzzy Logic Controller Using Genetic Algorithm: A Simulation Study on Greenhouse Climate Control System	ISSN: 1548-7741	UGC care listed PEER Reviewed
2	Journal of Emerging Technologies and Innovative Research	Study of ExpEYES junior kit and its applications in Experimental Physics	ISSN-2349-5162	UGC care listed PEER Reviewed
3	International Journal of Innovations in Management, Engineering and Science	Microprocessor 8085 Based Control System: A Study on Prototype Greenhouse	ISSN: 2455-9008	UGC care listed PEER Reviewed
4	INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH IN TECHNOLOGY	Fuzzy Greenhouse Climate Monitoring and Control Simulation Using Sugeno Method	ISSN: 2349-6002	UGC care listed PEER Reviewed
5	Journal of Emerging Technologies and Innovative Research	Crop Growth Activity Monitoring with Fuzzy Logic	ISSN-2349-5162	UGC care listed PEER Reviewed
6	International Journal of Electronics Engineering Research.	Greenhouse Air-Temperature Modeling and Fuzzy Logic Control.	ISSN 0975-6450	UGC care listed PEER Reviewed
7	International Journal of Engineering Science and Technology.	Simulation Study of Unheated Greenhouse Environment Under Shading and Ventilation.	ISSN 0975-5462	UGC care listed PEER Reviewed
8	International Journal of Engineering Science and Technology.	Thermal Modeling of Air-Conditioned Prototype Room Using Matlab-Simulink.	ISSN 0975-5462	UGC care listed PEER Reviewed
9	Shodhkosh : Journal of Visual and Performing Arts	The Journey to Sustainable Development via Solar Energy: A Recap	ISSN: 2582-7472	UGC care listed PEER Reviewed

10	International Journal of Intelligent Systems and Applications in Engineering	Quantum Machine Learning Algorithms for Complex Optimization Problems	ISSN:2147-6799	UGC care listed PEER Reviewed
Author- Dr. V. P. Bhalekar				
1	Journal of Material Science Material in Electronics	Impact of number of sensitizer SILAR cycles on the performance of ZnO based PbS quantum dot-sensitized solar cells	ISSN- 1573-483X	Peer Reviewed IF- 2.8
2	ES Materials & Manufacturing	The influence of polysulfide solvent on the performance of cadmium sulfide sensitized zirconium dioxide-based quantum dots	ISSN: 2578-062X	Peer Reviewed
3	Parishodh- Engineering Skill Developement	One Pot Synthesis of Lead Sulphide Thin Films	ISSN:2347-6648	Peer Reviewed
4	ES Materials & Manufacturing	Strong Quantum Confined Lead Sulphide Quantum Dots using Ionic Reaction and Their Properties	ISSN: 2578-062X	Peer Reviewed
5	Engineered Science	PbS sensitized TiO ₂ based quantum dot solar cells with efficiency greater than 5% under artificial light: effect of compact layer and surface passivation	ISSN: 2576-9898	Peer Reviewed
6	Physica status solidi (a)	N3-Sensitized TiO ₂ /Nb ₂ O ₅ : A Novel Bilayer Structure for Dye-Sensitized Solar-Cell Application	ISSN-1862-6319	Peer Reviewed IF-2.0
7	Materials Research Express	Impact of composition of polysulphide electrolyte on the photovoltaic performance in quantum dot sensitized solar cells	ISSN- 2053-1591	Peer Reviewed IF- 1.9
8	Chemical Physics Letters	Lead sulphide sensitized ZrO ₂ photoanode for solar cell application with	ISSN-0009-2614	Peer Reviewed IF- 2.8

		MoO ₃ as a counter electrode		
9	Journal of Xidian University	Novel Corona Virus Pandemic-Impact on Indian Economy, E-commerce, Education and Employment	ISSN- 1001-2400	Peer Reviewed
10	Journal of Xidian University	Novel Corona Virus (COVID-19) Pandemic: The Overall Scenario and its Effect on ECO	ISSN-1001-2400	Peer Reviewed

10. Number of books and chapter in edited volumes/Books Published

Title of the book/chapter published	National/ International	Year of publication	ISBN/ISSN No.	Name of the publisher
Author- Dr. S. R. Potdar				
Progression in Science, Technology and Smart Computing	National	2021	978-81-948061-2-7	Prarup Publication
Atomic and Molecular Physics- A Text Book for TYBSc Physics SPPU	National	2021	978-93-24457-44-1	Success Publication
Atoms and Molecules Reference book for M. Sc. Physics	National	2021	978-9324457-46-2	Success Publication
Author- Dr. V. P. Bhalekar				
Quantum Dot Sensitized Solar Cell	International	2022	978-1-80356-594-1	Intech Open

Quantum Mechanics	National	2022	978 -93 - 5158 -488 - 9	Success Publication
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11. Name of Research Guides-

Sr. No.	Name of research guide	Ph. D/ M. Phil
1	Nil	Nil

12. Number of Ph. D/ M. Phil awarded by faculty

Name of Ph. D/M. Phil scholar	Name of the Guide/s	Title of the thesis	Year of registration of scholar	Year of awards of Ph. D/ M. Phil.
Nil				

13. Faculty as chairman/members in National committees/International Committees/ EditorialBoards/BOS/University committees etc.

Sr. No.	Name of faculty	Name of the body in which full time teacher participated	Member of editorial board	Reviewer
NA				

14. Student undertaking field projects/ internships-

1. a) Percentage of students who have done in-house projects including inter departmental / Programme

Program name	Program code	Year	No. student undertaking field projects/Internships

T. Y. B. Sc.	PHY 349	2018-19	11
T. Y. B. Sc.	PHY 349	2019-20	12
T. Y. B. Sc.	PHY 349	2020-21	11
T. Y. B. Sc.	PHY 369	2021-22	12
T. Y. B. Sc.	PHY 369	2022-23	01
T. Y. B. Sc.	PHY 369	2023-24	07
T. Y. B. Sc.	PHY 369	2024-25	01

1. b) Percentage of students placed for projects in organizations outside the institution i.e.in
Research laboratories/Industry/society other agencies

Program name	Program code	Year	No. student undertaking field projects/Internships
NIL			

15. Awards / Recognitions received by faculty

Year of awards	Name of full time teachers receiving awards from state level, National level, International level	PAN	Designation	Name of the award, fellowship, received from government or recognized bodies
Nil				

16. Numbers of awards / Medals for outstanding performance in sports/cultural activities in National/ International/ State level etc. received by students

Year	Name of the award/Medal	National/International/State etc.	Sports/Cultural	Aadhar/Student ID No.	Name of the Student
Nil					

17. Students Qualifying in State/National/International level examination (NET, SET, GATE, GMAT, GRE, TOEFL/UPSC/MPSC/State government examination, etc.)

Year	Registration No./Roll for the examination/Name	Number of students selected								
		SET	NET	GATE	GMAT	CAT	RGE	TOFEL	Civil services	State Govt. Examinations/Others
1	Miss Tejashree Tribhuvan	SET								
2	Miss Madhuri Jejurkar	SET								
3	Miss Chaitali Gidhad	SET								
4	Mr. Shrikant Thorat			GATE						

18. Student progression to higher studies. UG to PG, PG to M. Phil., PG to Ph. D, M. Phil to Ph. D, Ph. D to post-Doctoral, etc.

1. UG to PG

Sr. No.	Program Graduated From	Department Graduated from	Student Name	Name of the Institute Joined	Name of the Program admitted
1	T. Y. B. Sc. Physics 23-24	Physics	Mr. Nilesh Machhindra Shinde	Department of Physics, SPPU, Pune	M. Sc. Physics
2	T. Y. B. Sc. Physics 23-24	Physics	Ms. Sonali Chandrakant Rohom	Sangamner College, Sangamner	M. Sc. Physics
3	T. Y. B. Sc. Physics 23-24	Physics	Ms. Sapna Bharat Gangad	S. S. G. M. College, Kopargaon	M. Sc. Physics
4	T. Y. B. Sc. Physics 23-24	Physics	Mr. Aditya Balasaheb Gadekar	R. B. N. B. College, Shrirampur	M. Sc. Physics
5	T. Y. B. Sc. Physics 22-23	Physics	Mr. Tushar Dattatray Jejurkar	Department of Physics, SPPU, Pune	M. Sc. Physics
6	T. Y. B. Sc. Physics 19-20	Physics	Miss Apeksha Bawake	Department of Physics, SPPU, Pune	M. Sc. Physics
7	T. Y. B. Sc. Physics 19-20	Physics	Miss Dnyaneshwari Dange	Department of Instrumentation, SPPU, Pune	M. Sc. Instrumentation Science
8	T. Y. B. Sc. Physics 19-20	Physics	Mr. Sachin Vikhe	Department of Instrumentation, SPPU, Pune	M. Sc. Instrumentation Science
9	T. Y. B. Sc. Physics 19-20	Physics	Miss Game Komal	K. J. Somaiya College, Kopargaon	M. Sc. Physics
10	T. Y. B. Sc. Physics 19-20	Physics	Miss Game Kaveri	K. J. Somaiya College, Kopargaon	M. Sc. Physics
11	T. Y. B. Sc. Physics 19-20	Physics	Mr. Nale Priya	K. J. Somaiya College, Kopargaon	M. Sc. Physics
12	T. Y. B. Sc. Physics 19-20	Physics	Miss Mate Pratiksha	Ahmednagar College	M. Sc. Physics

13	T. Y. B. Sc. Physics 21-22	Physics	Miss Gadekar Kshitija	Department of Instrumentation, SPPU, Pune	M. Sc. Instrumentation Science
14	T. Y. B. Sc. Physics 21-22	Physics	Miss Ankita Jejurkar	Department of Instrumentation, SPPU, Pune	M. Sc. Instrumentation Science
15	T. Y. B. Sc. Physics 21-22	Physics	Miss Kajal Gaikwad	Department of Instrumentation, SPPU, Pune	M. Sc. Instrumentation Science
16	T. Y. B. Sc. Physics 20-21	Physics	Miss Londhe Kirti	P. V. P. College, Pravaranagar	M. Sc. Physics
17	T. Y. B. Sc. Physics 20-21	Physics	Miss Taskar Prajakata	K. J. Somaiya College, Kopargaon	M. Sc. Physics
18	T. Y. B. Sc. Physics 20-21	Physics	Miss Raut Jayashri	K. J. Somaiya College, Kopargaon	M. Sc. Physics
19	T. Y. B. Sc. Physics 20-21	Physics	Miss Dange Mayuri	K. J. Somaiya College, Kopargaon	M. Sc. Physics
20	T. Y. B. Sc. Physics 18-19	Physics	Miss Kudale Supriya	P. V. P. College, Pravaranagar	M. Sc. Physics
21	T. Y. B. Sc. Physics 18-19	Physics	Miss Kadam Poonam	P. V. P. College, Pravaranagar	M. Sc. Physics
22	T. Y. B. Sc. Physics 18-19	Physics	Miss Gadekar Amruta	P. V. P. College, Pravaranagar	M. Sc. Physics
23	T. Y. B. Sc. Physics 18-19	Physics	Miss Raut Maya	RYK College, Nashik	M. Sc. Physics
24	T. Y. B. Sc. Physics 18-19	Physics	Miss Tupe Anjali	RYK College, Nashik	M. Sc. Physics
25	T. Y. B. Sc. Physics 18-19	Physics	Mr. Ugale Tejas	Ahmednagar College	M. Sc. Physics
26	T. Y. B. Sc. Physics 18-19	Physics	Miss Nujat Shaikh	P. V. P. College, Pravaranagar	M. Sc. Physics

1. PG to M. Phil

Sr. No.	Program Graduated From	Department Graduated from	Student Name	Name of the Institute Joined	Name of the Program admitted
Nil					

1. PG to Ph. D or M. Phil to Ph. D.

Sr. No.	Program Graduated From	Department Graduated from	Student Name	Name of the Institute Joined	Name of the Program admitted
Nil					

19. Placement of outgoing students (Last five years)

Sr. No.	Contact detail	Number of students placed	Name of the employer with contact details	Package received	Program graduated from
1	Miss Nujat Shaikh	01	Shri Sai Nirman English school Shirdi	15000/- per month	TYBSc Physics MSc Physics
2	Mr. Sachin Vikhe	01	Cheda Electricals and Electronics Pvt. Ltd.	3 Lakh per year	TYBSc Physics MSc Instrumentation Science
3	Mr. Shrikant Thorat	01	TIFR, Mumbai March 24 onwards	37000/- per month	TYBSc Physics MSc Physics
4	Mr. Shrikant Thorat	01	JRF, Amity University, Noida Delhi	31000/- per month	TYBSc Physics MSc Physics
5	Miss Dnyaneshwari Dange	01	Talentedge Education Ventures Pvt Ltd, Pune office	3 Lakh per year	TYBSc Physics MSc Instrumentation Science
6	Miss Apeksha Bawake	01	UpThink Editech Services Pvt Ltd, Pune	3 Lakh per year	TYBSc Physics MSc Physics
7	Miss Apeksha Bawake	01	The Pune Knowledge Cluster,	15000/- per month	TYBSc Physics MSc Physics

			WEnyan Scholorship		
8	Mr. Ugale Tejas	01	Yes Securities Banglore	6 lakh per year	TYBSc Physics MSc Physics
9	Mr. Kiran Nikam	01	HCG Manavata Cancer centre Nashik	27000/- per month	TYBSc Physics MSc Physics
10	Miss Sayali Pagare	01	Jaslok Hosital,Mumbai	3.24 lakh per year	TYBSc Physics Radiology
11	Mr. Kamlesh Lute	01	Sainirman School	15000/- per month	TYBSc Physics
12	Ms. Mayuri Dange	01	Shri Saibaba Senior College Shirdi	21000/- per month	TYBSc Physics MSc Physics
13	Ms Nale Priya	01	Pritisudhaji School Rahata	15000/- per month	TYBSc Physics MSc Physics
14	Ms. Madhuri Jejurkar	01	PVP College Pravaranagar	18000/- per month	TYBSc Physics MSc Physics
15	Miss Nale Rajashri	01	PVP College Pravaranagar	18000/- per month	TYBSc Physics MSc Physics
16	Miss Kudale Rani	01	Sharda junior college	15000/- per month	TYBSc Physics MSc Physics
17	Mr Nilesh Shirsat	01	New English School Kalamboli	75000/- per month	TYBSc Physics MSc Physics
18	Ms Dange Swati	01	PVP College Pravaranagar	18000/- per month	TYBSc Physics MSc Physics
19	Ms Dange Priti H.	01	KJ Somaiya college Kopargaon	15000/- per month	TYBSc Physics MSc Physics
20	Mr. Padekar Yogesh	01	ASC College Rahata	10000/- per month	TYBSc Physics MSc Physics
21	Ms Joshi Vaishnavi	01	ASC College Rahata	10000/- per month	TYBSc Physics MSc Physics
22	Miss Sonawane Pranjal	01	Sujata international school Sonai	15000/- per month	TYBSc Physics MSc Physics

20. List of alumni/contribution

Sr. No.	Name of Alumni	Year of Graduation/Post Graduation	Position held	Contact detail (Email, Mobile No.)	Quantum of Contribution
					Nil

21. List of eminent academicians and scientists / visitors to the department-

1) Prof. Dr. R. R. Mudholkar, Department of Electronics, Shivaji University Kolhapur

22. Seminars/ Conferences/Workshops organized & the source of funding-

Sr. No.	Level National/ International/ State	Name of the workshop/Seminar	Funding agency	Amount sanctioned	Durations (From-To)	Number of participants
1		Nil				

Student profile programme/course wise (Last Five Years):

Year	Name of the Course/programme (refer question no. 4)	Applications received	Enrolled		Total number of Students
			*M	*F	
2018-19	TYBSc Physics	11	2	9	11
2019-20	TYBSc Physics	12	2	10	12
2020-21	TYBSc Physics	11	2	9	11
2021-22	TYBSc Physics	12	-	12	12
2022-23	TYBSc Physics	01	1	-	01
2023-24	TYBSc Physics	07	2	5	07
2024-25	TYBSc Physics	01	-	1	01

*M = Male *F = Female

23. Departmental result

Year	Program Code	Program Name	Number of students appeared in the final year examination	Number of students passed in final year examination
2018-19	B. Sc.	T. Y. B. Sc. Physics	11	11
2019-20		T. Y. B. Sc. Physics	12	12
2020-21		T. Y. B. Sc. Physics	11	11
2021-22		T. Y. B. Sc. Physics	12	10
2022-23		T. Y. B. Sc. Physics	1	1
2023-24		T. Y. B. Sc. Physics	7	5

24. Number of linkages for faculty exchange/student exchange/training/internship/field trips/job on training/research etc.

Sr. No.	Title of the linkage	Name of the partnering institution/ industry /research lab with contact details	Year of commencement	Duration (From-To)	Nature of linkage
	Nil				

25. Number of functional MoU's with corporate houses/ industries/other institutes/Universities, etc.

Organisation with which MoU is signed	Name of the institution/ industry/ corporate house	Year of signing MoU	Duration	List the actual activities under each MoU year wise	Number of students/teachers participated under MoUs
Indian Association of Physics Teachers IAPT	IAPT	2022	1 year	IAPT Natinal Graduates Physics Examination	24

26. Details of Infrastructural facilities

1. a) Library

Sr. No.	Name of Books	Publisher	Number of copies
01	A Text Book of Electronics	Nirali	1
02	Text Book of Oscillations, Waves & Sound	Nirali	1
03	Text Book of Electricity & Magnetism	Nirali	1
04	Text Book of MMP	Nirali	1
05	Text book of Physics (FYBSc)	Nirali	1
06	Text Book of Physics (XI)	Narendra	1
07	Basic Electricity & Semiconductor Devices (XI)	Phadke	1
08	Simplified Physics-I (XII)	Vidyabharti	1
09	Simplified Physics-II (XII)	Vidyabharti	1
10	Objective Physics (XII)	Modern	1
11	Text Book of Electronics	Choufer	1
12	Text book of Optics	Vision	1
13	Physics Term II	Nirali	1

14	Mechanics	Pragati	1
15	Computer organization & microprocessor	Vision	1
16	Most Likely Questions	Navneet	1
17	Problems in Physics	Narendra	1
18	Physics- I	Reliable	1
19	Physics-II	Pragati	1
20	A text book of Physics	Narendra	1
21	Physics Text Book	Himalaya	1
22	Physics -II	Nikita	1
23	Fundamentals of Physics	Sheth	1
24	Course in Physics	TMH	1
25	Physics for competitive Exam	Pragati	1
26	Physics to remember-I	Vidyabharti	1
27	Physics to remember-II	Vidyabharti	1
28	Physics Digest	Navneet	1
29	Question Bank	Navneet	1
30	Physics	Himalaya	1
31	Physics Guide	Pragati	1
32	Physics Master Series	Himalaya	1
33	Science Model Question Papers	Navneet	1
34	Physics Digest (XI)	Navneet	1
35	Physics Solution I	Noble	1
36	Physics solution II	Noble	1
37	Objective Physics	Nikita	1
38	Model Test Papers	Navneet	1

39	Physics XI	MSBSHSE	1
40	Physics XII	MSBSHSE	1
41	Takiche Ghav	Signet	1
42	Physics for you (oct. 2006)	MTG	1
43	Physics for you (nov. 2006)	MTG	1
44	Physics for you (dec. 2006)	MTG	1
45	Electronics for you (Aug. 2008)	EFY	1
46	Electronics for you (May 2009)	EFY	1
47	Electronics for you (Mar. 2010)	EFY	1
48	Electronics for you (May 2012)	EFY	1
49	Practical Physics	Narendra	1
50	Television Engineering	TMH	1
51	Oscillations , Waves & Sound	Vision	1
52	OP-AMPs & Linear Integrated Circuits	PHI	1
53	Microprocessor Architecture, Programming & Applications.	Wiley Eastern	1
54	A brief history of time		1
55	Spoken English		1
56	Text book of heat and thermodynamics		1

1. b) Internet facilities for Staff & Students- 100mbps net facilities is available

1. c) Class rooms with ICT facility- 01 (Computer and Projector, 807 sq.ft. area)

1. d) Laboratories

Sr. No.	Facility	Detail	Area
1	--	HoD Cabin+ Staff room	200 sq. ft.
2	Well Furnished laboratory with working tables and necessary electrical fitting	Lab 1	498.3 sq. ft.
3	Well Furnished laboratory with working tables and necessary electrical fitting	Lab 2	498.3 sq. ft.
4	Well Furnished laboratory with working tables and necessary electrical fitting	Lab 3	788.9 sq. ft.
5	Well Furnished laboratory with working tables and necessary electrical fitting	Dark Room 1	249.15 sq. ft.
6	Well Furnished laboratory with working tables and necessary electrical fitting	Dark room 2	87.20 sq. ft.
7	Well Furnished laboratory with working tables and necessary electrical fitting can accommodate upto 6 computers	Computer lab	107.20 sq. ft.
8	---	Lab assistant+ store	110 sq. ft.
Total area= 1832.05 sq. ft.			

1. e) List of Equipments/Instruments

Equipments Purchased under UGC Additional/Development Grant

Sr. No.	Name of Equipment	Quantity
1	Dual Trace CRO	1
2	Signal Generator	1
3	Newtons ring apparatus	2
4	Microcontroller Kit	1
5	Temp/Humidity Data Logger	1
6	Microprocessor 8085 Kit	1
7	Fly Wheel	2
8	Double Refracting Prism	2
9	Step Down Transformer	3

10	Thermometer	4
11	Digital Stop Watch	4
12	Micrometer screw gauge	15
13	Vernier calliper	15
14	Soldering Gun	2
15	Knife edges with G clamp	2
16	Polorid	2
17	Diode LASER	1
18	Op-Amp Kit	2
19	UJT characteristics	2
20	Kundt's tube Apparatus	1
21	Polarimeter	1
22	Demorgan's Theorem Kit	1
23	Mercury Vapour Lamp	2
24	Induction coil	2
25	Flat Spiral Spring	2
26	Digital Multimeter	5
27	Prism Flint	4
28	Sodium lamp with transformer	2
29	Voltmeter	4
30	Miliammeter	4
31	Slotted Weight	4
32	Retort Stand	4
33	Metal Wire	1
34	Thermocouple	1
35	Reading Telescope	2
36	Log Decrement Apparatus	1
37	Travelling Microscope	3
38	Slit adjustable	2
39	Stroboscope accessories	1

40	Power Supply	4
41	Transistor Characteristics apparatus	1
42	Digital Signal Generator	2
43	Dual Trace CRO	1
44	Kater's Pendulum	2
45	G Clamp	6
46	Retort Stand	6
47	Op-Amp Oscillator	1
48	Diffraction grating	2
49	Steel meter scale	5
50	Slit for RP	2
51	Spirit level	4
52	Diode characteristic apparatus	2
53	Simple pendulum bob	5
54	Spectrometer Prism	4
55	Band Gap of Semiconductor	1
56	JFET characteristics	1
57	Solar Cooker	1
58	Lamp and Scale arrangement	1
59	Dual Power Supply	2
60	Power Supply	3
61	expEYES Kit	3
62	Constant deviation spectrometer	1
63	Lux Meter Data logger	1
64	Viscosity apparatus	1
65	Digital LCR meter	1
66	Digital Luxmeter	1
67	Digital Sound Level Meter	1
68	Stefans Constant Apparatus	1
69	Ultrasonic Interferometer	1

70	Research optical bench	1
71	Hall Effect apparatus	1
72	Resistivity of Semiconductor	1
73	Susceptibility apparatus	1
74	Platinum resistance thermometer	1
75	He-Ne Laser	1
76	Michelson Interferometer	1
77	Maxwell Bridge	1
78	Anderson Bridge	1
79	e/m Apparatus	1
80	Rydbergs constant Apparatus	2
81	Incubator	1
82	Muffle Furnace	1
83	Diode Laser	1
84	Planks constant	1

27. Details on student enrichment programmes (special lectures / workshops / seminar) with external experts

Sr. No.	Enrichment programmes- Special lectures	Experts (Alumni)
1	Opportunities in Physics	Mr. Shrikant Thorat
2	Opportunities in Physics	Ms. Sayali Pagare

28. Teaching methods adopted to improve student learning-

- Youtube
- PowerPoint presentations
- Use of Video Clips
- Project Work
- Video Conferencing Lecture
- Organized Workshop

- Online NPTEL courses
- Online NPTEL/UGC-SWAYAM lectures
- Students seminars
- Field projects/Survey
- Review of research papers (Avishkar)
- Use of Adobe Acrobat reader
- Online lectures using Zoom/Googlemeet Platforms.
- Remedial and Bridge Courses
- MOOC course Guidance

29. Participation in Institutional Social Responsibility (ISR) and Extension activities

Dr. S. R. Potdar

- Program Officer of National Service Scheme
- College Examination Officer
- Academic Research Coordinator
- Red Ribbon Club Coordinator
- Community Engagement Cell Coordinator

Dr. V. P. Bhalekar

- IQAC Coordinator
- NAAC Coordinator
- Campus Supervision Committee Member
- Chairman of Competitive Exam Center
- Red Ribbon Club Member
- Community Engagement Cell Member
- AISHE/NIRF Nodal Officer

30. SWOC analysis of the department

Strengths

1. Experienced and well qualified staff.

2. Computer with Internet Facility for staff and students.
3. Well equipped lab for B. Sc. I, B. Sc. II. & B. Sc. III classes.
4. Well Equipped laboratory with standard equipment and digital instruments.
5. Staff is engaged actively in research with Scopus Indexed and UGC care listed Publications.
6. Separate departmental library with ample number of reference books.
7. Average result of the department is **95%**.
8. Adequate number of charts.
9. Bridge course and remedial coaching facility
10. Two Minor research projects are completed.
11. IT facility for Teaching-Learning Process
12. Certificate Course, Bridge Remedial Courses for Students

Weaknesses

1. Computer facilities should be enhanced.
2. Teaching staff is less as compared to the workload.
3. MoU with reputed institution for student exchange and research

Opportunities

1. Organization of National level and International level Conferences.
2. Starting more skill enhanced certificate course
3. MoU with industries and academia for field visits, placements and research.

Threats/ Challenges

1. Less no. of students prefer physics as a special subject for B.Sc. III due to career opportunities.

31. Future plans:

- 1. To Start M. Sc. Physics Program**
 - 2. To Establish research centre**
 - 3. To organize National/International Seminar/Conferences**
 - 4. To Establish National/International MOU for upgradation of department**
 - 5. To publish research papers in high impact factor journals**
 - 6. Enhancement of laboratory instrumentation**
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