DEPARTMENT REPORT

Name of the Department: -	Physics
Faculty:-	Dr. K.G.Bhole Mrs. S P Bhave Mr. E G Ghatpande Dr. Mrs. S. Jain Mr. S N Kadam
Mission Statement of the Department:-	1. To help the students realize their unlimited and all-round potential. 2. To create an atmosphere conducive to their over-all development, focusing primarily on developing a scientific attitude. 3. To provide a sound conceptual background and encouragement for the study of Physics. 4. To encourage the student "To compete with oneself, to cooperate and collaborate with others". 5. To create an atmosphere in the department and labs in which the student will feel comfortable and feel like returning to time and again. 6. To "Always Be There" for the students whenever they need us – academically or otherwise. To lead by example, remembering that our students are at a very impressionable age and that as teachers we can have a profound impact on them.
Technical and administrative staff:-	1. Mr B M Chaudhary (Lab. Assist) 2. Mr Milind Damle (Lab. Assist) 3. Mr Solanki Prashant (Lab. Assist) 4. Mr A N Gadakari (Lab Attendent) 5. Mr M M Galande (Lab Attendent) 6. Mr M Kmore (Lab Attendent) 7. Mr A G Mahimkar (Lab Attendent) 8. Mr P N Patil (Lab Attendent) 9. Mr S B Pawar (Lab Attendent) 10. Mr S P Paradkar (Lab Attendent) 11. Mr G P Sawant (Lab Attendent) 12. Mr S V Satpute (Lab Attendent) 13. MR S R Tambe (Lab Attendent)
Physical Infrastructure: -	**Laboratory** **Area** Lab-I 70' x 30' Lab-II 30.7' x 30.6' Dark Room-I 22' x 19.2'

	Dark Room –II 10’ x 22’ Store Room 9.2’ x 22’ Staff Room 22’ x 11.4’ HOD’s Room 22.7’ x 11.4’ Info Tech Lab-I & II 39.3’ x 30.6’; 31’ x 25’ **Major Equipments:** 1. Three motion microscopes 2. Dual Trace Cros 3. Signal Generators 4. Power Supplies 5. Digital Stop Watches 6. Electronic Balance 7. Spectrometers 8. Telescopes 9. Mirror Galvanometers 10. Multimeters 11. Microprocessor Kits 12. Michelson Interferometer 13. Material Science Microscope 14. Lasers 15. Demonstration Kits 16. Models
Programs and Subjects taught	BSc physics and computer science (applied component)
Other courses and programmes:-	
Add-on courses UGC career oriented course under X plan by the department:	1. Applied for the add on course i) certificate program on analytical instrumentation in physical sciences to UGC 2. Applied to University of Mumbai for permission to start a certificate program on **computer hardware and networking**
Revision of syllabus by the university.	1. FYBSc Physics revised in 2008-09 2. SYBSc Physics revised in 2009-10 3. TYBSc Physics revised in 2010-11 4. TYBSc Computer Science (applied component) revised in 2010-11 The faculty members took active participation when revision of syllabus was critically discussed and suggestions were forwarded to board of studies Physics, University of Mumbai. Subsequently when the university organized workshops for the new syllabus, we made it a point to see that one or two of our members attended and participated in them: 1. Workshop on Physics Lab B N Bandodkar

	College, Thane. 2. Workshop on Physics and EI. lab in Ruparel College. 3. Workshop on Cosmology at St. Xavier's College. 4. Workshop on FYBSc Physics new syllabus at Ruparel College Mumbai. 5. Workshop on SYBSc Physics new syllabus at R J College Ghatkopar. 6. Workshop on TYBSc Physics new syllabus at V G Vaze College Mulund. Prof. K G Bhole was a member of syllabus committee for BSc. and MSc Physics and Information Technology.He is currently a chairperson of BOS in Physics, University of Mumbai. He is also a member of ad-hoc committee for BSc. And MSc Information Technology course (Self financing course), University of Mumbai to guide in examination and syllabus matters.
Salient features of Department	1. Number of faculty: 05 2. PG Recognition: 02 from 1988 3. Ph D guides: Nil 4. Papers taught: Physics at FY/SY/TY level and applied component –Computer science 5. No. of Seminars conducted(Interdisciplinary state level):three 6. Total number of publications:18 7. Total number of Workshops/seminars attended:25 8. Number of participation in international conferences: Three 9. No. of research projects completed and in progress: UG: one 10. No. of consultancy projects: nil 11. No. of UG students: 12. No Of PG students: Nil 13. No of Ph.D students: Nil 14. No of Ph. D. degree Awarded: Nil 15. Other programs:Nil
Projects undertaken, completed:-	one on "Physics and Society" given to SY/TY BSc students.(Completed).
Seminars Conducted By the department	1. Department organized a talk on "Theory of relativity simplified" at college level for SYBSC students. It was also invited to present at R.J. College, Mumbai (2005)

	2. Department organized one day workshop of Heads of departments of various colleges affiliated to university of Mumbai to discuss the revision of physics syllabus at FY/SY/TY level.(2006) 3. Organized IAPT-NGPE examinations for physics students and given coaching for these examinations in 2006-07-08-09 for UG students.
Consultancy Projects	1. The department is organizing training for Physics Olympiad for the last 19 years and every year a large number of students are selected for the training programmes organized by Homi Bhabha Center Mumbai. 2. Prof K G Bhole was working on UGC project on High Energy ion beam Implantation of Fe Ions on silicon for which he visited the Nuclear science Center New Delhi. He was also involved in fabrication and design of low temperature I-V measurement apparatus at University Dept. of Physics. 3. Although there is no Postgraduate department in physics in the college, two teachers are actively involved in teaching at PG Levels. Prof K G Bhole took lectures of MSc part I & II of Information technology. Prof. Bhole has been a guide for project work for MBA degree of IGNOU. 4. Prof. Ms. S.P. Bhave taught C++ programming to MSc part-II students of Physics in Mumbai University at Kalina campus. 5. She was invited as a resource person to train teachers on C++ at Vaze College, Mumbai. 6. She is teaching Biophysics to the Biotechnology students of our college for the last 15 years. 7. Dr. S Jain was invited to give lectures to S.Y.B.Sc. students in a vacation program organized by the IPA in Mumbai university, Kalina campus. 8. She was invited to participate in the Resource Generation Camp for Physics Olympiad organized by the Homi Bhabha Center for Science Education, TIFR and has also been made the member of the Indian Physics

	Olympiad Board. Mr. S N Kadam has applied for a UGC project.
Contribution of the department to college administration and activities.-	All the staff of the department help in admission and examination work. They are also members of administrative committees like examination, purchase, UGC, steering committee, IQAC committee, Unfair means inquiry committee, library committee at college level as well as university level. 1. Dr K G Bhole was a vice principal of the college for three years. He was also a member of Board of studies in physics. Currently he is a chairman of BOS physics, University of Mumbai. Member of Faculty of science, Academic council, Unfair means inquiry committee, Library committee of University. 2. He is also looking after Information Technology department (BSc and M.Sc IT) 3. Mrs S P Bhave is chairperson of unfair means inquiry committee, member of steering committee for Naac of the college. 4. Mr E G Ghatpande is the incharge of inventory committee of the college. 5. Dr S Jain is the chairperson of students' council of the college. Mr S N Kadam is chairperson for remedial coaching.
Introduction to the Non-Teaching staff	Laboratory assistants are talking keen interest in learning beyond their routine work. 1. Mr. B M Chaudhary is a lab assistant. He handles computer maintenance and is also involved in computerized admission process, computerization of examination work etc. He was sent for training at western regional instrumentation center, University of Mumbai. 2. Mr P N Patil has been extensively involved in developing new circuits and demonstration kits for Physics experiments.
Participation of the department in extension activities of the college:	1. The faculty of the department is participating in conducting self-financing courses like IT and Biotechnology. They also participate in academic counseling activities and

	administration of IGNOU. Apart from this they are involved in teaching of Physics Olympiad, IIT Entrance training and training for Common Entrance test for Medical courses. The preparatory programme for TYBSc Physics, which is open to other college students, also is conducted during March/April every year. 2. The seminars are organized for the students on various topics. The students will have to prepare thoroughly to appear for viva. Preliminary examinations are conducted for TYBSc to train them for University examination.

Students profile

Class:FYBSc

Year	Appeared	I Class	II Class	Pass Class	% Pass
2005-06	72	13	20	04	
2006-07	62	18	12	01	
2007-08	79	08	14	09	
2008-09	66	06	08	03	
2009-10	101	04	17	09	

Class:SYBSc

Year	Appeared	I Class	II Class	Pass Class	% Pass
2005-06	36	20	11	02	
2006-07	55	18	21	01	
2007-08	39	21	12	01	
2008-09	58	14	24	01	
2009-10	44	09	16	07	

Class:TYBSc

Year	Appeared	I Class	II Class	Pass Class	% Pass
2005-06	25	11	11	--	88
2006-07	26	10	09	--	73.08
2007-08	15	07	06	--	86.66
2008-09	12	02	05	--	
2009-10					
2010-11	09	02	01	01	44.44

Innovations in Teaching Methods:-	1. In the theory sessions in class, we rely mostly on lecturing. In addition, demonstration with the help of relevant kits or models is also given. Demonstration method is widely used in laboratory instructions. The experiment write-ups (sheets) guide the students

	about the procedure and precautions for the experiment to be performed. We have started a new practice for TYBSc students, of allowing them to do the experiment individually rather in pairs. This increases the confidence of students and helps to improve their skill. 2. The number of students offering Physics at SY and TY level being limited, most of them interact freely with the faculty. Many a time, they even discuss their personal problems and difficulties with the faculty to seek guidance and help. Study circle approach brings teachers and students close. The study circle Coordinator monitors the activities. More emphasis is given on problem solving sessions. The students of nearby colleges also participate in this programme whenever possible. 3. TY preparatory programme
Innovation in evaluation Methods:-	The feedback collected from the students is discussed in department meetings. Seminars are organized for the students. Demonstration methods and the skills learnt by the students has been given certain weight age in examination. Enhancement of learning resources during the past five years. Equipments and instruments are added every year to replace the old non-repairable ones. The laboratory staff has been trained to maintain the equipments. Some of the instruments are fabricated and designed by the staff and students and they are giving excellent service. The electronic circuit models of various experiments, specially designed for the student community are well appreciated. Following equipments were added in last five years: 1. Dual trace Cathode ray oscilloscopes, Signal and function generators, power supplies, various meters, charts, Multimedia kits and CD-ROM writer and readers, computers, spectrometers, traveling microscopes, storage

	oscilloscope etc. 2. The staff is actively involved in accessing the Internet and motivating the students to use this source of information of infinite wealth more constructively and effectively.
Plans for coming five years :-	Plans for coming five years: The Department is planning to start PG courses in physics in near future. **General:** 1. Though our course does not demand it, we feel that it would benefit the students if we organize visits to various institutes and industries. 2. To have training course for Science teachers of neighbouring schools. 3. To call eminent Physicists and other scientists to address out students. **Starting with the Year of Physics:** 4. We are planning a presentation on "Relativity for the Layman" and other interesting subjects for neighbouring schools and colleges. 5. We are planning to hold an "Open Lab Day" for the students of neighbouring schools. **Weaknesses:** 1. There is scope to increase the use of computer as a teaching tool. 2. We are weak, as a department, in engaging in research in Physics.

Annual Budget: Approx.

Capital: Rs.2,00,000/-(approx)

Recurring: Rs.60, 000/- (approx)

Annual budget for the department for library.

YEAR	Allocation (RS)	Utilization (RS)
2005-06	13950.00+6800.00	24531.00+1054.00
2006-07	15000.00+6800.00	8245.75+10887.00
2007-08	16900.00+6800.00	12007.60+16413.60
2008-09	16900.00+8500.00	18346.00+8495.00
2009-10	16500.00	9294.00

Books in the Library :_____432_____ Journals:____ _____

Prominent Alumni

Our past students are well placed in various fields such as computers and Indian statistical institute, IISc, IITs etc

Name	Current position	India / Abroad	Other deails

Rajas Kelkar	Financial Journalism	India	Successful financial Journalist.
Murali Nair	Software/hardware	IBM India	Managerial post
Sandip Gore	Stock holding corporation of India	India	Manager
Vaibhav Rane	Human Resource (MBA)	OTIS India	Assist Manager
Nikhil Joshi	MSc from IIT Kanpur and doing Ph D in TIFR	India	Now in TIFR
Kishore Kapale	MSc from IIT Bombay, Ph. D USA	USA	Professor, Settled in USA
Pallavi Teredesai	Ph. D IISc Bangalore	USA	Professor IIT Gandhinagar
Raghunath Ratabole	MSc from IIT, Mumbai, PhD from IISc.	India	Scientist in Mat Science
Asavari Marathe	MSc from IIT, Mumbai	India	BARC
Kedarnath Karnik	MCA, Pune University	Abroad	Software field
Rajendra Bapat	MCA, Pune University	Abroad	Software field
Samir Purohit	MCA, Mumbai University	Abroad	Software field
Umanath Kamat	MSC, Mumbai Univ, PhD from PRL	India	Scientist
Aatish Kamble	MSc, Mumbai Univ, doing PhD in IISc	India	
Sanjay Puranik	Studying LLB		
Anil Maybhate	MSc, and PhD, Pune Univ	USA	Scientist
Hemant Lagvankar	MSc, Mumbai Univ	India	Science popularizing
Jalpa Shastri	Course in computerized diamond jewellery designing	India	Jewellery designing
Ravi Umale			Film industry

Student's Achievements	1. Bharat Shrivastav, Prasad, Milind Sawant and Lata Mahadevan did BSc Tech after graduation and are now suitably employed. 2. Sudhil Doddi, Satish and Bhargav Singh have done diploma in Packaging 3. Sampada has become a counselor in IMS learning. 4. Vijay Shukla did MSc in IIT, Mumbai and Vihang and Harshal Patil studied Space Physics in the university of Pune. They were working simultaneously on a project in parallel computing.
Programmes Organized	Participation of the department in extension activities of the college: 1. The faculty of the department is

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	some concepts through simulations. Students offering Physics at TYBSc level have to study Computer Science as applied component subject. They use computers for plotting graphs and preparing power point presentations. 5. **Physics laboratories** have several demonstration kits, models and equipments. The demonstration experiments are an integral part of the practical curriculum in Physics. Charts and models are extensively used while covering the topics. Laser beam source, Lap-top, Computers, Over-head projectors, LCD's are some of the equipments that are used for teaching.
Other Highlights	Participation of the department in extension activities of the college: The faculty of the department is participating in conducting self-financing courses like IT and Biotechnology. They also participate in academic counseling activities and administration of IGNOU. Apart from this they are involved in teaching of Physics Olympiad, IIT Entrance training and training for Common Entrance test for Medical courses. The preparatory programme for TYBSc Physics, which is open to other college students, also is conducted during March/April every year. The seminars are organized for the students on various topics. The students will have to prepare thoroughly to appear for viva. Preliminary examinations are conducted for TYBSc to train them for University examination. **Introduction to the Non-Teaching staff** Laboratory assistants are talking keen interest in learning beyond their routine work. 1. Mr. B M Chaudhary is a lab assistant. He handles computer maintenance and is also involved in computerized admission process, computerization of examination work etc. He was sent for

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Other highlights:

Information for e-format:

Name of the department:	Physics
Year of establishment	1984
No. of teachers (2009-10)	05
No. of administrative staff:	13
No of technical staff	Nil
No. of ongoing projects(2009-10)	Nil
Ratio of students to teachers	
No of books in departmental library:	155
No. of journals/periodicals	3 in lib
No. of computers;	03
Success rate of students	Avg 85%
Annual budget	Total about 2.5 lacs
Faculty who have attended national and intl seminars (last 5 years)	04
Awards and recognition received by faculty	
Publications of the faculty	~20
No of students passed in NET/SLET	Nil