

**SHIKSHA MANDAL'S
BAJAJ COLLEGE OF SCIENCE,
WARDHA**
(AN AUTONOMOUS INSTITUTION)

Departmental Profile (Physics)



$$\frac{-\hbar^2}{2m} \nabla^2 \Psi + V \Psi = i \hbar \frac{\partial}{\partial t} \Psi$$

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About the Department:

The department of Physics was established in 1962 which is now one of the best well-equipped centers for undergraduate studies in this central part of India. The department aims to stimulate an interest in the social and economic implications of physics in society. It has three separate laboratories including a dark room, a workshop with more than 100 experimental set ups and advanced instrumentation facilities like X-ray diffraction, Impedance analyzer. Every year it caters for around 300 UG students for regular curricular and co-curricular activities.

Vision Mission and Goals:

Vision

- Uncovering the secrets of the physical world through research, education and innovation

Mission

- Building a brighter future through the study of physics and its applications
- Advancing our understanding of the universe through physics and education

Goals

- Imparting the role of technology in society as well as to the important policy issues.
- Develop ability in young minds to justify and explain specific approaches to solving problems.
- Where theory meets practice: preparing students for careers in physics and beyond

Highlights of the Department:

- Well-equipped spacious laboratories with more than 100 experimental set ups, computers with internet facility and departmental library facility.
- Guidance center for physics competitive exams for higher studies viz. JAM, JEST etc.
- *Active Astronomy Club.*
- Recognized center for National Graduate Physics Examination (NGPE).
- Guidance center for active participation in various intercollegiate competitions.
- Linkage for student Internship programme with recognized national research institutes.
- Certificate course in nanoscience and nanotechnology.

Academic Programmes:

Programs	Intake Capacity	Pattern/ Scheme
B.Sc. degree with Physics, Chemistry, Mathematics or Physics, Electronics, Mathematics or Physics, Computer Science, Mathematics	100	Semester pattern CBS
Certificate Course in Nanoscience and Nanotechnology (Nanosense)	15	30 hours

The B.Sc. programme is designed to provide a strong foundation in Physics. The curriculum includes courses in Classical Mechanics, Quantum Mechanics, Electricity and Magnetism, Thermodynamics, Statistical Physics, and Astrophysics, Solid State Physics, spectroscopy, nuclear physics, Nanomaterials and electronics. In addition, students are required to take any two courses from Mathematics, Chemistry, Electronics and Computer Science. The course design ensures that the graduating students with Physics as one of the subject will have the academic standard pre-requisites to take post-graduation programme in Physics as well as in many allied fields in India and abroad. The multidisciplinary skills they will be acquiring will be of tremendous value to them especially if they choose to enter such cutting edge research areas; be it in Academia or in Industry. We believe that the graduates with physics will be a complete package to face any national competitive exams held for the graduates.

Syllabus of all Semesters is available on the college website:

https://jbsw.shikshamandal.org/wp-content/uploads/2022/10/B.Sc-Physics-Syllabus_compressed.pdf

Details of certificate courses offered:

Nanosense: Certificate Course in Nanoscience and Nanotechnology

Objective: Nanotechnology is the latest frontier of all developments in scientific sectors. This certificate course aims to give exposure to nanoscience and nanotechnology.

Course Feature: This is a certificate course in Bajaj College of Science (BCS), Wardha and which is specially designed for the students and professionals who aspire to pursue their career in this interdisciplinary emerging area of nanotechnology. This programme

aims at inculcating the fundamental knowledge of nanoscience and nanotechnology to the participants through 30 hrs of interactive theoretical and practical sessions to be conducted at BCS. This programme also includes the virtual interaction sessions with Principal Scientist at National/International laboratory.

Syllabus and Course Content:

- Introduction of Nanoscience and Nanotechnology and History of nanomaterials
- Science of Nanomaterials and their importance in various fields
- Top down approach, bottom up approach to synthesize nanomaterials
- Inorganic nanomaterials, carbon nanomaterials and their wide applications
- Characterization techniques for Nanomaterials: Structural, optical, chemical, electrical, thermal and magnetic properties
- Applications of nanomaterials in physical and biological sciences.
- Live demonstrations of synthesis of nanomaterials and analysis using XRD, UV-vis., FTIR techniques.
- Hands on laboratory training for synthesis
- Guest talks

Who can Register:

Third year Undergraduate student (B.Sc.)/Post Graduate student (M.Sc.)/Research Scholars of any stream of Biological Sciences and Mathematical Sciences.

Duration of the Course: Every year January-March, 30 hours (Including hands on laboratory sessions)

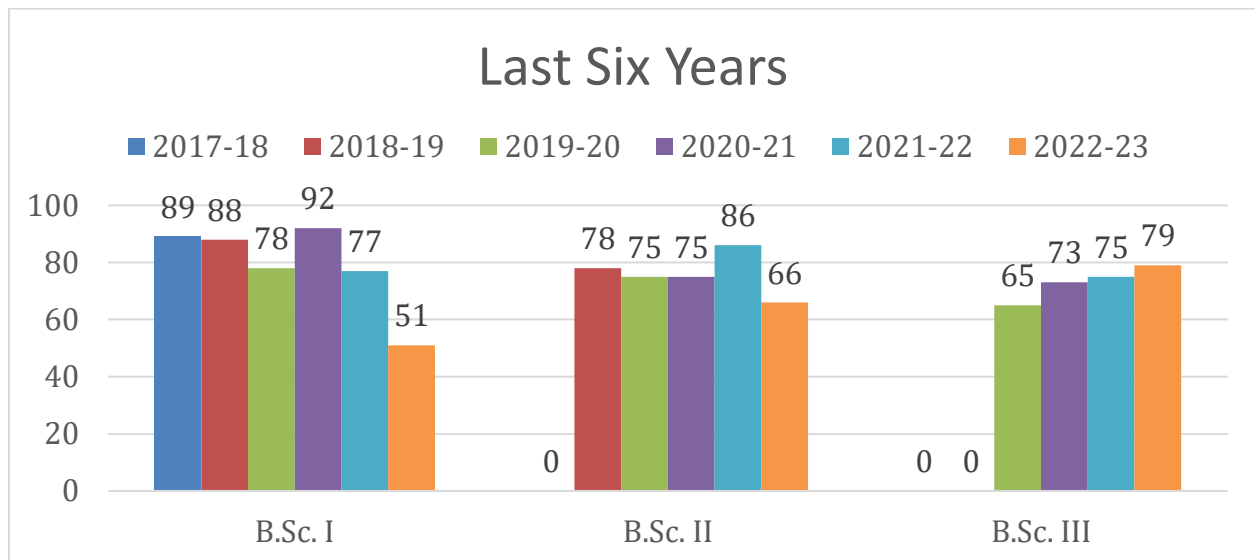
No. of Seats: 15

Registration Fee: Rs. 500/-

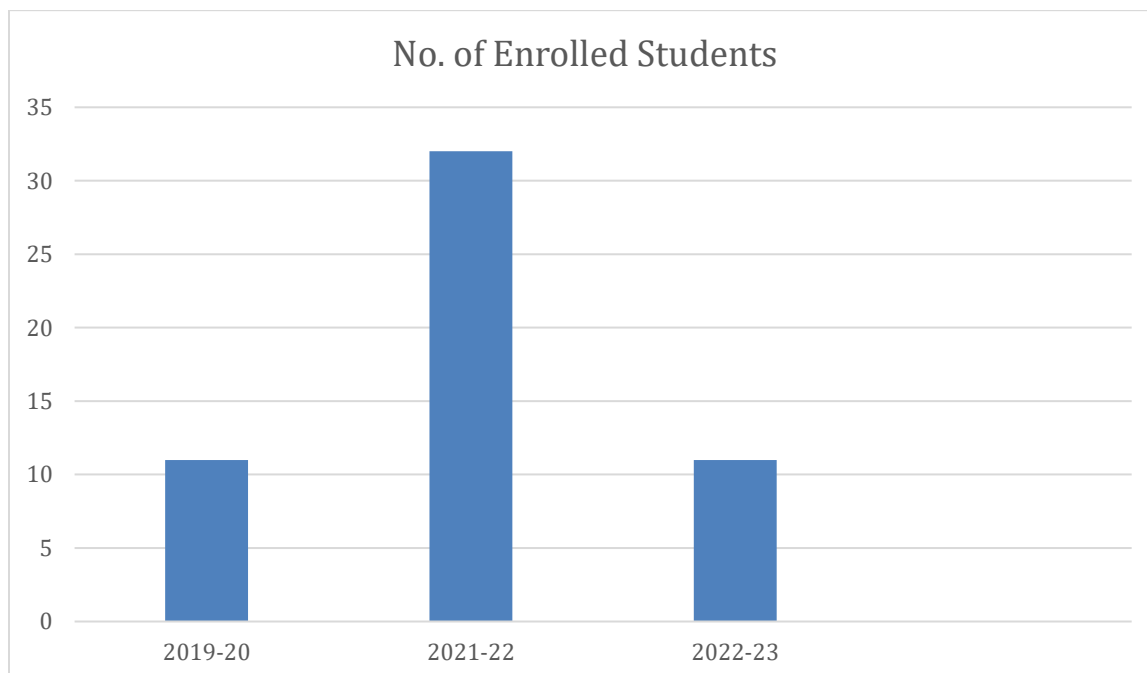
Course Coordinator: Dr. G. V. Lakhotiya

Student Enrolment:

UG Programme:



Certificate Course:



Board of Studies and Faculty Details:

Board of Studies:

Name of the Member	Category
Dr. S.H. Bagade	Chairman
Dr. G.V. Lakhotiya	Member
Dr. Sudhir Tiple	Member
Dr. M.M. Yerpude	Member
Dr. Jyoti Singh Asso. Prof. & HOD, Department of Physics, St. Xavier's College, Mumbai 400001	Subject experts (Other University)
Dr. B. R. Sankapal Professor, Department of Physics, VNIT, Nagpur-440 010 (M.S.) India	Subject experts (Other University)

Faculty Details:

			
Dr. Sanjay H Bagade <ul style="list-style-type: none"> • Head & Associate Professor • PhD, SET • Year of Joining - 2003 • 23 Yrs. Teaching Experience • Theoretical Physics • Research Publications- <ul style="list-style-type: none"> • Last five years – 03 • Book Chapter – 01 • Research Project – 02 	Dr. Govinda V Lakhotiya <ul style="list-style-type: none"> • Assistant Professor • PhD, NET • Year of Joining-2013 • 10 Yrs. Teaching Experience • Material Science and Nanotechnology • Research Publications - 06 <ul style="list-style-type: none"> • Last five years – 04 	Dr. Sudhir R Tiple <ul style="list-style-type: none"> • Assistant Professor • PhD • Year of Joining-2017 • 10 Yrs. Teaching Experience • Material Science and Astrophysics • Research Publications – 5 <ul style="list-style-type: none"> • Book Chapter – 01 	Dr. Mangesh M Yerpude <ul style="list-style-type: none"> • Assistant Professor • PhD, NET • Year of Joining-2018 • 5 Yrs. Teaching Experience • Material Science and Nanotechnology • Research Publications – 07 <ul style="list-style-type: none"> • Last five years – 04

Former Faculties:

Sr. No	Name	From	To
1.	Dr. D.S. Supe	16.06.1962	31.03.1994
2.	Shri K.C. Ronghe	29.06.1963	30.09.1998
3.	Shri D.V. Paturde	27.07.1965	31.03.2001
4.	Shri B.G. Deshpande	21.08.1967	31.05.1999
5.	Shri Z. Hussain	16.07.1971	30.11.2000
6.	Shri P.M. Kharche	16.07.1973	31.03.2010
7.	Shri R.L. Chandankhede	14.09.1978	31.10.2014
8.	Shri R.V. Chouguley	09.11.1984	31.01.2018
9.	Shri R.G. Jadhao	18.11.1985	28.02.2023
10.	Dr. P.D. Wankar	28.08.1986	31.03.2018
11.	Dr. R.D. Sontakke	21.12.2004	31.05.2020

Supporting Staffs:

Sr. No	Name	From	To
1.	Shri U.P. Malode	04.09.1962	31.01.1991
2.	Shri M.V. Lahudkar	01.12.1963	30.06.2003
3.	Shri S. Bahaddin	13.07.1964	30.06.1992
4.	Shri S.O. Tayade	22.09.1964	31.10.2004
5.	Shri M.G. Kumre	01.07.1965	31.03.1997
6.	Shri V.D. Jawanjal	01.04.1976	30.06.2001
7.	Shri P.S. Kamde	10.11.2003	In Service
8.	Shri K.M. Chauhan	01.01.1993	In Service
9.	Shri V.M. Zodpey	01.01.1993	In Service
10.	Shri P.B. Raut	01.07.1999	In Service
11.	Smt. V.M. Gaikwad	10.11.2003	In Service
12.	Shri A.V. Dukare	06.06.2005	In Service

Faculty Enrichment:

Orientation Course

- Dr. G. V. Lakhotiya – UGC Human Resource Development Center, Devi Ahilya Vishwavidyalaya, Indore (2018)
- Dr. Sudhir Tiple – UGC Human Resource Development Center, Devi Ahilya Vishwavidyalaya, Indore (2019)
- Dr. M. M. Yerpude – Teaching Learning Centre, Ramanujan College, University of Delhi (2020)

Refresher Course

- Dr. Sudhir Tiple – Dr. Babasaheb Ambedkar Marathwada University, Aurangabad (2020)
- Dr. M. M. Yerpude – UGC Human Resource Development Centre, Gujarat University, Ahmedabad (2022)
- Dr. G. V. Lakhotiya – Teaching Learning Centre, Ramanujan College, University of Delhi (2022)

Faculty Development Programs

1) Dr. S. H. Bagade

- One Week FDP on 'Arduino', Bajaj College of Science, Wardha (2020)
- One Week FDP on 'Jmol Application', Bajaj College of Science, Wardha (2020)
- Webinar Lecture Series on Modern Physics and Material Science, Govt. Holkar (Model, Autonomous) Science College, Indore, MP
- FDP on Online Teaching and E-content. IIDE (2020)
- One Week Pedagogical Training for Teachers on Tools for Online Teaching Learning and Evaluation, Swami Ramanand Teerth Marathwada University, Nanded (2020)

2) Dr. G.V. Lakhotiya

- Workshop on Active learning in Photonics (ALOP) at HBCSE, TIFR, Mumbai (10th-12th January 2018)
- RBPT National Workshop by CoESME, IISER Pune at Kolkata (23rd -26th September 2018)
- Olympiad Exposure Camp for teachers at HBCSE, TIFR, Mumbai (3rd -7 th December 2018)
- Workshop on active learning by Royal Society of Chemistry (16th -17th January 2019)
- National Online Experimental Workshop in Physics Simulation (10th-12 July 2020)
- Course on Learning Physics Through Simple Experiments (2nd April to 10th June 2020)
- Faculty Development Program on Online Teaching & E-content (3rd-4th June 2020)

- MEMP International Conference (Virtual), C-MET Pune (8-10th March 2021)

3) Dr. M. M. Yerpude

- One Week FDP on 'Arduino', Bajaj College of Science, Wardha (2020)
- One Week FDP on 'Jmol Application', Bajaj College of Science, Wardha (2020)
- FDP on Online Teaching and E-content. IIDE (2020)
- Two Weeks Faculty Development Programme on "MANAGING ONLINE CLASSES and CO-CREATING MOOCS:2.0" from May 18 - June 03, 2020, Teaching Learning Centre, Ramanujan College, University of Delhi.
- One Week Online FDP on Materials: Recent Trends & Engineering Applications during 02 - 07 June 2020, GOKARAJU RANGARAJU Institute of Engineering and Technology (Autonomous)
- One Week Online Short Term Training Program on "Recent Development of Advanced Materials and its Applications in Technology" ,17-22 June 2020, KDK College of Engineering, Nagpur.
- One Week Pedagogical Training for Teachers on Tools for Online Teaching Learning and Evaluation, from 1-6 July 2020, School of Mathematical Sciences, Swami Ramanand Teerth Marathwada University, Nanded.
- 3 days Training Programme on Assessment and Learning, 9-11 January 2023, MSFDA, Pune.
- One Week Teacher Training Programme on Computer Interfaced Science Experiments Using ExpEYES, 8-13 May 2023 IUAC, New Delhi.

Teaching Learning Practices:

Contact sessions are delivered through various practices:

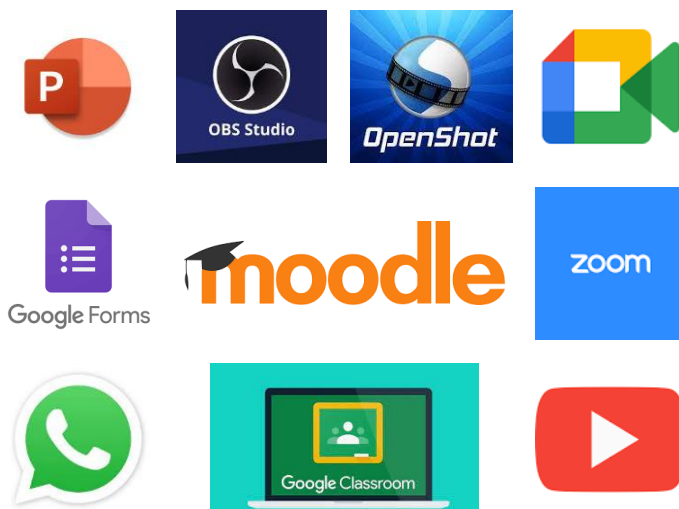
- Interactive Lectures
- Laboratory Sessions
- Project-Based Learning
- Flipped Classroom Approach
- Online Tools/Websites
- Peer Learning
- Mentoring
- Case Studies

Continuous Internal Evaluation is done through the following practices:

- Unit tests
- Quiz and Tutorials
- Seminars
- Home assignments
- Case Studies
- Project work
- Group Activities

Digital Learning Practices:

- Use of LMS like Moodle and Google classroom for e-content, quiz and notices for all grades Teaching through Simulations and Virtual Labs specially Phet simulations
- Interactive Multimedia Presentations
- Online Discussion Forums through zoom, google meet etc.
- Feedbacks through google forms
- Separate departmental google site for e contents
- Dedicated website for Astro Club



Infrastructure and Facilities:

Department has two separate laboratories for UG students with a workshop and research laboratory. Measurement of the different facilities are as follows:

S.N.	Place	Length (Feet)	Width (Feet)	Total Area (Sq. Feet)
1	Store Room	22.30	9.00	200.70
2	Lab. II (B.Sc. III)	48.80	28.70	1400.56
3	Dark Room	22.30	18.10	403.63
4	Lab. I (B.Sc. I, II)	55.00	28.70	1578.50
5	Workshop & Instrument	31.10	19.70	612.67
6	Staff Room (Teaching)	28.90	19.70	569.33
7	Porch	128.90	8.10	1044.09
8	Porch	13.50	11.00	148.50
9	Research Lab.	28.80	19.70	567.36
10	Staff Toilet	18.30	7.90	144.57
11	Students Toilet	18.30	7.90	144.57

List of Equipment available in the department:

List of Equipment purchased in last six years

SR NO	ITEM	QTY.	DATE OF PURCHASE			PURCHASE COST
			DD	MM	YY	
	2022-23					
1	e/m. Helical Method Besto 2030	1	10	1	23	36048
2	Digital Multimeter	2	10	1	23	3870

3	Hydrogen Discharge Tube	2	10	1	23	1800
4	Stop Clock	2	10	1	23	900
5	Vernier Calliper 8"	4	10	1	23	2408
6	Micrometer Screw Guage 25 x 1/100 mm	6	10	1	23	2610
7	Double Image Prism	2	10	1	23	13400
8	Six position Vernier Microscope	2	10	1	23	23240
	Total					84276
	2021-22					
1	e/m. Thomson Method	1	27	12	21	26650
2	Function Generator 10 MHz with Frequency Counter Scientech 4061	1	2	2	22	14986
3	Moulded Chair Model 2146	6	26	2	22	5010
4	Digital Multimeter with Temp Masument	6	9	3	22	10590
5	Glass Door Almirah	5	24	3	22	46000
6	Pin up board with shutter	2	26	3	22	3872
7	Office Table	5	30	3	22	28615
8	Visitor Chair	5	30	3	22	11800
	Total					147523
	2020-21					
1	Function Generator 10 MHz with Frequency Counter Scientech 4061	1	10	3	21	12626
2	e/m Thomson Method Cat. No. 2028	1	10	3	21	24662
3	Stop Clock	2	10	3	21	1652
4	Intermediate Travelling Microscope	1	10	3	21	10620
	Total					49560

	2019-20					
1	Round Micrometer Slight for Telescope	4	14	11	19	3920
2	Double refracting Quartz prism	2	14	11	19	10410
3	Torsional Pendulum Disc with Clamp	2	14	11	19	4200
4	Audio Oscillators	2	14	11	19	11300
5	Hydrogen Discharge Tube	4	14	11	19	1600
6	Multimeter	2	14	11	19	2550
7	Stop Clock Besto 26	2	1	12	19	1392
8	Mercury Vapour lamp	1	1	12	19	550
9	Hartley oscillator Besto make 2102	1	1	12	19	2640
10	Vernier Calliper 8"	1	1	12	19	1850
11	UPS	1	15	1	20	
	Total					40412
	2018-19					
1	e/m Thomson Method Cat. No. 2028	1	1	12	18	18750
2	Modulus of Rigidity by dynamic method Besto	2	1	12	18	2500
3	Compound Pendulum Bar pendulum Irom	2	1	12	18	1282
4	J by callenders and berners method	2	1	12	18	7180
5	Transformers for callenders	2	1	12	18	5570
6	Stop Clock	4	11	2	19	2612
7	IC regulated power supply 0.15 V Lamp Dico	1				3954
8	Micrometer Screw Guage 25 x 1/100 mm	6				1506
9	Vernier Calliper 8"	6				516
	Total					43870
	2017-18					

1	Low Distortion Audio Generator	1	26	12	17	8980
2	Digital stop watch	2	26	12	17	1200
3	Digital Photoelectric Colorimeter	1	10	2	18	10480
4	Solar Cell Apparatus	1	10	2	18	4200
5	Newtons Ring App.	1	27	2	18	7025
6	e/m by Helical method	1	27	2	18	21825
	Total					53710
						419351

Total List of Equipment Maintained in the Laboratory:

SR NO	ITEM	CONFIGURATION / DESCRIPTION	QTY.	DATE OF PURCHASE			PURCHASE COST
				DD	MM	YY	
1	LCR BRIDGE	Model no. PLCR-8A	1	15	12	1986	5936
2	FUNCTION GENERATOR	Func. Generator 1012 Systronics	1	28	12	1987	3862
3	DIGITAL MULTIMETER	Digital multimeter Phillips model PP 9006X	1	27	1	1987	6249
4	ANALOGUE MULTIMETER	Analogue multimeter Phillips PM 2502	2	1	7	1987	4908
5	LCR BRIDGE	Model no. PLCR-8B	1	30	7	1987	7208
6	MICROPROCESSOR KIT	Microprocessor kit base in (Intel spectrum 85) with power supply	1	23	3	1987	5936
7	MICROPROCESSOR KIT	Microprocessor kit LC 85 spectrum with power supply	2	27	3	1987	6000
8	MILLIAMMETER	Meco meter milliammeter type MR 65A 0-10MA, 0-25MA	10	12	1	1987	1119
9	ANALOGUE MULTIMETER	Analogue multimeter Simpson	1	30	11	1988	4000
10	AC MILLIVOLTMETER	Model Systronics	2	13	1	1988	5252
11	AC MICRO-VOLTMETER	Make Systronics	1	13	1	1988	3538

12	MICROPROCESS-OR KIT	Microprocessor kit LC 85 spectrum with power supply	2	10	12	1988	6772
13	BREAD BOARD SPECTRUM	Bread board spectrum SDK 7932	1	10	12	1988	2822
14	DIGITAL IC TESTER	Digital ic tester with accessory box	1	24	1	1988	4120
15	STABILIZER	Stabilizer single phase	1	11	7	1988	1450
16	DIGITAL MULTIMETER	Meco digital 3/2 multimeter Auto ranging Type no 9A	2	8	10	1989	2420
17	HEAD PHONE	Hands free telephone unit	1	13	6	1989	950
18	STABILIZER	krykard make servo controlled voiltage stabilizer 3KVA single phase 50Hz	1	4	12	1989	6820
19	OSCILLOSCOPE	oscilloscope (Systronics dual trace 515 D	1	26	3	1990	11330
20	OSCILLOSCOPE	Phillips make 15MHz oscilloscope model 3206	1	26	3	1990	11930
21	DIGITAL MULTIMETER	Digital multimeter	2	24	3	1990	10511
22	MICROPROCESS-OR KIT	Microprocessor kit LC 85 spectrum with power supply plus spectrum 85 LC + octroi	2	13	10	1990	8221
23	ALKON SUPER STORAGE SYSTEM	Alkkon super system	10	23	3	1990	2252
24	ALKON SUPER STORAGE SYSTEM	Utility contouners	132	23	3	1990	970
25	DYNALOG MICRO SYSTEM	Dynalog micro system make education trainer kit model Microfriend 14	1	19	9	1990	2475
26	FUNCTION GENERATOR	func. Generator 1013 Systronics	1	30	12	1991	5820
27	RS- MULTIMETER	RS Multimeter 260-6M	3	21	1	1991	6087
28	FREQUENCY COUNTER	Systronics make with instruction mannual	1	14	2	1991	4560
29	MICROAMMETER	DC Microammeter simpson 2 1/2 100 MA	1	11	11	1991	380

30	FUNCTION GENERATOR	Low distortion R.C. Oscillator type 1001	2	10	4	1992	6568
31	DIGITAL MULTIMETER	Digital multimeter Mecco 9A	1	2	9	1992	1500
32	RS- MULTIMETER	Analogue multimeter Simpson 260 -6M	1	9	2	1992	2087
33	VOLT METER	Simpson 21/2" 0-10V	2	1	9	1992	741
34	MICROAMMETER	0-500 micro amp	1	1	9	1992	380
35	FUNCTION GENERATOR	func. Generator 1013 Systronics	2	23	11	1993	12050
36	DIGITAL MULTIMETER	Digital multimeter Mecco 9A	2	11	3	1993	3590
37	VOLT METER	DC MR 65A 0-5V	3	24	1	1994	966
38	VOLT METER	DC MR 65A 0-10	3	24	1	1994	966
39	MICROAMMETER	MR-65A Meco 0-100 micro ammeter	1	24	1	1994	391
40	MILLIAMMETER	Milliammeter DC MR-65A Meco 0-10MA, 0-30MA, 0-100MA	6	24	1	1994	1932
41	RS- MULTIMETER	Simpson make Analogue meter Type 260-m	2	30	3	1995	6010
42	MULTIMETER ANALOGUE	Multimeter Model 260-6M	1	3	10	1998	4000
43	MULTIMETER ANALOGUE	Analogue multimeter simpson	1	30	11	1998	4000
44	MULTIMETER ANALOGUE	Analogue multimeter Simpson	2	29	11	1999	8000
45	OSCILLOSCOPE	Scientech make 281 oscilloscope 7008260	1	26	9	2000	19300
46	DIGITAL MULTIMETER	Digital multimeter Mecco 9A	3	15	9	2001	6960
47	DIGITAL MULTIMETER	Digital multimeter Meco 9A	3	15	9	2001	6960
48	DIGITAL MULTIMETER	Digital multimeter Mecco 9A	2	12	10	2002	4500
49	DIGITAL MULTIMETER	Digital multimeter Meco 9A	2	12	10	2002	4500
50	VOLT METER	Voltmeter 0-5V make meco	2	11	12	2002	798
51	VOLT METER	Voltmeter 0-10V make meco	2	11	12	2002	798

52	MILLIAMMETER	0-10 MA Make meco	2	11	12	2002	798
53	MILLIAMMETER	0-25 MA Make meco	2	11	12	2002	798
54	LCR BRIDGE	Systronics make Digital LCR Meter Model No 925	1	22	3	2002	10270
55	RSISTANCE BOX	Resistance Box (1to 5000ohms)	4	10	3	2002	2840
56	MULTIMETER ANALOGUE	Analogue multimeter simpson 260-M	1	27	1	2003	4400
57	ADC/DAC CARD	Dynalog make enhanced multifunction card with AD/DA DIO, Time/counter PCL-812,1696	1	25	2	2003	11650
58	ICIM PC/XT	Celeron 1.7GHz P4 mother board having on board graphics and sound facillity 256 DD RAM, 40GB HDD, 1.44 MB FDD,52XCD Rom Drive,Stereospeakers Multimedia, Mouse, Keyboard, 15" SVGA LG Color monitor PCTEL modem card	1	29	8	2003	24000
59	DIGITAL MULTIMETER	3-3/4 Digit 4000 count auto ranging digital multimeter Protek model 506	1	28	9	2004	6950
60	DIGITAL MULTIMETER	3-3/4 Digit 4000 count auto ranging digital multimeter Protek model 506	1	28	9	2004	6950
61	OSCILLOSCOPE	100 MHz(250MS/S RTS & 50GS/S ETS), Digital storage oscilloscope color LCD with built in FET function and USB interface and software, model Caddo 9100 RC plus VAT 4%	1	21	10	2005	59809
62	Printer Laserjet	HP 1020 Plus	1	11	8	2007	6750

63	Function Generator	Sciencetech make 2 MHz Microcontroller Based function pulse Generator ST 4061	1	9	10	2007	7567
64	Monitor	19" TFT Samsung	1	12	9	2008	9850
65	MICROPROCESSOR KIT	Sciencetech M85-01	3	17	12	2009	15147
66	Scanner	HP Scanjet G2410	1	11	12	2010	4250
67	Hard Disk	320 GB SATA (Samsung)	1	6	2	1010	2470
68	Hard Disk Ext.	250 GB (Transcend)	1	6	2	1010	3250
69	RAM	2 GB (Transcend)	1	5	2	1010	2225
70	MICROPROCESSOR KIT	Sciencetech M85-01	2	28	12	2011	10143
71	RAM	2 GB DDR-2	2	19	12	2011	2900
72	TINA V9 Edu. Software	TINA	1	29	8	2011	36225
73	Computer System	Core-i5, M/B ASUS/P8H61, RAM 2 GB DDR-3,(Kingston) HDD - 500 GB (WD) DVD RW (Sony) Keyboard, Optical Mouse ATX Cabinet 18.5" LCD Monitor (Acer)	12	14	9	2012	326400
74	Printer	DMP Epson LX 300 +II (DotMatrics	1	14	9	2012	7550
75	Printer	Epson-100 Inkjet	1	14	9	2012	7100
76	Dual Trace C.R.O	30 MHz Model 803	1	29	3	2013	15396
77	Almirah	78"x36"x18" 0/22 Guage	2	29	3	2013	11926
78	Function Disc Genrator	10 MHz Sciencetech 4064	3	29	3	2013	28114
79	Micro ammetier	MO 65	12	29	3	2013	6277

80	8085 Microprocessor Kit	NVIS 5585	5	29	3	2013	50426
81	8086 Microprocessor Kit	NVIS 5586	2	29	3	2013	23052
82	Mill ammeter	M0 65 WITH METER DESK 0.1 mA, 0.5 mA, 0.10 mA, 0.20 mA, 0.50 mA, 0.100 mA	30	29	3	2013	14681
83	Digital Multimeter	DM 97	5	29	3	2013	6724
84	Voltmeter	M0 65 WITH METER DESK 0.1 V, 10 mA, 0.20 V, 0.25 V	20	29	3	2013	9787
85	Revolving Chair	Class ic with arms with push back MS back	3	16	3	2013	7500
86	EDISON Edu. Software	TEN USER 4-1	1	29	10	2012	48914
87	Thermocouple	B.Sc. Practical	1	29	3	2013	750
88	Dimmer state	8 AMP 240 VOLTS AGRONIC	1	29	3	2013	4275
89	Digital Wattmeter	AGRONIC 34A-22	1	29	3	2013	1941
90	Stabilizer (Servo)	1 KVA AGRONIC	1	29	3	2013	3651
91	Rheostat	5 AMP / 14 OHM, 4.2 AMP / 25 OHM, 3.3 AMP / 34 OHM	6	29	3	2013	9788
92	Digital Lab.	SCIENTECH 2611	4	29	3	2013	30352
93	Poser Supply Multiple	4 OUTPUT	1	29	3	2013	8164
94	FPGA VLSI Dev.	Programming System	1	29	3	2013	13927
95	Microcontroller Dev. Board	Scienteck with Programmer	2	29	3	2013	20171
96	Transister Char. Trainer	NVIS 6202	1	29	3	2013	6051
97	Decade Resistance Box	NVIS 703	1	29	3	2013	2689
98	Decade Capacitance Box	NVIS 707	1	29	3	2013	2738
99	Hot Air Oven	LAAB TECH Temp 5 C above to 250 C	1	28	3	2013	21375

100	RAM	2 GB/DDR/3 A Data	1	7	8	2013	1450
101	Printer	HP Laserjet 1020 Plus	1	14	10	2013	6950
102	Printer	HP Laserjet PRO CP 1025	1	14	10	2013	14050
103	Portable Hard Disk	500 GB	1	21	11	2013	3950
104	PID Controller with Sensor		1	23	11	2013	5738
105	Fire Extingusher		1	20	12	2013	
106	Speaker	Iball Tarang 2.1, USB with remote	1	30	1	2014	2550
107	PID Temp Controller		1	29	9	2014	2363
108	Dev. Card	Ardino Mega	1	29	9	2014	4669
109	Dimmer state	Argo	1	29	9	2014	8437
110	Two probe method for resistive measurement Insulator	Standard Make	1	30	9	2014	72562
111	8051 Microcontroller kit (NVIS 5001)	Standard Make	7	22	12	2014	83316
112	Input Interface Module (MC-01)	Standard Make	2	22	12	2014	7935
113	ADC/DAC Module (MC-02)	Standard Make	2	22	12	2014	9749
114	Display Module (MC-04)	Standard Make	2	22	12	2014	7368
115	Motor Drive Module (MC-05)	Standard Make	2	22	12	2014	11902
116	Real Time Clock Module (MC-08)	Standard Make	2	22	12	2014	7935
117	Multi-interface Module (MC-11)	Standard Make	2	22	12	2014	7935
118	I ² C Module (ADC/DAC Module) (MC-13)	Standard Make	2	22	12	2014	7935
119	Data communication Technique (Sci 5001)	Standard Make	1	22	12	2014	35707

120	DSB/SSB AM Transmitter (Sci-2201)	Standard Make	1	22	12	2014	10769
121	DSB/SSB AM Receiver (Sci-2202)	Standard Make	1	22	12	2014	11789
122	Data formation and carrier modulation Transmitter (Sci-2156)	Standard Make	1	22	12	2014	16777
123	Laser Fiber Optics (Sci.-2506)	Standard Make	1	22	12	2014	27205
124	Computer System	Core-i5 / i3, M/B ASUS/P8H61, RAM 2 GB DDR-3,(Kingston) HDD - 500 GB (WD) DVD RW (Sony) Keyboard, Optical Mouse ATX Cabinet 18.5" LCD Monitor (Acer)	5	23	1	2015	
125	Air Conditioner	Standard Make	1	13	1	2015	
126	Drill Machine	Standard Make	1	25	3	2015	2200
127	Scanner	HP Scanjet /200	2	4	2	2015	7450
128	UPS	(i-Ball 600 VA)	1	11	9	2015	1675
129	AET wire impedance measurement	Standard Make	1	30	3	2016	21319
130	CRO (Oscilloscope)	Scientech Model 801, 30 MHz with colour LCD	2	26	12	2016	43950
131	Digital Multimeter	Meco Make Model 603	4	26	12	2016	5940
		Total					1611431

ICT facilities available in the department: DLP with Wireless Access Points

Library facilities: Department has the library facility for staffs and students with a wide range of 334 book on various topics in physics.

Student Support and Progression:

Details of student support services (counseling, mentoring, etc.) available in the department;

- Guidance for higher Education
- Guidance for competitive National exams like JAM, NAEST and NGPE
- Mentoring and knowledge sharing through LMS
- Fabrication Workshop
- Invited talks
- Guidance for Case studies and Projects
- Research opportunities and internships

Astro Club:

The Astro Club is an interdisciplinary hobby club started in 2017. It takes care of sky observations, regular events from the world of astronomy. It has a separate students' cell that used to conduct regular seminars, workshops, guest lecturers etc. Students also conduct some skill oriented workshops to fabricate telescopes under the expert guidance.

Faculty Incharge: Dr. Sudhir Tiple

Details of student achievements (academic, research, co-curricular, etc.)

Placement record of the department in last six years:

Name of the Student (Complete Name)	Graduation on Completion Year	Group	Present Status	Name of the Employer and designation (if employed)
Payal Nivruttee Titare	2017-18	PEM	Employed	Electronics Engineer
Sanket Sunil Urkande	2017-18	PEM	Employed	Brose India Automotive System Pvt. Ltd.
Amruta Nandlal Yadao	2017-18	PCM	Employed	Asst. Prof., Bajaj Institute of Technology, Wardha
Manisha s. Timande	2017-18	PEM	Employed	Assistant Teacher
Ashwin Sanjay Deotare	2018-19	PCM	Employed	Teleperformance (Data analyst)

Mangesh Umeshrao Ingole	2018-19	PCM	Employed	Teeperformance (Data analyst)
Rajeshree Petkar	2018-19	PCM	Employed	Alphonso School
Dipanwita Mitra	2018-19	PEM	Employed	HCL
Aboli V. Deshmukh	2018-19	PCsM	Employed	Infosys Ltd
Wasim Ayub Sheikh	2019-20	PEM	Employed	Yethi Consulting Pvt Ltd, Bangalore
Radha Vinchurkar	2019-20	PCsM	Employed	Tata Consultancy Services
Samiksha Tamboli	2019-20	PCsM	Employed	Software Engineer
Aniket Talewar	2019-20	PCM	Employed	SAP Consultant
Ashwini Gajanan Nasare	2019-20	PCM	Employed	Bajaj Science Center
Kirti Arunkumar Mishra	2019-20	PEM	Employed	TCS
Purva Marwadkar	2020-21	PCsM	Employed	Tata Consultancy Services
Rushikesh Marotrao Sawarkar	2020-21	PEM	Employed	TATA Consultancy services
Sourav Bhaskar Sarkar	2020-21	PCsM	Employed	State Bank of India (SBI)
Abhilasha Rajesh Bhumber	2020-21	PCM	Employed	Infosys limited
Alok Arunkumar Mishra	2020-21	PCsM	Employed	Infosys Limited
Leha Madhukar Sorambe	2021-22	PCsM	Employed	TCS

Prachi Rajendra Joshi	2019-20	PCM	Employed	Asst. Prof. Datta Meghe Institute of higher education and research.
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Internships:

Urvi Gupta – Center for Materials for Electronics Technology (C-MET)
Pune (2019-20)

Aniket Nagrale – Department of Electronic Instrumentation, University of
Pune (2019-20).

Nancy Jalan – Inspire Fellow, Wadiya College, Pune. (2019-20)

Kartik Gokhe – Indian National Science Academy (INSA-2019), New
Delhi.

Shweta Dahake, Bajaj Science Education Center, Wardha (2018-19)

Mrunal Gandole, Bajaj Science Education Center, Wardha (2019-20)

Students' Achievements:

Rank Holders in UG programme in Physics:

			
Mr. Ashwin Deotare 2018-2019 University Silver Medal in Physics in (107 th RTMNU Convocation on 18 th January 2020)	Miss. Urvi Gupta 2019-20 Gold Medal in Physics (1 st Convocation of the institute on 19 th Nov 2022)	Mrunal Gandole 2020-21 Gold Medal in Physics (1 st Convocation of the institute on 19 th Nov 2022)	Miss. Monal Nanore 2021-22 (Physics Topper)

← TOPPERS AND GOLD MEDALISTS →

Special Mention for National Competitive Examination in Physics:

RANKS IN INTERCOLLEGIATE VUPTA SEMINAR COMPETITION



Research and Consultancy:

Consultancy services for X-ray diffraction techniques are provided through the central instrumentation center (CIC).



Session	XRD		
	No. of Beneficiaries	No. of Samples	Revenue generated in Rs.
2017-18	22	82	20600
2018-19	41	171	42750
2019-20	26	189	47250
2020-21	9	89	22250
2021-22	22	108	27000
2022-23	111	431	115600
Total	231	1070	275450

Facility Co-ordinators: Dr. G.V. Lakhotiya, Dr. M.M. Yerpude

PG students and research scholars are also trained to use the facility through training sessions and workshops.

Details of students Research Projects undertaken by the department

B.SC. III (SEM. VI) (2022-23)

S.N.	Batch	Roll No.	Name of student	Title of Projects Assigned (Topic)	Guided By
1	F3	2061104 2061108	Prabhat Sanjay Mahajan Jay Pundalik Pokale	Half Adder and full Adder	Dr. M.M. Yerpude
2	F3	2061112 2061114	Viveka S. Parve Divyani V. Chatarkar	Half Adder and full Adder	Dr. M.M. Yerpude
3	F3	2061116 2061113	Kabir D. Basale Vidit Yende	Half Adder and full Adder	Dr. M.M. Yerpude
4	F3	2061103 2061115	Samiksha C. Andeo Dipali T.Deshewar	Half Adder and full Adder	Dr. S.H. Bagade
5	F3	2061102 2061117 2061111	Bhavna P. Gandole Janhvi Talhan Tanisha Belkhede	Dual and variable power supply.	Dr. S.H. Bagade
6	F6		1. Jayraj Singh Khandiya 2. Purva Muley 3. Ashish Singh 4. Kaushik Kotambkar 5. Ashlesha Tambakhe 6. Tanmay Mohite 7. Khushal Nagose 8. Rutik Dabane 9. Aniket Tuthe 10. Ranjit Rathod	"Fabrication of Refracting Telescope"	Dr. S.R. Tiple
7	F6	2061266 2061255 2061258	Dnanesh Mahajan Nishil Dhankar Shivani Lonare	Green Synthesis and Characterization of ZnO Nanoparticles	Dr. G.V. Lakhotiya

B.Sc. III (SEM. VI) (2021-22)

S.N.	Batch	Roll No.	Name of the student	Title of Projects Assigned (Topic)	Guided By
1	F3	1951101	MAHESH KUMBHARE	"Determination Of Self Induction (L) And Mutual Inductance (M) Of A Power Transformer By Bridge Rectifier Method"	Dr. S.R. Tiple
2	F3	1951102	NUPUR GANESHRAO PARATE		
3	F3	1951103	SHWETA ANKUSHRAO PALEKAR		
4	F3	1951104	PRANITA NAMDEVRAO HINGE		
5	F3	1951107	TEJAS RAMESH CHAUDHARI	"Study Of Characteristics Of Microphones"	Dr. M.M. Yerpude
6	F3	1951108	ARPITA SANJAYRAO SURKAR		
7	F3	1951111	ANIKET MAHENDRA MANDAWGADE		
8	F3	1951112	DEEPALI KOTESHWAR KOLHE		
9	F6	1951251	TAUSIF ISHAKH SHEIKH	"Study Of Output Impedance Of Oscillator And Input And Output Impedance Of Single Stage CE Voltage Amplifier With Frequencies"	Dr. M.M. Yerpude
10	F6	1951252	SATYAM RAJENDRA MUKATI		
11	F6	1951253	GAURAV SATISH BAROD		
12	F6	1951255	TEJAS SUNILRAO DHAPULKAR		
13	F6	1951256	VISHWASANDESH RAJU DHAWNE		
14	F6	1951257	MONAL PRAKASH NANORE		
15	F6	1951259	GAURI SUSHIL AHIR	"Study Of Hall Effect"	Prof. R.G. Jadhao
16	F6	1951260	SARWANG SANJAYRAO DHOLE		
17	F6	1951262	VAIBHAV SANJAY JAISWAL		
18	F6	1951263	AFRIN ANJUM ABDUL AJIJ SHEIKH		
19	F6	1951264	SACHIN SANJAY DUBE		
20	F6	1951265	RITIKA BHARAT TOLIWAL		
21	F6	1951266	VAISHNAVI PRABHAKAR TEKADE	"Determination Of Dielectric Constant Of Different Materials"	Dr. S.H. Bagade
22	F6	1951268	NAVINYA SHENDE		
23	F6	1951269	SHRUTIKA VIKAS WANKHEDE		

24	F6	1951271	SAURABH GOPALRAO SATPUTE		
B.Sc. III (SEM. VI) (2019-20)					
S.N.	Batch	Roll No.	Name of the student	Title of Projects Assigned (Topic)	Guided By
1	F3	1751101	KIRTI ARUNKUMAR MISHRA	"Study of Thermal Conductivity of Different Soils"	Prof. R.G. Jadhao
2	F3	1751102	PRATIKSHA RAVINDRA THAMKE		
3	F3	1751103	SANJIWANI KESHAO WADHAVE		
4	F3	1751105	ANJALI NARENDRA JAMANE		
5	F6	1751251	URVI MUKESH GUPTA	"Determination of Dielectric constant of Different Materials"	Dr. M.M. Yerpude
6	F6	1751252	GAURI NARENDRA KSHIRSAGAR		
7	F6	1751253	SHIVAM RAJENDRA MUKATI		
8	F6	1751255	KAUSTUBH SUNIL RAUT		
9	F6	1751256	RUTUJA MAHADEORAO LOKHANDE	"Study of Hall Effect"	Dr. S.R. Tiple
10	F6	1751257	ASHWINI GAJANAN NASARE		
11	F6	1751258	URVASHI HANSRAJ PANTAWANE		
12	F6	1751259	HANSARAJ UTTAM GAWANDE		
13	F6	1751260	SHUBHAM SURESHRAO MANDAOKAR		
14	F6	1751261	SWETA RADHESHAM JAISWAL		
15	F6	1751262	KARTIK KAMLESHKUMAR VERMA	"Study of Characteristics of Microphones"	Dr. S.H. Bagade
16	F6	1751263	AASMIN SARFUDDIN ANSARI		
17	F6	1751264	SOMAL VINODRAO SUKALKAR		
18	F6	1751265	TUSHAR BANDUJI KALE		



Research Publications of Faculties (Last Six Years):

S.N.	Research Paper Title	Journal
1	High frequency acoustic attenuation in pure semiconductors : A comparative study Sanjay H. Bagade	AIP Conference Proceedings 2021
2	Temperature and frequency dependence of acoustic attenuation in pure semiconductors. Sanjay H. Bagade	Journal of Pure and Applied Ultrasonics 2020
3	Sensitization of Tb^{3+} and Dy^{3+} emission in $Li_4Ca(Bo_3)_2$ via energy transfer from Ce^{3+} and study of energy transfer mechanism. Mangesh M. Yerpude Govind B. Nair, S.J. Dhoble, S.H. Bagade, H.C.Swart	Optik Journal 2020
4	Thermoluminescence glow curve analysis of RE doped $LiMgBO_3$ phosphor using GCCD function. M.M. Yerpude and S.J. Dhoble	AIP Conference Proceedings 2019
5	Luminescence study of $LiMgbo_3$: Dy for Y-ray and carbon ion beam exposure. Mangsh M. Yerpude, Vibha Chopra, N.S. Dhoble, R.M. Kadam, Aleksander R. Krupski, S.J. Dhoble.	Wiley Luminescence 2019
6	Enhanced performance of PTB7 – Th : PCBM based active layers in ternary organic solar cells. Govinda Lakhotiya, Namdeo Belsare, Sudhir Arbuj, Bharat Kale, and Abhimanyu Rana.	RSC Advances 2019
7	An Intelligent Controller for Greenhouse Temperature Control Using Fuzzy Logic. P.A. Saudagar, D.S. Dhote, G.V. Lakhotiya	Research Journey 2019
8	Green light emission through energy transfer from Ce^{3+} to Tb^{3+} ions in the $Li_2So_4-Al_2(SO_4)_3$ system.	Wiley Luminescence 2019
9	Cu_2S nano crystals incorporated highly efficient non-fullerene ternary organic solar cells. Govinda Lakhotiya, Namdeo Belsare, Abhimanyu Rana, Vinay Gupta	Current Applied Physics 2018
9	Microwave Assisted Fast Synthesis of CuO Nanoflakes: Catalytic Application in the Synthesis of 1, 4-Dihydropyridine. S.D. Bajaj, P.V. Tekade, G.V. Lakhotiya and P.G. Borkar	ACTA PHYSICA POLONICA 2017
10	Enhanced catalytic activity without the use of an external light source using microwave synthesized CuO nanopetals. Govinda Lakhotiya, Sonal Bajaj, Arpan Kumar Nayak, Debarata Pradhan, Pradip Tekade and Abhimanyu Rana.	BEILSTEIN journal of nanotechnology 2017
11	Antibacterial Activity of copper oxide Nanostructure synthesized by Microwave irradiation. G.V. Lakhotiya, P.V. Tekade, P.A. Saudagar, N.G. Belsare, A.D. Rangari.	AIIRJ 2017

Co-curricular and Extension Activities:

Details of co-curricular and extra-curricular activities undertaken by the department:

	
	
<p>Talk by Dr Nilesh Ugemuge on start up plans on 15th July 2022</p>	

	
<p>Virtual Science Talk on National Science Day Celebration on 28th Feb 2022</p>	


**GANDHI GYAN MANDIR'S
BAJAJ SCIENCE EDUCATION CENTER, WARDHA**
 IN ASSOCIATION WITH
**DEPARTMENT OF PHYSICS
BAJAJ COLLEGE OF SCIENCE, WARDHA**
 INVITES STUDENTS AND TEACHERS
 FOR
32ND WEEKEND SCIENCE TALK
 Topic
Faster, Higher, Stronger: Physics at the Olympics Games

Guest Speaker

 Prof. Arnab Bhattacharya
 Director, HBCSE/TIFR,
 Mumbai
<https://youtube.com/c/BajajScienceCenterWardha>

Host
 Dr. G.V. Lakhotiya
 Honorary Director
 Bajaj Science Education Center, Wardha

Event Schedule
 Sunday, 26th Sept. 2021
 (10:30 a.m. to 11:30 a.m.)
 Youtube Channel

Presided by
 Dr. Sanjay Bagade
 Head, Department of Physics
 Bajaj College of Science, Wardha

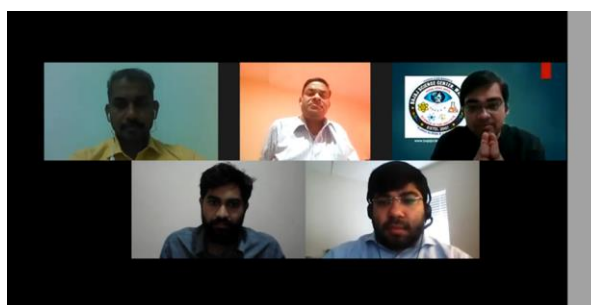
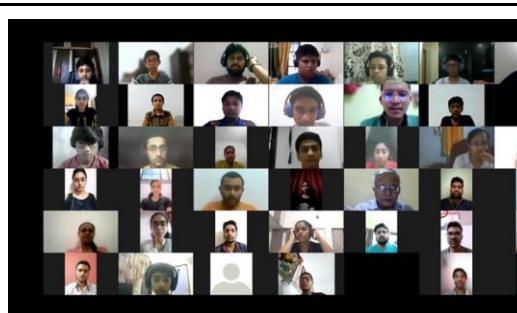

 Who we are: www.bajajsciencecenter.co.in, jbsw.shikshamandal.org

Virtual Science Talk by Prof. Arnab Bhattacharya, Director, HBCSE, TIFR, Mumbai on 26th Sept 2021


**GANDHI GYAN MANDIR'S
BAJAJ SCIENCE CENTER, WARDHA**
 IN ASSOCIATION WITH
SHIKSHA MANDALS
BAJAJ COLLEGE OF SCIENCE
 INVITES STUDENTS AND TEACHERS
 FOR
26th Weekend Science Story
TOPIC: STORY OF PHOTOELECTRIC EFFECT
 100 years of Nobel Prize to Albert Einstein
Guest Speaker
SHRI JITENDRA SINGH
 Scientist & Co-ordinator (Anveshika)
Event Schedule
 Sunday, 23rd May 2021
 (10:30 a.m. to 11:30 a.m.)
 Join Virtually on Youtube or Facebook
 Subscribe the channel for prior notification
<https://www.youtube.com/c/BajajScienceCenterWardha>
<https://www.facebook.com/BSCWARDHA>
Host
 Dr. Govinda Lakhotiya
 Director
 Bajaj Science Center, Wardha
Presided By
 Dr. Om Mahodaya
 Principal
 Bajaj College of Science, Wardha



Virtual Talk on Photoelectric effect by Shri Jitendra Singh on 23rd May 2021



Department of Physics organized workshop on Virtual Laboratory Development from 20 to 31st May 2021



Shiksha Mandal's
Bajaj College of Science,
Wardha
 Central Instrumentation Center (CIC)

One day Virtual Workshop on X-ray Diffraction

What will be covered:
 Basics of X-ray diffraction, live demonstration of powder X-ray diffraction, plotting and analysis of data via full prof suite, Reitveld's refinement

Who can Participate:
 UG (Final Year) and PG students, Research Scholars, Faculty Members, Industry Staffs/Lab. Technicians

Resource Persons:
 Dr. G.V. Lakhotiya (Dept. of Physics, BCS, Wardha),
 Dr. Mangesh Yerpude (Dept. of Physics, BCS, Wardha),
 Dr. Arpan Nayak (Dept. of Physics, VIT, Vellore)

How to Enrol: t.ly/B4KJ

No. of Seats:
50

Registration Fee:
Rs. 100/-

Convener
 Dr. Om Mahodaya,
 Principal

Event Co-ordinator
 Dr. G.V. Lakhotiya,
 Incharge, CIC
lakhotiya.govinda@gmail.com
 +919579194076

Event Date:
 14th July
 11:00 AM
 Zoom Platform





Virtual XRD National workshop on 14th July 2021



GANDHI GYAN MANDIR'S
BAJAJ SCIENCE EDUCATION CENTER, WARDHA
 IN ASSOCIATION WITH
INSTITUTION'S INNOVATION CELL
BAJAJ COLLEGE OF SCIENCE, WARDHA
 INVITES STUDENTS AND TEACHERS
 FOR

29th Weekend Science Talk

Topic

Story of Foldscope (1 \$ Microscope)



Guest Speaker



Jim Cybulski
 Co-inventor, President and CEO
 Foldscope Instruments, California,
 United States

Event Schedule

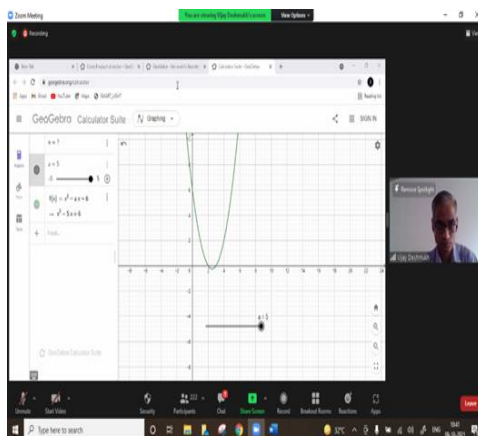
Sunday, 25th July 2021
 (10:30 a.m. to 11:30 a.m.)
 Youtube Channel
<https://youtube.com/c/BajajScienceCenterWardha>

Host
 Dr. G. V. Lakhotiya
 Honorary Director
 Bajaj Science Education Center, Wardha

Presided by
 Dr. Om Mahodaya
 Principal
 Bajaj College of Science, Wardha

Contact: bajajscience.wda@gmail.com, 07152-247024
www.bajajsciencecenter.co.in

Virtual Talk by Dr. Jim Cybulski, Co-inventor, Foldscope on 25th July 2021



Virtual Talk by Dr. Vijay Deshmukh, Asst. Prof., BIT, Wardha on 09th October 2021

Shiksha Mandal, Wardha's
Bajaj College of Science, Wardha
 NAAC Reaccredited 'A' Grade Institution
 An Autonomous Institution Affiliated to The RTM Nagpur University, Nagpur

IIC Impact Lecture Series: Session 2

MoE's INNOVATION CELL (GOVERNMENT OF INDIA) | INSTITUTION'S INNOVATION COUNCIL (Ministry of HRD Initiative)

MoE's Innovation Cell, Institution's Innovation Council (IIC) & Department of Physics, BCS, Wardha
Jointly organizing
 Webinar on
INNOVATION and STARTUP

Date: 5th October, 2021 | Time: 11:00 am to 2:00 pm

Topic: Developing a successful Startup
Mr. Arvind Bhardwaj | **Mr. Anupam Kumar**
 Founders: MiniMines Cleantech Solutions, Nanomatrix Materials and Aristo - Parking & EV Stations

Topic: Emerging Innovations in Nanoelectronics based devices
Dr. Ramakant Sharma
 Post Doctoral Fellow, KAIST University, South Korea

Free Registration
 Registration Link: <https://forms.gle/JtuqzwTTV2vX98e9>

Chairman
 Dr. Om Mahodaya
 Principal,
 BCS, Wardha, MS.

President IIC
 Dr. S. H. Bagade
 Dept. of Physics
 BCS, Wardha, MS.

Co-ordinator
 Dr. M. M. Yerpude
 Dept. of Physics,
 BCS, Wardha, MS.

IIC-Convener
 Dr. (Mrs) N. P. Mohabansi
 Convener IIC
 BCS, Wardha, MS.

Convener
 Dr. S. R. Tiple
 IIC-Startup Coordinator,
 BCS, Wardha, MS.

About the College: <http://bsw.shikshamandal.org> | Contact us: +91 9766499841, iic.bcs@bcswardha.org

Webinar on 05th of October 2021 by Dr. Ramakant Sharma, Alumni BCS, 2007 Batch pass out student



Live Demonstration Workshop on Heat by Mr. Amit Bajpai from Shiksha Sopan, IIT Kanpur on Heat: 20th JANUARY 2020



Project mentoring by Dr. G.V. Lakhotiya of NIUS Programme of HBCSE, TIFR, Mumbai where two students from Orissa and Kerala were mentored for their research projects during (December 2019-January 2020)



Guest lecture in Astro Club by Dr. Amruta Jaodand, University of Amsterdam, Netherland and Judge of scientist panel at NASA, California, USA on 20th December 2019



Astro Club, Department of physics, Foundation Day celebration on 12th August 2018





Ahimsa Rally organized by Astro Club on 2nd October 2017



Cleanliness Drive on 14/10/2017



Astro Club Notice cum Enlightenment Board inaugurated on 07/09/2017



Interaction of students of Astro Club, Department of Physics with Shri. Rahulji Bajaj, chairman, Bajaj Auto, Pune on 22nd Sep 2017



Astro Club Foundation program 12th August 2017

————— "SHANI MAAGE LAGLA" DRAMA AND SKY OBSERVATION AT NSS
CAMP 2018 —————



Shani Mage Lagla Drama and Sky Observations at NSS Camp 2019



Guest Session by Inhouse Faculty Dr. Parvez Saudagar on Applied Acoustics



Astro Club, Department of Physics Organized social awareness by delivering talk and sky observations program for villagers by Dr. S. R. Tiple

SKY OBSERVATION AND LECTURE AT BAJAJ SCIENCE CENTRE,
WARDHA



Guest lecture by Dr. S. R. Tiple Department of Physics at Bajaj Science Centre followed by Sky observations

Invited Talks/Guest Lectures

GUEST LECTURES

Dr. M. Y. Apte,
Astronomer and Retd. Prof., SFS College
12th August 2017

Dr. Sanjay Wagh
Former Director of CIRI, Nagpur
12th Aug 2018

Dr. Amruta Jaodand
Researcher, Caltech, USA
20th Dec 2019

Mr. Suresh Parekh
Cofounder, Infinoscope (magazine)
20-31 May 2021

Mr. Harshal Sanghvi
Research Scholar, Florida Atlantic
University, USA
20-31 May 2021

Dr. Ramakant Sharma
Post Doctoral Fellow,
KAIST University, South Korea
5th October 2021

Dr. Vijay Deshmukh
Assistant Professor,
Department of Physics,
Bajaj Institute of Technology, Wardha
9th October 2021
10-11 February 2023

Prof. Smita Acharya
Professor, Department of Physics,
RTM Nagpur University, Nagpur
19th April 2023

Invited Talks by the faculties

Faculty Name	Topic	Title of the Event	Place	Level
	Nanosense	Recent trends in Nanotechnology and its applications	SSSKR Innani Mahavidyalaya, Karanja-Lad	National
	X-Ray Diffraction basics	One day virtual workshop on XRD	Bajaj College of Science	National
	Nanocrystals in organic solar cells	Global Virtual Summit on Materials science and engineering 2020	National Cheng Kung University Taiwan	International
	Plenty of Space at the bottom	NIUS 17.1	HBCSE, TIFR, MUMBAI	National
	Search Before Research	Fergusson College Workshop on Technical Writing	Fergusson College Pune	Intercollegiate
	Innovative Experiments in Physics	NIUS 17.1	HBCSE, TIFR, MUMBAI	National

Dr. G. V. Lakhotiya	Training of Online Webinar Software	Faculty Training Programme	CMET Pune	National
	“Nanoparticle Mediated Seed Priming Improves Seed Germination in Leguminous Crops”	International Conference on Multifunctional Electronic Materials and Processing (MEMP-	CMET Pune	National
	Next Generation Laboratory	Physics @ World: Innovative and contemporary practices	Research Foundation of India, Indore	International
	Projects for UG	NIUS 18.1	NIUS, HBCSE, Mumbai	National
	Optical Physics and its Application	Knowledge Sharing Session	Anand Niketan College, Warora	National
Dr. S.R. Tiple	How Easy is Terrestrial and Extra-Terrestrial Science		C. J. Patel College of Art, Science and Commerce, Tiroda, Gondia Mohasinbhai Zaweri College, Desaiganj, Gadchiroli	National
		National Science Day Lecture Series	Loknete Gopinath Munde Art, Commerce and Science College, Mandangadh, Ratnagiri	College
	How Easy is Terrestrial and Extra-Terrestrial Science	VUPTA Seminar Competition	Shivprasad Sadanand Jaiswal College, Arjuni-Morgaon	State Level

Dr. M.M. Yerpude	Two Days Astronomy and Telescope Making Workshop	Astronomy Lecture Series	Bajaj Science Centre, Wardha	College
	Zero Shadow Day	Astronomy Lecture Series	Bajaj Science Centre, Wardha	College
	Training Session on Rietveld Refinement	5th Online Knowledge Sharing Session	Anand Niketan College, Warora	National

Collaborative Activities: Intercollegiate Fergusson College, Pune

Event 1:

Collaborated for 30 hours virtual certificate course (Nanosense) :
2021-22

No of Students benefitted: 32



Event 2:

Organized one National Photo Essay
Competition in association with IAPT: 2022-23
No. of Entries: 59



Collaborative Activities Inhouse Institutions Innovation Council (IIC)



- Entrepreneurship Skill, Attitude and Behaviour
- Motivational Session by Successful Innovators
- Start-up Plans: Legal and Ethical Steps
- National Science Day Talk
- Developing Successful Startup
- Emerging Innovations in Nanoelectronics Devices
- Future of Work: Industry 4.0, Innovations & 21st Century Skills
- Innovations in Science
- Raman Technique in Science and Technology



Collaborative Activities: Sister Institution

Bajaj Science Education Center, Wardha

- Academic mentoring through the faculty of the department
- Providing Guidance and mentoring Junior Science Olympiad Programme
- Scheduling Webinars (Weekend Science Stories) to promote science education
- Organizing Quiz
- Providing opportunities for internships
- Organizing science demonstration shows



Best Practices:

Department has provided support to the students through three best practices as follows:

Astro Club:

ASTRO CLUB ACTIVITIES

Designed and fabricated telescope essentials for sky observations.

Involved society for sky observations.

Delivered introductory and expert lectures on astronomy.

Sensitized villagers for superstitions

Facilitated young minds at Bajaj Science Education center for astronomy related discussions

Motivated students to apply for INSA programs

1. INTRODUCTION

Astro Club is the club for astronomy lovers, who are interested to know what's happening in the universe which is visible to known source of observatory. It is started by Bajaj College of Science in the year 2017 and academic session of 2017-18. The objective is to inspire students, alumnae, staff and others to know more about the world around the earth. Also it is an effort to make social awareness about the facts and finding of the astronomy.

2. PROCEDURE OF ENROLLMENT

Students, alumnae, staff of Bajaj College of Science, irrespective of the department (Physical and Biological Sciences) she/he belongs to, are eligible to join Astro Club. The life time membership fee is as follow.

Categories	Amount
Students	150/-
Alumnae	1000/-
Staff	1500/-

TOTAL NUMBER OF STUDENTS ENROLLED

For the year 2017-18 students of all three years registered at once and from 2018-19 the first year students were enrolled

TOTAL STUDENTS = 323

Student enrolled in 2017-18 = 198

Student enrolled in 2018-19 = 65

Student enrolled in 2019-20 = 32

Student enrolled in 2020-21 = 28

CERTIFICATES

List of Activities are as follow.

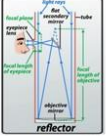
1. To design and fabricate the required Apparatus and Instruments essentials for sky observations.
2. To develop atmosphere for proper sky observations.
3. To have introductory and expert lectures on astronomy.
4. To have sky observations from in campus and off campus sites.
5. To make students and other peoples aware about upcoming special astronomical events during the session.
6. To send students for workshop organized by astronomical institute such as IUCAA, IIA, IISc, NCRA-TIFR, PRL, RRI, TIFR, etc.
7. To study the brief knowledge about current situations in universe and its facts and misunderstanding about astronomy by taking various competitions.


Shiksha Mandal's
Bajaj College of Science, Wardha

ASTRO CLUB

Telescope Making Workshop

DORSONIAN TELESCOPE





VISIT US at:
<https://astroclub.co.in>
E-mail: astroclubjbs@gmail.com

The 8" diameter telescope was fabricated indigenously by first year Astro club members Aniket Nagrale, Kartik Gokhe, Shubham Mukhati, Urvi Gupta, Shweta Dahake, Roshan Chute, Payal Chafle, Chinmay Wagharkar and Abhijeet Chatur.

ASTRO CLUB PRESENTS

TELESCOPE MAKING WORKSHOP

A STUDENT DOCUMENTARY



REPORT

SOCIAL OUTREACH EVENTS (17)

Eradication of Social Astronomical Superstition Among Villages (04)



EVERYTHING STARTS WITH US

KHAGOL SHASTRA: GYAN AANI AGYAN

SHANI MAAGE LAGLA" DRAMA

SOCIAL OUTREACH EVENTS (18)

Creating Awareness about Astronomical Events (05)



EDUCATIONAL TOUR (02)

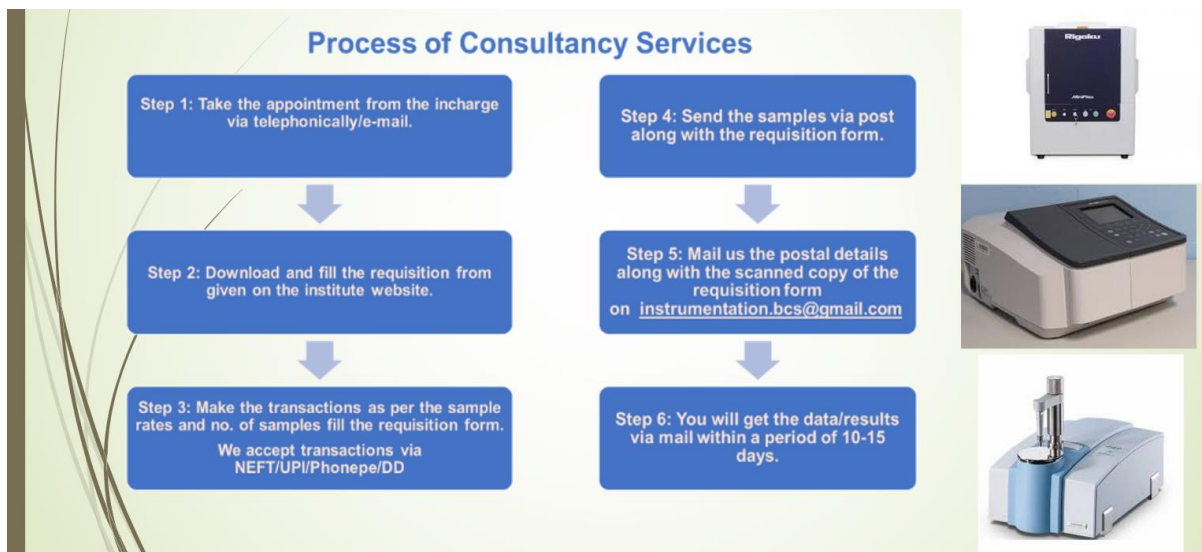


Project Incharges: Dr. S.H. Bagade, Dr. M.M. Yerpude, Dr. S.R. Tiple

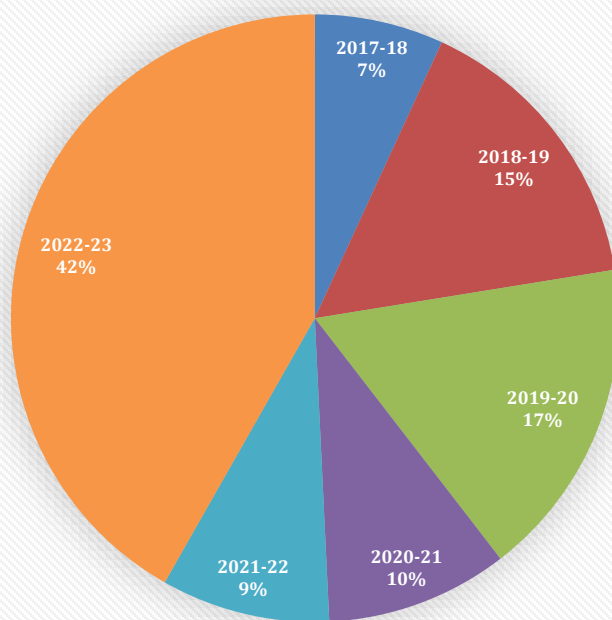
*List of projects completed by students is mentioned in Research Section (page 29-31)

Best Practices: Central Instrumentation Center Operations

Through this practice more than 500 research scholars of the Vidarbha region benefited through consultancy services and training programmes.



Total Revenue Generated

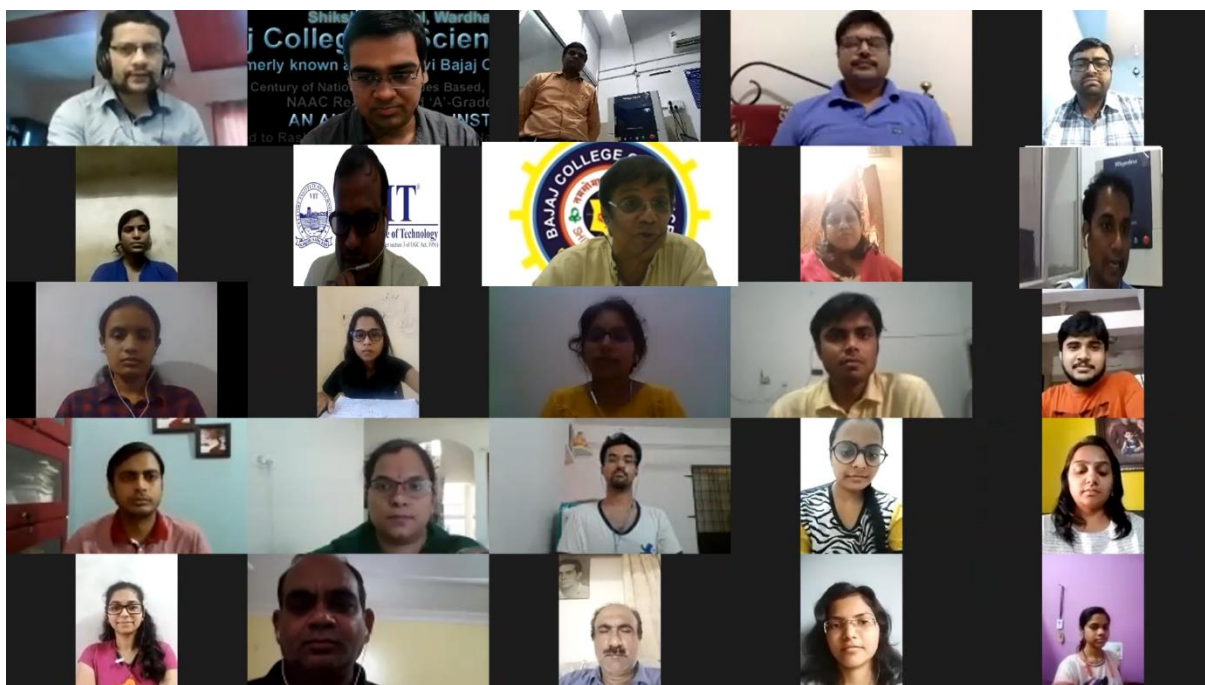


■ 2017-18 ■ 2018-19 ■ 2019-20 ■ 2020-21 ■ 2021-22 ■ 2022-23

Details of Training Programme



XRD: 171, FTIR: 96, UV-vis: 119
(Total Students Trained/Given Hands On Demonstration)



Dr. Pankaj Poddar, Senior Scientist, National Chemical Laboratory (NCL) during interaction with the participants of National Virtual XRD workshop during pandemic on 23rd July 2020

Future Goals:

- Upgrading the needs of laboratory for vocational courses as per the National Education policy (NEP).
- Developing new interdisciplinary courses in view of NEP that integrate Physics with other fields to prepare students for the changing demands of the job market.
- Setting the new laboratory for PG programme.
- Adopting new pedagogical approaches like Expyes that are in line with the NEP's emphasis on student-centric and outcome-based education.
- Fostering a culture of innovation and entrepreneurship among students by providing them with opportunities in collaboration with IIC cell of the institute.
- Strengthening the department's research capabilities by encouraging faculty members to collaborate with researchers from other institutions and industries.
- Emphasizing the importance of experiential learning by providing students with opportunities to participate in research projects, internships, and other hands-on learning experiences.