



SARDAR VALLABHBHAI PATEL COLLEGE KAIMUR (BHABHUA)

(A CONSTITUENT UNIT OF VEER KUNWAR SIGH UNIVERSITY , ARA BIHAR)

DEPARTMENT OF PHYSICS

WELCOME

NAAC PEER TEAM

Highlights of the Departmental facilities (Oldest Dept in Bhabhua Since 1954)

The department comes under the “DBT Star College Scheme”, Government of India since 2024.

Electronic Lab Equipped with electronic scientific equipments. RO Water, Printer and Computer Facility are available in department. Two Laboratory fully equipped with Bsc Physics Experimental Facilities.

Projector Facilities available in Lab For Seminar/Conference. Dark Room Facility available for Optical Experiments.

Fostering innovation and research that contribute

Model for "Technology for Rural Development and Sustainable Future."



equipping students with practical skills and ethical values for academic, industrial and entrepreneurial

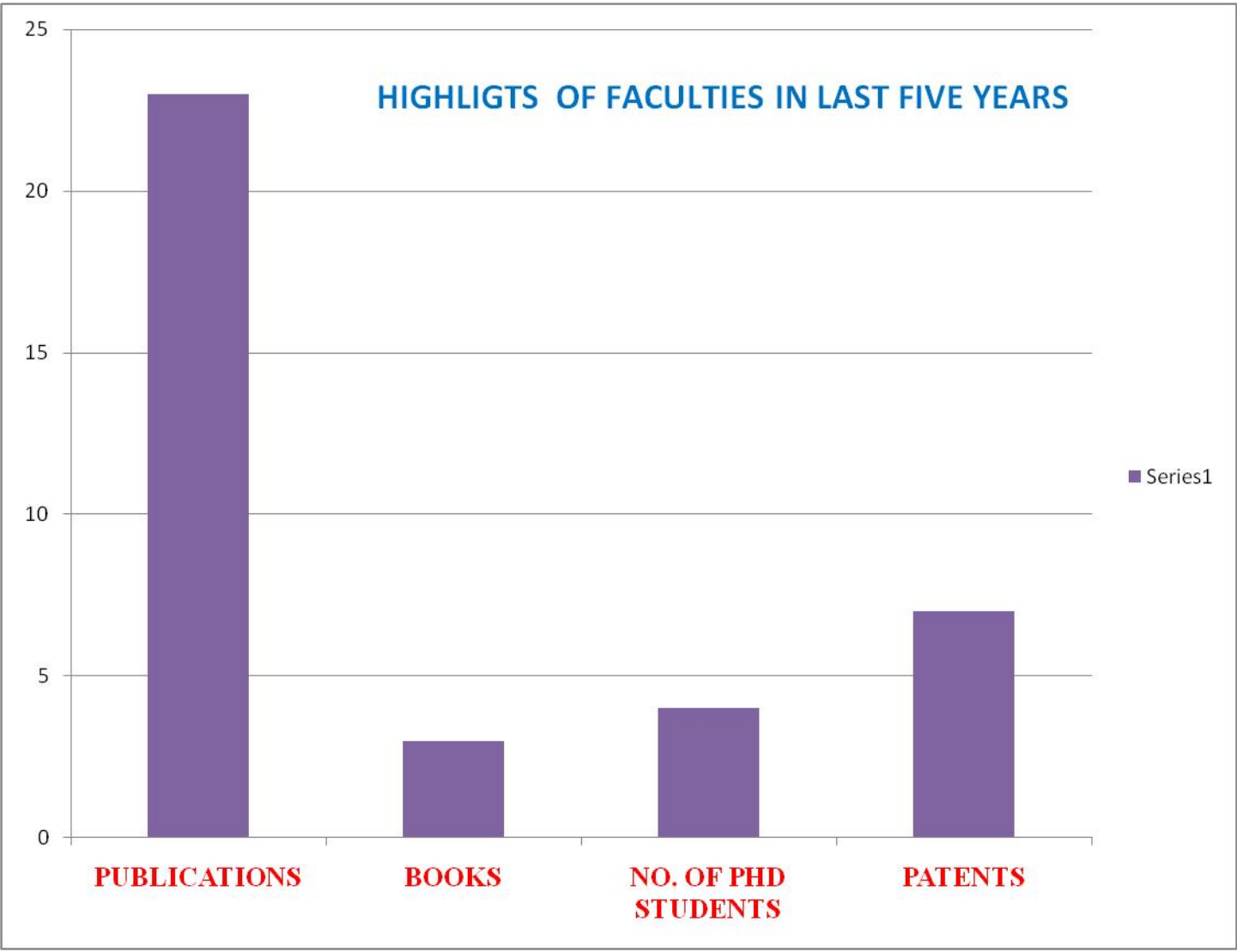
laboratory and analytical skills through hands on training and projects. To prepare students for

Departmental Staff Members

S.No	Name	Post Name	Specialization	Photo
1.	Dr. Raj Kumar Gupta	Assistant Professor	Materials Science	
2.	Dr. Sumit Kumar Rai	Assistant Professor	Theoretical Physics	
3.	Dr. Harendra Kumar Satyapal	Assistant Professor	Magnetic Nanomaterials	
4.	Bittu Kumar	Multi-Tasking Staff		

Headship Chronology

Name	Since When	Till When
Shri Mahesh Prasad	20-01-1966	30-06-2001
Shri Satynaran Prasad	01-07-2001	11-07-2007
Dr. Dileep Kumar	13-07-2007	02-03-2009
Dr. Raj Kumar Gupta	21-08-2017	Till Date



Departmental Time Table- Time-table- Sem-2-4-6

SARDAR VALLABH BHAI PATEL COLLEGE BHABUA, KAIMUR, BIHAR - 821101

II/IV/VI Semester CLASS TIME TABLE (PHYSICS) [U.G.]

DAY	09:30-10:20	10:20-11:10	11:10-12:00	12:00-12:50	12:50-01:40	01:40-2:30
Monday	B.Sc. -IV Sem. MJC-V Room -5 (SKR)	B.Sc. -IV Sem. MJC-VI Room -5 (RKG)	B.Sc. -II SEM. MJC-I Room -5 (SKR)	B.Sc. -II SEM. SEC Room -11	B.Sc. -VI Sem. MJC-X(practical) Physics Lab I & II (RKG/SKR/HKS)	
	B.Sc. -VI Sem. MJC-X Room -1 (RKG)	B.Sc. -V Sem. MJC-XI Room -1 (HKS)	B.Sc. -IV Sem. MJC-VII Room -5 (HKS)	B.Sc. -VI Sem. MJC-XII Room -1 (SKR)		
Tuesday	B.Sc. -IV Sem. MJC-V Room -5 (RKG)	B.Sc. -IV Sem. MJC-VI Room -5 (HKS)	B.Sc. -II SEM. MJC Room -5 (SKR)	B.Sc. -II SEM. SEC Room -11	B.Sc. -VI Sem. MJC-XII (practical) Physics Lab I & II (RKG/SKR/HKS)	
	B.Sc. -VI Sem. MJC-X Room -1 (HKS)	B.Sc. -VI Sem. MJC-XI Room -1 (SKR)	B.Sc. -IV Sem. MJC-VII Room -5 (HKS)	B.Sc. -VI Sem. MJC-XII Room -1 (RKG)		
Wednesday	B.Sc. -IV Sem. MJC-V Room -5 (SKR)	B.Sc. -IV Sem. MJC-VI Room -5 (RKG)	B.Sc. -II SEM. MJC Room -5 (HKS)	B.Sc. -II SEM. VAC Room -06	B.Sc. -IV Sem. MJC-VII Practical Physics Lab I & II (SKR/HKS)	
	B.Sc. -V Sem. MJC-X Room -1 (HKS)	B.Sc. -V Sem. MJC-XI Room -1 (HKS)	B.Sc. -IV Sem. MJC-VII Room -5 (RKG)	B.Sc. -VI Sem. MJC-XII Room -1 (RKG)		
Thursday	B.Sc. -II SEM. MJC Practical Physics Lab I & II		B.Sc. -II SEM. MJC (theory) Room -5 (RKG)	B.Sc. -II SEM. VAC Room -06	B.Sc. -IV Sem. MJC-IV Practical Physics Lab I & II (RKG/SKR/HKS)	

1

Friday	B.Sc. -II SEM. MIC-II Practical Physics Lab I & II (RKG/SKR/HKS)	B.Sc. -IV Sem. (MIC-IV) Room -1 (HKS)	B.Sc. -II SEM. MJC (theory) Room-5	B.Sc. -II SEM. AEC Practical	B.Sc. -II SEM. MDC (theory) Room no-5	B.Sc. -V Sem. MIC -7 ROOM-5 sks	B.Sc. -VI Sem. MIC -8 ROOM-5 sks
				B.Sc. -VI Sem. MJC-XII Room -1 (RKG)		B.Sc. -IV Sem. MIC-IV ROOM-6 sks	
Saturday	B.Sc. -VI Sem. MIC-PHY-Practical Physics Lab I & II (RKG/SKR/HKS)	B.Sc. -II SEM. MIC (theory) Room-5 (RKG/HKS)	B.Sc. -II SEM. AEC	B.Sc. -VI Sem. MJC-XII (practical) Physics Lab I & II (RKG/SKR/HKS)	B.Sc. -II SEM. MDC (theory) Room No-5	B.Sc. -VI Sem. MIC -7 ROOM-5 sks	B.Sc. -VI Sem. MIC -8 ROOM-5 sks
				B.Sc. -V Sem. MJC-X Room -1 (SKR)		B.Sc. -IV Sem. MIC-IV ROOM-6 sks	

PHY:PHYSICS				
THEORY	05,01	RKG = Dr. RAJ Kr GUPTA	SKR = Dr. SUMIT Kr RAI	HKS = Dr HARENDRA Kr SATYAPAL
PRACTICAL	PHY LAB 1, 2			

MIC (T) = MAJOR COURSE (THEORY)
MIC (P) = MAJOR COURSE (PRACTICAL)
MIC (T) = MINOR COURSE (THEORY)
MIC (P) = MINOR COURSE (PRACTICAL)
MDC = MULTIDISCIPLINARY COURSE

Dr S.P. Sharma
(Principal)

2

Time-table-Sem-1-3-5

SARDAR VALLABH BHAI PATEL COLLEGE BHABUA, KAIMUR, BIHAR - 821101

L/III/V Semester CLASS TIME TABLE (PHYSICS) [U.G.]

DAY	09:30-10:20	10:20-11:10	11:10-12:00	12:00-12:50	12:50-01:40	01:40-2:30
Monday	B.Sc.-III Sem. MJC-III Room -5 (SKR)	B.Sc.-III Sem. MJC-IV Room -5 (RKG)	B.Sc.-I Sem. MJC-I Room -5 (SKR)	B.Sc.-I Sem. SEC Room -11	B.Sc.-V Sem. (Honors) (practical)	B.Sc.-II SEM. MJC-II Practical Physics Lab I & II (RKG/SKR/HKS)
	B.Sc.-V Sem. MJC-VIII/IX Room -1 (RKG)	B.Sc.-V Sem. MJC-VIII/IX Room -1 (HKS)		B.Sc.-V Sem. MJC-VIII/IX Room -1 (SKR)	B.Sc.-V Sem. (Honors) (practical)	
Tuesday	B.Sc.-III Sem. MJC-III Room -5 (RKG)	B.Sc.-III Sem. MJC-IV Room -5 (HKS)	B.Sc.-I Sem. MJC Room -5 (SKR)	B.Sc.-I Sem. SEC Room -11	B.Sc.-V Sem. (Honors) (practical)	B.Sc.-II SEM. MJC-II Practical Physics Lab I & II (RKG/SKR/HKS)
	B.Sc.-V Sem. MJC-VIII Room -1 (HKS)	B.Sc.-V Sem. MJC-IX Room -1 (SKR)		B.Sc.-V Sem. MJC-VIII Room -1 (RKG)	B.Sc.-V Sem. (Honors) (practical)	
Wednesday	B.Sc.-III Sem. MJC-III Room -5 (SKR)	B.Sc.-III Sem. MJC-IV Room -5 (RKG)	B.Sc.-I Sem. MJC Room -5 (HKS)	B.Sc.-I Sem. VAC Room -06	B.Sc.-III Sem. (Honors) Practical	B.Sc.-II SEM. MJC-II Practical Physics Lab I & II (RKG/SKR/HKS)
	B.Sc.-V Sem. MJC-VIII Room -1 (HKS)	B.Sc.-V Sem. MJC-IX Room -1 (HKS)	B.Sc.-III Sem. (Subsidiary) (SKR)		B.Sc.-III Sem. (Honors) Practical	
Thursday	B.Sc.-I Sem. MJC Practical Physics Lab I & II (RKG/SKR/HKS)		B.Sc.-I Sem. MJC (theory) Room -5 (RKG)	B.Sc.-I Sem. VAC Room -06	B.Sc.-III Sem. (Subsidiary) Practical	B.Sc.-II SEM. MJC-II Practical Physics Lab I & II (RKG/SKR/HKS)

		B. Sc. -IV Sem. (MIC-IV) Room -1 (HKS)				
Friday	B.Sc.-II SEM. MJC-II Practical Physics Lab I & II (RKG/SKR/HKS)	B.Sc.-II SEM. MJC (theory) Room-5 (RKG/SKR)	B.Sc.-II SEM. AEC Practical B.Sc.-VI Sem. MJC-VI Room -1 (RKG)	B.Sc.-II SEM. MDC (theory) Room no-5 (RKG/SKR)	B.Sc.-V Sem. MJC -7 ROOM-5 xxx B.Sc.-IV Sem. MJC -IV ROOM-6 xxx	B.Sc.-VI Sem. MJC -8 ROOM-5 xxx
Saturday	B.Sc.-VI Sem. MJC-PHY-Practical Physics Lab I & II (RKG/SKR/HKS)	B.Sc.-II SEM. MJC (theory) Room-5 (RKG/HKS)	B.Sc.-II SEM. AEC B.Sc.-V Sem. MJC-V Room -1 (SKR)	B.Sc.-II SEM. MDC (theory) Room No-5 (RKG/SKR)	B.Sc.-VI Sem. MJC -7 ROOM-5 xxx B.Sc.-IV Sem. MJC -IV ROOM-6 xxx	B.Sc.-VI Sem. MJC -8 ROOM-5 xxx
PHY-PHYSICS THEORY PRACTICAL		0501 PHY LAB 1, 2	RKG = Dr. RAJ Kr GUPTA	SKR = Dr. SUMIT Kr RAI	HKS = Dr. HARENDRA Kr SATYAPAL	
MIC (I) = MAJOR COURSE (THEORY) MIC (P) = MAJOR COURSE (PRACTICAL) MIC (T) = MINOR COURSE (THEORY) MIC (P) = MINOR COURSE (PRACTICAL) MIC = MULTIDISCIPLINARY COURSE						
						Dr. S.P. Sharma (Principal)

Syllabus of the courses-Attached with file

[https://www.svpcollegebhabua.org/index.php?file=student_zone.php&&pages=Course%20and%20Syllabus%20:%20B.Sc.%20\(Bachelor%20of%20Science\)](https://www.svpcollegebhabua.org/index.php?file=student_zone.php&&pages=Course%20and%20Syllabus%20:%20B.Sc.%20(Bachelor%20of%20Science))

Milestone of the Department in Last Five years

1. Organized National Virtual Conference on Strategies of Self Dependency in Covid 19 and Application of Exotic materials in the field of physics, chemistry, Biology, Medicine and Engineering.(29th May to 31st May 2020, under STAMI, India Group)
2. Organized WorkShop on Virtual Labs (An MHRD Govt of India Initiative) from 20th to 22th July 2020 under IIT Kanpur.
3. Organized Two FDP program on HTML and EXPEYES software association with IIT-Bombay Tutorials under an initiative of National Mission on education through ICT, Govt from india from 14th May to 27th May 2020.
4. Organized National Online Seminar on “SARS COV-2 Testing/Diagnosis: NANOMATERIAL BASED BIODENSOR USING PHYSICAL PRESPECTIVE.”on 27th feb 2020

SVP COLLEGE, BHABHUA, PHYSICS DEPARTMENT

PHYSICS PROGRAM- SPECIFIC OUTCOME

- PSO1-** Improve scientific attitude and temperament in experimental skills, data analysis, calculations, measurements, the strength of equations, formulae, graphs, mathematical tools to tackle the problems.
- PSO2-** Understand theories, concepts and significance of physics and its relevance in present day Technology.
- PSO3-** Create interest in the subject and improve technological aspect through mini projects, projects, models, demonstrations, presentations etc.
- PSO4-** Gain the knowledge of quantum mechanical concepts applicable in understanding behaviour of nano-materials and applications in nanotechnology.
- PSO5-** Understand various types of crystal structures and symmetries and understand the relationship between the real and reciprocal space and learn the Bragg's X-ray diffraction in crystals. **PSO6.** Enhance academic abilities, personal qualities and transferable skills this will give them an opportunity to develop as responsible citizens.

Programme outcomes

SEMESTER- ONE

- CO1 – Core Knowledge:** **CO1-** Grasped the Newton's laws of motion, different types of frames of references and Centre of mass.
- CO2-** Learned conservation laws of energy and linear momentum and apply them to solve problems .
- CO3-** Learn the basics idea of moment of inertia and its application for different shapes of object. Also know about rotational motion.
- CO4-** Fundamental ideas of special theory of relativity such as length contraction and time dilation and mass – energy invariance.
- CO5-** Identifying and describing physical systems with their professional knowledge.

SEMESTER- TWO

- CO1-** To understand the concepts Gravitation and its application.
- CO2-** Learned the basic concept of SHM, its displacement, velocity and energy relation. Also learned about oscillation and its type.
- CO3-** Learned difference between elastics and non- elastics material and elasticity depend upon which factor.
- CO4-** Basic idea of Viscosity and different types of flow. Also learned about surface tension..

SEMESTER- THREE

- CO1-** The course makes the students able to understand the basic physics of heat and temperature and their relation with energy, work, radiation and matter.
- CO2-** The students also learn how laws of thermodynamics are used in a heat engine to transform heat into work.
- CO3-** Study the laws of thermodynamics, thermodynamic description of systems. **CO4-** Realize the importance of Thermo dynamical functions and applications of Maxwell's relations.

SEMESTER- FOUR

- CO1-** Students learned a clear picture of crystal structures and a clear understanding about x-ray diffraction.
- CO2-** Expected to gain knowledge of superconductivity, its underlying principles and its applications in modern world.
- CO3-** Learned the magnetic Properties of matter.
- CO4-** Know about the Energy band picture of conductor, semiconductors and insulators
- CO5-** Knowing about the light and its importance in life, its characteristics, properties and use in various instruments.

Programme outcomes

SEMESTER- FIVE

- CO1-** Familiarity with Black body radiation, Spectral distribution and different types of laws.
- CO2-** Learned about statistical distribution and have basic ideas.
- CO3-** Know about the Maxwellboltzman distribution and its application.
- CO4-** The students also study Bose-Einstein and Fermi Dirac Statistics and their applications.
- CO5-** Developing their scientific intuition, ability and techniques to tackle problems either theoretical or experimental in nature.

SEMESTER- SIX

- PCO1-** Students would know about the basic principles in the development of modern physics.
- CO2-** Students to study the advance branches: quantum physics, nuclear physics, particle physics and high energy physics.
- CO3-** Learned about the Planck's hypothesis, photoelectric effect, Compton effect, matter waves, atomic models, Schrodinger wave equations.
- CO4-** Know about brief idea of nuclear and its stability. Also know about β , γ -rays emission and Fission and fusion.

Courses with Employability/Skill Development/ Value Added Courses

Students would know about the basic principles in the development of modern physics.

Learned about the Planck's hypothesis, photoelectric effect, Compton effect, matter waves, atomic models, Schrodinger wave equations.

Gain the knowledge of quantum mechanical concepts applicable in understanding behaviour of nano-materials and applications in nanotechnology

FORTRAN PROGRAMMING

VIRTUAL LAB

Programmes for Slow Learners



Peer assisted teaching



Informal interaction and mentorship



Regular monitoring



Remedial Classes

Teaching Learning and Evaluation

Classical
Chalk & Duster

ICT Enabled tools

- Smart class
- Google meet

Expert Online
Classes

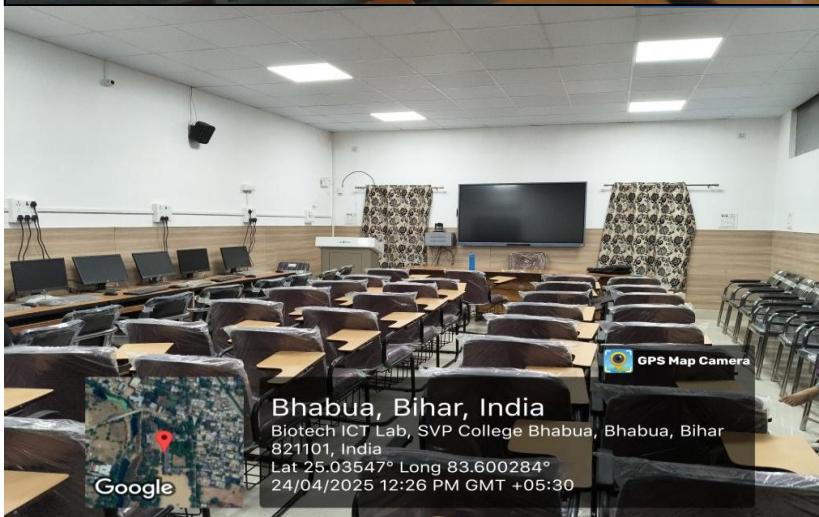
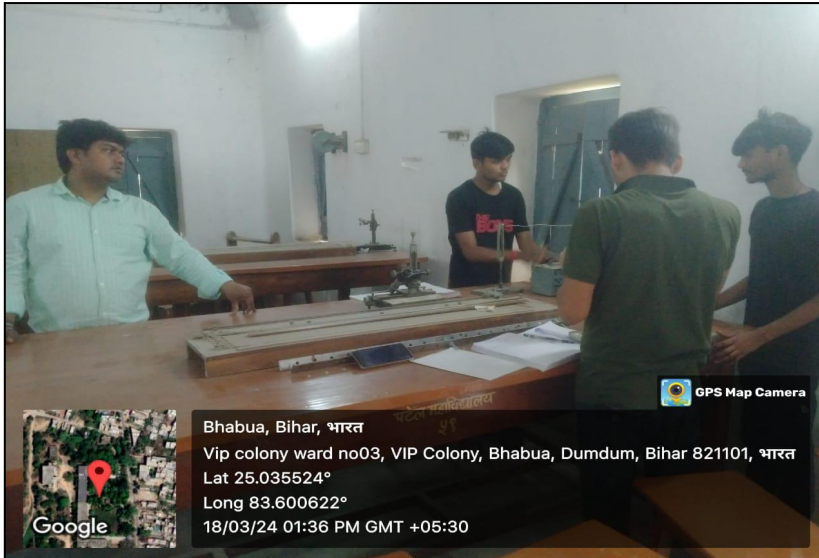
Details of Academic Programmes offered

Name of the Programme	Level (UG/PG/Ph.D. etc.)	Sanctioned Intake	Student Strength (Year-Wise)
BSc (2022-24)	UG	210	190

Infrastructures



Infrastructures



Student Support and Progression

Scholarship for female students

Online learning programs, workshops, seminars

National Apprenticeship Promotion Scheme (NAPS)

Placement Cell

PRACC : Encourage students for civil services/Govt. Jobs/Higher studies

Mentor-Mentee system

Mentor- Mentee system

- It promotes peer learning, identifies the student competencies and encourage participation in challenging programme
- Also provide individual attention

Mentor/Mentee Ratio

- Physics 180:1(1mentor for every 180 students)

Outreaching Activities



SARDAR VALLABH BHAI PATEL COLLEGE
(A CONSTITUENT UNIT OF V.K.S.U., ARA)
Bhabua, Kaimur – 821101 BIHAR
Website :- www.svpcollegebhabua.org Accredited by NAAC -'B' Grade
E-mail :- collegesvbhabua@gmail.com
Supported Under DBT-STAR College Program
(ISO 9001 2015, ISO 14001 2015 & ISO 50001 2018 Certified)



Quiz competition under DBT-star College Scheme

Date-30 August 2024

Venue: Room no-11, Sardar Vallabhbhai Patel College, Bhabua

Theme- Recent development in Science and Technology

Participating Departments:- Physics, Chemistry, Maths, Biotech, Botany, Zoology

President- Dr S.P.Sharma Convener- Dr Raj Kr Gupta

**Organizing Team
Dr Anand Prakash
Dr Sumit kr Rai**

Organising Committee-DBT Star College Members



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(A CONSTITUENT UNIT OF V.K.S.U., ARA)
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Website :- www.svpcollegebhabua.org Accredited by NAAC -'B' Grade
E-mail :- collegesvbhabua@gmail.com
Supported Under DBT-STAR College Program
(ISO 9001 2015, ISO 14001 2015 & ISO 50001 2018 Certified)



INDUCTION PROGRAMME

**BSc Students
(under DBT-Star College Scheme)**

Date-30 August 2024, Time-10 a.m onwards

Venue: Room no-11, SVP College, Bhabua

President- Dr S.P.Sharma

**Convenor:- Dr.Sumit Kumar Rai
Dr. Anand Prakash**

Lectures and Seminars

About the College

Sardar Vallabhbhai Patel College is a unique institution of higher education in Bihar. The College was established in 1957 and converted into a constituent unit of Bihar University in 1976.

The college is situated in the heart of the Bhabua town in an area of 15 acres of land. The college has earned a unique reputation in imparting education upto post graduate level in Science, Social Science, Computer Science, and Humanities.

The college is managed and maintained as per law under the authority of the government of Bihar and the Chancellor of the Universities of Bihar. It's all departments, including the Department of Computer Application, are directly governed by the Veer Kunwar Singh University, Ara, through its statutory authority bodies.

About the Workshop

Data is the new gold in the modern digital world. Data is now a critical asset for businesses, offering insights into various aspects like consumer behavior, market trends, and operational efficiency. Big Data is growing exponentially, providing businesses with limitless opportunities for growth and innovation. Artificial intelligence, machine learning, data science, and big data analytics are the essential requirements for organizations looking to harness their business potential and better customer experience. This workshop, over 3 days, will help the students in to learn and practice the following.

Topic Covered

- Introduction to Data Science & Big Data Analytics
- Data Analysis Life Cycle
- Machine Learning Algorithms
- Introduction to Python and R programming
- Python for Data Science
- R for Data Science
- Introduction to Hadoop MapReduce and Spark

Register Link

<https://forms.gle/AN5ozz8BSVMZFLmvs84>



Chief Patron

Prof. Shaileendra Kumar Chaturvedi
Vice-Chancellor, V.K.S.U., Ara

Patron

Dr. Shankar Prasad Sharma
Principal, SVP College Bhabua
Prof. Anil Kumar Singh
Director, Dept. Of Comp. Sc., V.K.S.U., Ara

Advisory Board

Prof. R.P. Mandal, BHU
Prof. P.K. Mishra, BHU
Prof. Manjari Gupta, BHU
Dr. Pankaj Singh, BHU
Dr. Jainath Yadav, CUSB
Dr. Shiv Prakash, UoA
Dr. S.K. Jha, UoA

Resource Person

Dr. Sudhakar Singh, UoA
Dr. Shwet Ketur, MMMUT
Dr. Rajesh Kumar, UoA
Dr. P. Sandesh Singh, DITESTU
Dr. B. S. Kushwaha, PostNetwork Academy

Organizing Committee

Dr. Mahesh Prasad
Dr. Nayaz Ahmad Siddiquee
Dr. Sonal
Dr. Anand Prakash
Mr. Satyendra Kumar
Mr. Sujeet Kumar Singh

SVP COLLEGE

A Constituent Unit of V.K.S.U. Ara (Bihar)

BHABUA(KAIMUR)

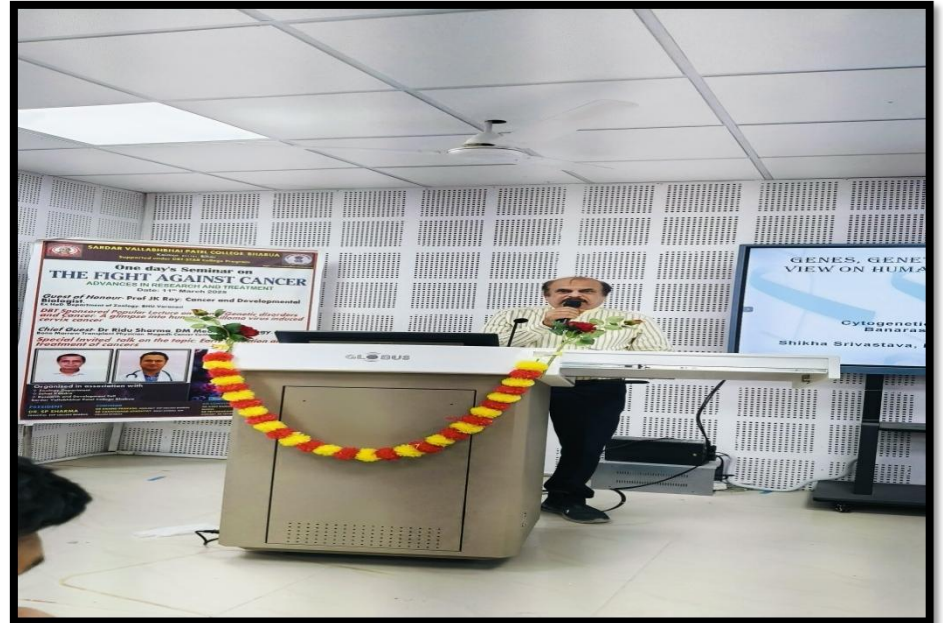


National Workshop on

Data Science & Big Data Analytics

◆ (28 April – 30 April 2025)

VENUE – SEMINAR HALL, SVP COLLEGE BHABUA



SWOC Analysis

STRENGTH

- Well-Qualified Faculty
- Recognition as a STAR College under DBT
- Student-Centric Approach
- State-of-the-Art Laboratories
- Extra-Curricular Engagement



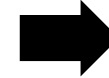
WEAKNESS

- Limited Funding Support
- Lack of PG and Research Programs
- Limited Placement Opportunities
- Language Barrier and Soft Skills
- Infrastructural Constraints
- Limited Alumni Engagement



OPPORTUNITY

- Scope for Interdisciplinary Collaboration
- Skill Development & Add-On Courses
- Alumni Engagement
- UGC/DBT/ICMR Project Funding
- Expanding Industry Tie-ups



CHALLENGES

- Retention of Faculty
- Limited Awareness Among Stakeholders
- Brain Drain to Metro Cities
- Competition from Private Institutions
- Rapid Technological Advancements

Future plans

Academic Expansion

- Curriculum revision
- Introduction of certification programs
- Introduction of PG program

Infrastructure Development

- Up gradation of existing laboratories with advance equipments

Industrial collaboration

- Partner with industry and research organization for internships , placements and research opportunities

Social outreach

Biotechnology awareness program for school students and farmers

THANK YOU

“LIVE WITH NATURAL LAW-
PHYSICS .”