



# Veer Bahadur Singh Purvanchal University, Jaunpur

## Department of Mathematics

### Faculty of Engineering & Technology

**ABOUT THE DEPARTMENT:** Mathematics is deeply rooted in all the sciences and has a leading role in all engineering streams. The Department of Mathematics came into existence way back in 1997 with the inception of the Faculty of Engineering and Technology on the main campus of the University. It is a supplementary part of the Faculty of Engineering & Technology. The Department has been striving to provide quality technical education with core support to all engineering departments. In the last four years, research work is also been carried out. At present, seven scholars are registered in the department. The Department is a good centre of teaching, learning, and research as many articles by the faculty members have been published in Science Citation Indexed (SCI) and peer-reviewed journals. The Department keeps pace with the advances in technology by providing basic knowledge to the students enrolled in the B. Tech, B. Pharm, MCA, and MBA programmes. The department usually provides some extra classes to the weaker students. The Department adopts some modern teaching techniques to explain the mathematical concepts geometrically rather than through mathematical equations. Faculty members of the Department have delivered lectures through online mode during the COVID-19 lockdown period. Some teachers have prepared their video lectures and uploaded them on their own YouTube channel. The Department has a highly qualified teaching faculty from reputed institutes/colleges like IIT Roorkee and MNNIT Allahabad, Prayagraj, University of Allahabad, Prayagraj, and TDPG College, Jaunpur.

### VISION OF THE DEPARTMENT

The vision of the Department of Mathematics, Faculty of Engineering & Technology, V.B.S. Purvanchal University, Jaunpur is as follows:

- The Department is to be recognised nationally and internationally for its excellence in teaching and research.
- The department should be remembered for providing excellent mathematical skills to its UG and PG students.
- The departmental goal is to create a platform for encouraging outcome-based research environments.

## **MISSION OF THE DEPARTMENT**

The mission of the department is as follows:

- To meet the mathematical needs of the institute and the community.
- To provide students (UG/PG) with a wide spectrum of valuable courses with rigorous training/tutorials that enables them to pursue their future.
- Engineers must develop mathematical ideas and apply them to solve complex engineering problems, as well as design mathematical models to meet the requirements.
- to encourage students and faculty members of the Department to be exposed to different research environments in India and abroad.

## **EDUCATIONAL OBJECTIVES OF THE DEPARTMENT**

The programme prepares students to teach mathematics at a higher education institute while also providing a solid mathematical foundation. The major educational objectives are:

- Using technology as a significant aid in math learning.
- To revisit the fundamental concepts and principles of the discipline and strengthen them.
- To develop an interdisciplinary approach to learning between mathematics and other disciplines.
- to encourage collaborative learning through group activities, hands-on learning, and concretizing mathematical concepts.
- To provide motivation and support in research and development.

## **OUTCOMES OF THE DEPARTMENT**

The Program Outcomes (POs) of the Department are as follows:

- To enable students to read and comprehend mathematical and/or statistical research literature.
- Students will be able to identify and use mathematical and computational methods in order to solve comprehensive problems.
- Students will be able to read and write logical arguments in order to prove advanced mathematical results.
- Effective Communication: Students will be able to effectively communicate mathematical concepts, problems, and their solutions in written and oral form.
- To learn to apply mathematics in real-life situations aiming at service to society.

**COURSES TO WHICH DEPARTMENT ASSIST:** Bachelor of Technology (All Six Branches), Master of Technology, and Bachelor of Pharmacy

## **SUBJECTS TAUGHT:**

### **B. Tech Odd Semesters**

Sem I Mathematics-I (KAS103) (Common for all branches)

Sem III Discrete Structures and Theory of Logic (KCS-303) (For CSE and IT)

Sem VII Operations Research (KOE-075) (For CSE and IT)

Sem VII Fuzzy Logic (KOE-07) (Common for all branches)

### **B. Tech Even Semesters:** Sem II Mathematics-II (KAS-203) (Common for all branches)

Sem IV Mathematics-IV (PDE, Probability & Statistics) –IV (KAS401) (for all branches)

### **For Pre-Ph. D. course work:** MAPCW-101: Research Methodology (Written examination)

CW-102: Computer Applications (Practical Exam.)

CW -103: Research Ethics (Viva voce and Internal Assessment)

### **Elective Papers:** MAOP-1: Viscous Flow in Porous Media

MAOP-2: Lie Groups, Lie Algebras and Similarity Transformations

MAOP-3: Partial Differential Equations

MAOP-4: Fuzzy Theory and Applications



MAOP-6: Differential Geometry



MAOP-7: Riemannian Geometry

## **NUMBER OF TEACHING POSTS SANCTIONED, FILLED AND ACTUAL**

<b>Designation</b>	<b>Sanctioned</b>	<b>Filled</b>
Professor	NIL	NIL
Associate Professors	01 (UP Govt)	01 (Direct Recruitment)
Asst. Professor	01 (UP Govt.)+2 (Univ. Created)	01 (Permanent)+02 (Contract)

## FACULTY PROFILE

<p><b>DR. RAJ KUMAR</b></p> 	Highest Qualification	Ph.D. (Nov 2014) (Motilal Nehru N I T Allahabad, Prayagraj)
	Designation	<b>Associate Professor &amp; Head</b>
	Date of Joining	18 <sup>th</sup> May 2018 (Associate Professor) and 15 <sup>th</sup> March 2004 (Assistant Professor)
	Teaching Experience	18 years
	Areas of Interest	Differential equations, Fluid Dynamics, Bio-models
	No. of Publications	25
	Contact Information	E-Mail: <a href="mailto:rsoniraj2@gmail.com">rsoniraj2@gmail.com</a> Mob. No.: 9451160911
	<b>Link for CV</b>	
	Scopus ID	<a href="https://www.scopus.com/authid/detail.uri?authorId=57217697267">https://www.scopus.com/authid/detail.uri?authorId=57217697267</a>
	Vidwan ID	3484222
	AD Scientific ID	<a href="https://www.adscientificindex.com/scientist.php?id=3484222">https://www.adscientificindex.com/scientist.php?id=3484222</a>
	Web of Science	<a href="#">AGJ-2280-2022</a>
	<p><b>DR. SUSHIL SHUKLA</b></p> 	Highest Qualification
<b>Designation</b>		<b>Assistant Professor</b>
Date of Joining		4 <sup>th</sup> Nov. 2019 (Assistant Professor)
Teaching Experience		15 years (2 Years 10 months in VBSPU)
Areas of Interest		Differential geometry, Operations Research
No. of Publications		27
Contact Information		E-Mail: <a href="mailto:sushilcws@gmail.com">sushilcws@gmail.com</a> Mob. No.: 6387987133
Link for CV		
Scopus ID		<a href="https://www.scopus.com/authid/detail.uri?authorId=57214436590">https://www.scopus.com/authid/detail.uri?authorId=57214436590</a>
ORCID ID		<a href="https://orcid.org/0000-0003-4941-9921">https://orcid.org/0000-0003-4941-9921</a>
Google Scholar ID		<a href="https://scholar.google.com/citations?user=Bqe7j1cAAAAJ&amp;hl=hi">https://scholar.google.com/citations?user=Bqe7j1cAAAAJ&amp;hl=hi</a>

 <p><b>DR. U.R. PRAJAPATI</b></p>	Highest Qualification	Ph.D. (VBS Purvanchal Univ., Jaunpur)
	Designation	Assistant Professor (Contract)
	Date of Joining	16thOct. 2000
	Teaching Experience	20 Years (In VBSPU)
	Areas of Interest	Special Functions, Numerical methods.
	No. of Publications	6
	Contact Information	E-Mail: <a href="mailto:udayrajprajapati2011@gmail.com">udayrajprajapati2011@gmail.com</a> Mob.No.: 9415898801
	<b>Link for CV</b>	
 <p><b>DR. NIMISHA YADAV</b></p>	Highest Qualification	Ph.D. (VBS Purvanchal Univ., Jaunpur)
	Designation	Assistant Professor on Contract
	Date of Joining	13thAugust 2018
	Teaching Experience	10 Years (4 years in VBSPU)
	Areas of Interest	Differential equations, Fluid dynamics
	No. of Publications	08
	Contact Information	E-Mail: <a href="mailto:guria.nimisha@gmail.com">guria.nimisha@gmail.com</a> Mob.No.: 8299524266
	<b>Link for CV</b>	

### RESEARCH SCHOLARS REGISTERED IN DEPARTMENT:

Name of Scholar	Reg. Year	Research Supervisor
Mr. Ravi Shankar Verma (OBC)	2019	Dr Raj Kumar
Mr. Kripa Shankar Pandey (UR) (JRF)	2019	Dr Raj Kumar
Mr. Avneesh Kumar (UR)(Thesis submitted)	2019	Dr Raj Kumar
Mr. Saurabh Kumar Singh (UR)	2019	Dr Raj Kumar
Mr. Shiv Kumar Yadav (JRF) (OBC)	2021	Dr Raj Kumar
Mr. Ayush Ojha (UR)	2021	Dr Sushil Shukla

### MEMBER OF SELECTION BOARDS/ COMMISSION

#### Dr. Raj Kumar

Uttar Pradesh Maadhyamik Shiksha Sewa Chayan Board, Prayagraj & Uttrakhand P.S.C.

## NUMBER OF RESEARCH PROJECTS ONGOING : 03

S. No.	Name of the principal Investigator	Name of the Research Project	Name of funding agency	Amount/ Fund provided	Year of sanction	Duration of the project	Status (Completed/ Ongoing)
1	Dr. Raj Kumar	Minor Research Project	VBS PU, Jaunpur	1 lac	2022	1 Year	Ongoing
2	Dr Sushil Shukla	Minor Research Project	VBS PU, Jaunpur	1 lac	2022	1 Year	Ongoing
3	Dr Sushil Shukla	Centre of Excellency in Mathematics	Department of Higher Education, Government of Uttar Pradesh	2.9 lacs	2022	1 Year	Ongoing

## MEMBERSHIP OF EDITORIAL BOARDS AS REVIEWER IN SCI JOURNALS:

### Dr. Raj Kumar

1. Proceedings of the National Academy of Sciences, India Section A: Physical Sciences (Springer Publisher)
2. The Asian Journal of Mathematics (A Journal by the International Press)
3. Computers & Mathematics with Applications (Elsevier Publisher)
4. Physia A: Statistical Mechanics and its Applications (Elsevier Publisher)
5. Waves in Random and Complex Media (formerly Waves in Random Media)
6. Physica Scripta
7. Nonlinear Dynamics (springer)

## PUBLICATIONS:

### Dr. Raj Kumar

Citation Index – range / average    **Research Gate Score: 13.87**

h-index 11, i10 index 12    **Citations 266 (since 2017)**

h-index 12, i10 index 13    **Total citations 304**

### 2022:

- [1]. Some invariant solutions of coupled Konno-Oono equations arising in electromagnetic and quantum fields, **Raj Kumar** and Avneesh Kumar, Phys. Scr. (IOPScience) 97 (2022) 075501 (pages 1-11), 2022, Refereed/SCI, Impact factor **3.081**, DOI: 10.1088/1402-4896/ac71e1

- [2]. More solutions of coupled equal width wave equations arising in plasma and fluid dynamics, Raj Kumar and Avneesh Kumar\*, International Journal of Applied and Computational Mathematics 8:186, 1-13, 2022 DOI: 10.1007/s40819-022-01400-7
- [3]. Dynamics of some new solutions to the coupled DSW equations traveling horizontally on the seabed, **Raj Kumar\***, Ravi Shankar Verma, Journal of Ocean Engineering and Science (Elsevier), 2022, Refereed/ESCI, Impact factor **4.803**, DOI: 10.1016/j.joes.2022.04.015, 1-10
- [4]. Dynamics of invariant solutions of mKdV-ZK arising in a homogeneous magnetised plasma, **Raj Kumar**, Ravi Shankar Verma\*, Nonlinear Dynamics,108, 4081-4092 (2022), Impact factor**5.741**, DOI:10.1007/s11071-022-07389-4
- [5]. Dynamical behavior of similarity solutions of CKOEs with conservation law, **Raj Kumar** and Avneesh Kumar, Appl. Math. Comput. (Elsevier), 422, 2022, 126976, Refereed/SCI, Impact factor **4.391**, DOI: 10.1016/j.amc.2022.126976
- [6]. On similarity solutions to (2+1)-dispersive long-wave equations, **Raj Kumar\***, Ravi Shankar Verma, Atul Kumar Tiwari, Journal of Ocean Engineering and Science(Elsevier),2022,Refereed/ESCI, Impact factor **4.803**,DOI: 10.1016/j.joes.2021.12.005
- [7]. Optimal subalgebra of GKP by using Killing form, Conservation Law and some more solutions, **Raj Kumar**, Avneesh Kumar\*, International Journal of Applied and Computational Mathematics (Springer), ISSN **1819-4966**,Journal: 40819 Article No.: 1211, 8(11), 2022,SCOPUS DOI: 10.1007/s40819-021-01211-2

## 2021:

- [1]. Dynamics of some more invariant solutions of (3 + 1)-Burgers system, Raj Kumar\*, Mukesh Kumar, Atul Kumar Tiwari, International Journal for Computational Methods in Engineering Science and Mechanics (Taylor & Francis), ISSN **1550-2287**, 22(3): 225-234, SCI, Impact factor**1.31**, [doi.org/10.1080/15502287.2021.1916693](https://doi.org/10.1080/15502287.2021.1916693)
- [2]. Some more invariant solutions of (2+1)-water waves, Mukesh Kumar, **Raj Kumar\***, Anshu Kumar, International Journal of Applied and Computational Mathematics (Springer), ISSN **1819-4966**,7 (18): 2021,SCOPUS DOI:10.1007/s40819-020-00945-9.

## 2019:

- [8]. More *Solutions of Coupled Whitham-Broer-Kaup Equations*, Mukesh Kumar, Atul Kumar Tiwari, Raj Kumar, Proc. Natl. Acad. Sci., India, Sect. A Phys. Sci. (**Springer**), (2019) 89: 747-755, **Impact factor 0.921, SCIDOI:10.1007/s40010-018-0527-1** ISSN 2250-1762.

## 2018:

- [1]. On closed form solutions of (2+1)-breaking soliton system by similarity transformations method, Mukesh Kumar, Dig Vijay Tanwar, Raj Kumar, Computers & Mathematics with Applications (**Elsevier**), 75 (2018) 218-234, **DOI:10.1016/j.camwa.2017.09.005, Impact factor 3.370, SCI, ISSN 0898-1221.**
- [2]. On Lie symmetries and soliton solutions of (2+1)-dimensional Bogoyavlenskii equations, Mukesh Kumar, Dig Vijay Tanwar, Raj Kumar, Nonlinear Dynamics, 94 (4), 2547-2561, **Impact factor 4.339, SCI, ISSN 1573-269X.**

## 2017:

- [1]. Some More Solutions of Kedomtsev-Petviashvili Equation, with Mukesh Kumar, Atul Kumar Tiwari, Computers & Mathematics with Applications (**Elsevier**), 74 (2017) 2599–2607, **2017. Impact factor 3.370, SCIDOI:10.1016/j.camwa.2017.07.034.**
- [2]. Soliton solutions of KD system using similarity transformations method, with Mukesh Kumar, Computers & Mathematics with Applications (**Elsevier**), 73, **2017**, 701-712, **Impact factor 1.861, SCI.**

## 2016:

- [1]. Application of Lie-Group Theory for solving Calogero-Bogoyavlenskii-Schiff Equation (Sole author)IOSR Journal of Mathematics (**IOSR-JM**), 12(4), **2016**, 144-147, **Non SCI.**
- [2]. Similarity Solutions of the Konopelchenko-Dubrovsky System Using Lie Group Theory, with Mukesh Kumar, Anshu Kumar, Computers & Mathematics with Applications (**Elsevier**), 71(10), **2016**, 2051-2059, **Impact factor 3.370 .**

## 2015:

- [1]. On Exact Solutions of (2+1)-Dissipative ZK Equation (Sole author), International Journal of Science, Environment and Technology, 4(5), **2015**, 1430-1437, **NonSCI, .**
- [2]. Some more similarity solutions of the (2 + 1)-dimensional BLP system, with Mukesh Kumar and Anshu Kumar, Computers & Mathematics with Applications (**Elsevier**), 70, **2015**, 212-221, **Citations 17, Impact factor 3.370, SCI.**
- [3]. Some More Solutions of Burgers' Equation, with Mukesh Kumar published in an International Conference: (ICMSQUARE-14) proceeding at Madrid, Spain from August 28-31, **2014**. Phys.: Conf. Ser. Volume 574 (2015) 012038, IOP Publishing, ISSN: 1742-6588, **SCI doi:10.1088/1742-6596/574/1/012038.**

## 2014:

- [1]. On Similarity Solutions of Zabolotskaya-Khokhlov Equation, with Mukesh Kumar and Anshu Kumar, Computers & Mathematics with Applications (**Elsevier**), 68, **2014**, 454-463. **Impact factor 3.370, SCI.**



- [2]. On New Similarity Solutions of the Boiti-Leon-Pempinelli System, with Mukesh Kumar, Communications in Theoretical Physics (IOP Ltd.), 61(1), 2014, 121-126, **Impact factor 1.178, SCI.**

### 2013:

- [1]. Some Soliton Solutions of Non linear Partial Differential Equations by Tan-Cot Method, with Mukesh Kumar & Anshu Kumar, IOSR–Journal of Mathematics, 6, 2013, 23-28, **Non-SCI.**
- [2]. On Some New Exact Solutions of Incompressible Steady State Navier-Stokes Equations, with Mukesh Kumar, Meccanica (Springer), 49, 2014, 335-345, **Impact factor 2.380, SCI.**

### 2007:

- [1]. Digital Video Authentication for forensic Application, with Saurabh Upadhyay and Sanjay Singh, Atmbodh, 4(1), 2007, 54-60 UGC listed.

## Dr Sushil Shukla

### 2022:

- [1] On Hopf lightlike hypersurfaces of indefinite Cosymplectic Manifold, Sushil Shukla, Stochastic Modelling and Applications, 26(1), 2022, 125-133, ISSN:0972-3641.
- [2] On recurrent Lightlike Hypersurfaces of Indefinite Kenmotsu Manifold, Sushil Shukla, Mathematical Statistician and Engineering Applications, 71(4), 2022, 2144-2152, ISSN:2094-0343.

### 2021:

- [1] Totally umbilical lightlike hypersurfaces of Sasakian Manifold, Sushil Shukla, Stochastic Modelling and Applications, 25(2), 2021, 137-147, ISSN:0972-3641.
- [2] Conformal Screen on Lightlike Hypersurfaces of Almost Hyperbolic Hermitian Manifold, Sushil Shukla, Journal of International Academy of Physical Sciences 25(3), 2021, 359-369, ISSN0974- 9373.

### 2020:

- [1] Ricci Solitons on Para-Sasakian Manifold, Sushil Shukla, Journal of International Academy of Physical Sciences 24(4), 2020, 433-438, ISSN0974- 9373.
- [2] Ricci Solitons on Para-Sasakian Manifold, Sushil Shukla, Journal of International Academy of Physical Sciences 24(1), 2020, 13-24, ISSN 0974- 9373.

### 2019:

- [1] Ricci Solitons on Quasi-Sasakian Manifold, Sushil Shukla, S. Tiwari, Ultra Scientist of Physical Sciences 31 (11), 2019, 98-105 ISSN 0970-9150.  
DOI: <http://dx.doi.org/10.22147/jusps-A/311101>
- [2] Recurrent lightlike hypersurfaces of indefinite almost hyperbolic Hermitian manifold with semi-symmetric metric connection, Sushil Shukla, P. N. Pandey, Journal of International Academy of Physical Sciences 23(4), 2019, 349-358, ISSN0974- 9373.

## 2018:

- [1] Ricci Solitons on Kenmotsu Manifold, with S. Tiwari Ultra Scientist of Physical Sciences 30, **2018**.40-408 ISSN 0970-9150. DOI: <http://dx.doi.org/10.22147/jusps-A/301102>

## 2017:

- [1].On recurrent lightlike hypersurfaces of indefinite hyperbolic Hermitian manifold with Quarter-symmetric metric connection, with S. Tiwari, Technological and Managerial Strategies for Next Generation Transformation, **2017**, 297-302.

- [2].On Lie recurrent lightlike hypersurfaces of indefinite almost hyperbolic Hermitian manifold with semi-symmetric metric connection, with S. Tiwari, Ultra Scientist of Physical Sciences 29,**2017**. 569-576, ISSN 0970-9150. DOI: <http://dx.doi.org/10.22147/jusps-A/291206>

## 2016:

- [1] On induced affine connection of almost hyperbolic Hermitian manifold with S. Tiwari in Ultra Scientist of Physical Sciences 28,**2016**.79-86 ISSN 0970-9150.

## 2014:

- [1] Properties of Hyperdistribution of Real Hypersurfaces of Almost Hyperbolic Hermitian Manifold, Sushil Shukla, Ultra Scientist of Physical Sciences 26,**2014**.193-200 ISSN 0970-9150.

## 2013:

- [1] Einstein Constant for Almost Hyperbolic Hermitian Manifold on the Product of two Sasakian Manifold, Sushil Shukla, Ultra Scientist of Physical Sciences 25,**2013**.251-256 ISSN 0970-9150.

## 2012:

- [1] Specific Curvature Tensor on Almost Hyperbolic Hermitian Manifold Admitting Semi-Symmetric Metric Connection, Sushil Shukla, Shekhar (N.S.) Int. J. Sci. Tech.1,**2012**.23-29. ISSN2277-8152.

## 2011:

- [1] On Relativistic Fluid Space Time Admitting Heat Flux of a Generalized Recurrent and Ricci-recurrent Kenmotsu Manifold, Sushil Shukla, Journal of International Academy of Physical Sciences, 15, **2011**. 143-146ISSN 0974-9373

- [2] Parallel and H-projective curvature tensor on almost hyperbolic Hermitian manifold admitting semi-symmetric metric connection, Sushil Shukla, Shekhar (N.S.) Int. J. Math.3,**2011**.21-26ISSN0976-4445.

## 2010:

- [1] Real hypersurfaces of an almost hyperbolic Hermitian manifold, Sushil Shukla, Tamkang Journal of Mathematics, 41, **2010**.71-83 ISSN 0049-2930.

- [2] On quasi-Einstein almost hyperbolic Hermitian manifold with quasi-constant curvature, Sushil Shukla, Tamkang Journal of Mathematics, 41, **2010**. 275-283 ISSN00492930.

[3] On semi-symmetric and H-projective curvature tensor on almost hyperbolic Hermitian manifold admitting semi-symmetric metric connection, Sushil Shukla, Shekhar (N.S.) Int. J. Math.2,**2010**.19-25 ISSN0976-4445

**2009:**

[1] Nijenhuis tensor of Almost hyperbolic Hermitian Manifold, Sushil Shukla, Ultra Scientist of Physical Sciences 21(1) M, **2009**, 205-210 ISSN 0970-9150.

[2] Analytic Vector field on an almost hyperbolic Hermitian Manifold, Sushil Shukla, Ultra Scientist of Physical Sciences 21(2) M, **2009**, 469-476 ISSN 0970-9150.

[3] Hyperbolic Almost Complex Structure manifold, Sushil Shukla, Ultra Scientist of Physical Sciences 21(1) M, **2009**, 285-288 ISSN 0970-9150.

[4] Kenmotsu Manifold, Sushil Shukla, Ultra Scientist of Physical Sciences 21(2) M, **2009**, 485-490 ISSN 0970-9150.

[5] Real Hyper surfaces of Almost Hyperbolic Hermitian Manifold, Sushil Shukla, Bull. Cal. Math. Soc,101, **2009**, 71-82 ISSN 0008-0659.

[6] Quasi Einstein Almost Hyperbolic Hermitian Manifold, Sushil Shukla, Shekhar (N.S.) Int. J. Math.1,**2009**,155-162 ISSN 0976-4445.

**2008:**

[1] Almost Hyperbolic Hermitian manifolds, Sushil Shukla, Rev. Bull. Cal. Math. Soc, 16(1), **2008**, 67-78 ISSN 0008-0659.

**2007:**

[1] Second Order Parallel Tensor on Hyperbolic RAC Manifold with P.N. Pandey in Chh. J. Sci. Tech. Vol 3(4), **2007**, 99-106 ISSN 0973-7219.

**2006:**

[1] Birecurrent Almost Complex Manifold satisfying some Curvature conditions with P.N. Pandey in Research Hunt, Vol 1(2), **2006**, 87-99

## **Dr Uday Raj Prajapati**

**2018:**

[1] Certain result involving the product of two mock-theta function of same order, U.R Prajapati, *Wisdom Herald*, 9(2), **2018**, 281-288 ISSN 2231-1483.

[2] On certain transformation and summation formulae for poly basic hypergeometric series, U.R Prajapati, *Universal Review*,9(1), **2018**,237-240 ISSN 2277-2723.

[3] Transformation of Series involving partial mock theta function belonging to the different groups, U.R Prajapati, UGC SN.40965, **2018**,51-54 **ISSN** 2249-6742

[4] Equivalence of Continued fraction involving mock theta function of different order, U.R Prajapati, AD Valorem,5, **2018**,74-79 **ISSN** 2348-5485.

#### **2017:**

[1] Generating relation: For Mock theta Function U.R Prajapati, VMR, 3(4), **2017**,73-79, **ISSN**2395-0390.

[2] Certain result involving the product of two mock-theta function of different groups, U.R Prajapati, Research Highlights,4(4), **2017**,80-84, **ISSN** 2350-0611.

### **Dr Nimisha Yadav**

#### **2019:**

[1] Hall Effect on MHD Flow in a Rotating System. Prem chand Yadav, Journal of Emerging Technologies and Innovative Research., Non-Sci. 6(3), (**2019**), 98-107 **ISSN** 2349-5162.

[2] Effect of Convection and Electric Field Load Parameter on MHD Couette Flow Past A Channel with Highly Permeable Bed. Prem chand Yadav, Journal of Emerging Technologies and Innovative Research. Non Sci. 6(3),( **2019**), 24-31, **ISSN** 2349-5162.

[3 ] Performance Analysis of Variation of Temperature and other Heat Transfer Parameter in Free Convective Rotatory Flow Under Constant Transverse Magnetic Field System., Nimisha Yadav, International Journal of Research and Analytical Reviews., Non Sci., 6(1), (**2019**), 1295-1304 **ISSN** 2348-1269.

#### **2018:**

[1] Effect of Variable Suction on MHD oscillatory flow through a porous medium., Nand Lal Singh, Journal of Emerging Technologies and Innovative Research., Non-Sci., 6(3), (**2018**) ,98-107 **ISSN** 2349-5162.

[2] Flow Field Analysis Near bend of U-shaped Tube. Nimisha Yadav, Journal of Basic and Applied Engineering Research., Non-Sci., 5(3), (2018), 201-205 **ISSN** 2350-0255.

[3] Mathematical modeling and analysis of the spread of AIDS caused by co- infection of HIV, with TB., Raghaw Shukla, International Journal of scientific research and application., Non-Sci., 4(2), (**2018**), 1-15, **ISSN** 2454-5376.

[4] Nature of Wave in Gas particles, Nimisha Yadav, International Journal of scientific research and application., Non-Sci., 4(2), (**2018**), 16-21, **ISSN** 2454-5376.

#### **2008:**

[1] Effect of radiation on free convective flow in porous medium under magnetic field effect, Nimisha Yadav, Acta Ciencia Indica., Non-Sci. 34(2), (**2008**), 949.

## NUMBER OF PAPERS PRESENTED IN CONFERENCES:

Name	National	International
Dr Raj Kumar	10	11
Dr Sushil Shukla	13	21
Dr Uday Raj Prajapati	02	00
Dr Nimisha Yadav	02	01

## NUMBER OF INVITED TALKS:

Name	Number
Dr Raj Kumar	11
Dr Sushil Shukla	2

## AWARDS/HONOURS:

### Dr Raj Kumar:

1. Awarded by State Government for designing syllabus of NEP-2020: Course Title: Analytic Ability and Digital Awareness course is developed for National Education Policy-2020 Common Minimum Syllabus for all U.P. State Universities Co-curricular course: Semester-5 Course Title: Analytic Ability and Digital Awareness.
2. पर्यावरण प्रहरी सम्मान-2022, भारत विकास परिषद्शाखा,जौनपुर द्वारा
3. **Second Prize** on Best poster presentation in International Conference on Recent Trends in Electrical, Electronics and Computer Science Engineering-2020 during 10-11 Jan. 2020.
4. **Outstanding Reviewer Award 2016** by Computers & Mathematics with Applications (**Elsevier**).
5. Awarded **first position** at college level in 10<sup>th</sup> class.

## CONFERENCE/WORKSHOPS/LECTURE SERIES/ PROGRAMS ORGANIZED:

### Dr Raj Kumar:

1. **Organizing Secretary, Webinar** on“ वर्तमान परिप्रेक्ष्य में गाँधी चिंतन की प्रासंगिकता”,on 25<sup>th</sup> Aug, 2020 organized by VBSPU, Jaunpur.
2. **Convener, International Webinar** on Impact of Covid-19 on *Indian Economy: Challenges and Opportunities*, On June 09, 2020 organized by Department of Mathematics and Financial Studies

3. **Member** of Organizing Committee of a **national webinar** on *Intellectual Property Rights: Protection of Intellectual Property and Way Forward* during 22-23 May, 2020 and organized by Intellectual Property Rights Cell, VBS Purvanchal University Jaunpur.
4. **Convener, International Conference** on *Recent Trends in Electrical, Electronics and Computer Science Engineering-2020* during **10-11 Jan. 2020** organized by UNSIET
5. **Co-chair, an international conference** “*International Conference on Ultrasonics and Materials Science for Advanced Technology*” (ICUMSAT- 2019) during **16-18 November 2019** and jointly organized by Prof. Rajendra Singh Institute of Engineering of Physical Study and Research, VBS PU Jaunpur and Ultrasonics Society of India, New Delhi, India.
6. **Co- Convener** of **inaugural ceremony** of “कौशल विकास एवं प्रशिक्षण केंद्र” on 16/9/2019.
7. **Co- Convener** of **one day national seminar** on “विश्वविद्यालयीय शिक्षा की स्वायत्तता” on **14 August 2019**.
8. **Convener of National seminar** entitled “*Samsamyik Pridrasya men Ekatm Manavvad*” on 22th September, 2018 on the occasion of inaugural day of Pt. Deen Dayal Shodh Peeth and organized by V.B.S. Purvanchal Univ. Jaunpur.
9. **Convener** of a **National seminar** entitled “*Ekatm Manavdarshan Ka Yugbodh* (एकात्ममानवदर्शनकायुगबोध)” on 25<sup>th</sup> September, 2019 in the campus of V.B.S. Purvanchal Univ. Jaunpur.
10. **Convener** of a **National workshop** entitled “*Growth of Science & Technology in the Campus of Purvanchal University (GSTCPU-2017)*” during 8-10<sup>th</sup> September, 2017.
11. **Convener** of **Workshop** entitled “*Communication Skills*” organized by V.B.S. Purvanchal University, Jaunpur during 17-18<sup>th</sup> September, 2016 for all students of campus.
12. **Convener** of **Lecture series** entitled “**Numerical Techniques and Programming in MATLAB**” during 22-28<sup>th</sup> July, 2016 for UG students.
13. **Convener and Co Convener** of “**National Science Day (NSD-2017-2020)**” organized on the occasion of **National Science day** 28 Feb. 2017, 2018, 2019, 2020
14. **Co Convener** of “**National Youth Day**” celebration on 12<sup>th</sup> January, 2019 on the occasion of 146<sup>th</sup> Jubilee of Swami Vivekanand in the campus of V.B.S. Purvanchal Univ. Jaunpur.
15. **Co-Convener** of “**मतदाता जागरूकता अभियान**” in the V.B.S. Purvanchal University, Jaunpur campus on 18<sup>th</sup> Feb., 2017

16. **Convener** of Workshop “**Numerical Computation Using MATLAB**” during 26-30 November, 2015 for all CSE/IT students of campus.

17. **Convener** of Workshop on “**Better Engineer**” during 10-13 November, 2010.

### **Dr Sushil Shukla**

1. **Member** of Organizing Committee of **International Conference** on *Recent Trends in Electrical, Electronics and Computer Science Engineering-2020* during **10-11 Jan. 2020** organized by UNSIET.
2. Organizing Secretary of **National Conference** on Differential Geometry and it’s Applications (*DGACON-2018*) during **3-5 Aug. 2018** organized by NGBU, Allahabad.

### **NO. OF COURSES/SUMMER INSTITUTE/TRAINING PROGRAMME/ FDP ATTENDED:**

Dr Raj Kumar: 22

Dr Sushil Shukla: 10

Dr Uday Raj Prajapati: 02

Dr Nimisha Yadav: 05

### **MEMBERSHIP OF PROFESSIONAL BODIES/SOCIETIES:**

#### **Dr Raj Kumar:**

- Life Member Ship of Indian Mathematical Society
- Annual membership of World Physics Association (WPA) From Nov. 2015 to Dec. 2016

#### **Dr Sushil Shukla:**

- International Academy of Physical Sciences (Member. No. N0962)
- Indian Mathematical Society
- International Association of Engineers (Member No. 102242)
- Indian Science Congress Association (Member No. A2919)

### **PORTFOLIO OF FACULTY MEMBERS:**

#### **Dr Raj Kumar (All positions held in V.B.S.P.U.)**

- i. **Member** Executive Council from May 2021-May 2022.
- ii. **Incharge** Media Cell, VBS PU Campus
- iii. **Member** IPR Cell
- iv. **Nodal officer** Kaushal Vikas & Prashikshan Kendra at campus from last 1yr
- v. **Chief Warden** from last three years
- vi. **Member of Academic Council** from last two years
- vii. **Coordinator**, Purvanchal University Combined admission test (PUCAT)-2019,2016, member PUCAT 2017-18
- viii. **Assistant Dean of Students Welfare** for two Yrs (2014-2016)

- ix. **Programme Officer:** Unit-III of NSS for 2 Yrs (2014-2016)
- x. **Head, Department of Mathematics** during last 13yrs (2004-2011, 2014-till date)
- xi. **Convener, Board of Studies,** Department of Mathematics during last 13yrs (2004-2011, 2014-till date)
- xii. **Coordinator, Technical cell** (Result preparation cell for the whole campus courses),
- xiii. **Coordinator, B. Tech. OBC Scholarship Cell,** for 5 yrs (2005-2010)
- xiv. **Organizing Secretary, Sports meet of campus** from 2017 to July 2020.
- xv. **Assistant Proctor from last 13 years**
- xvi. **Member of internal screening committee** for regular teacher's post applications.
- xvii. **Dy. Coordinator,** UGC Sponsored **Remedial Coaching** for SC/ST/OBC students, etc. for 2 yrs.
- xviii. **Dy. Coordinator,** Academic Activities of B.Tech First year from 2014 till date.
- xix. **Member, Internet maintenance committee**
- xx. **Member of E-tendering committee, Infrastructure committee, Auction of disposable materials committee** and some others.

### **Dr Sushil Shukla:**

- Member of Proctorial Board - U.C.E.R. Allahabad
- Class In Charge- I.I.E.T. Bareilly
- Dean –Academics – C.S.M.C.E.T. Allahabad
- Class-In Charge- BBDIT Ghaziabad

### **PARTICIPATION OF STUDENTS AND FACULTY IN EXTENSION ACTIVITIES.**

- I. Setting up a Skill Development & Training Center at the University, we are providing high quality skill training to the youth in Jaunpur and Eastern UP in the trades that are in high demand by industry. Dr. Raj Kumar (Head of Deptt.) is nodal officer at the center.
- II. **Deptt. actively participates in, ``एक छात्र एक पेड़ अभियान`` through plantation and caring of plants in VBS PU Campus to upgrade its greenery.**
- III. B. Tech Students provides fully free teaching to financially poor students from nearby villages of the campus since **Feb. 2014**. They have initiated a free coaching Institute **PRERNA** running in a neighboring village of VBS PU Campus. **Coaching enriched awareness in nearby villages. More than 1200 students benefited from the coaching.** Dr. Raj Kumar (Head of Deptt.) works as a coordinator of the coaching.

### **FUTURE PLANS OF THE DEPARTMENT:**

- Overall development of our campus
- Department has planned to apply AICTE/DST/SERB funded major research project to create research environment in engineering.