

# **Annual Report 2018-19**



## **Rajkiya Engineering College Banda**

(Formerly Dr. Bhim Rao Ambedkar Engineering College of Information Technology)





## Contents

Particulars	Page No.
From the Director's Desk	3
About the Institute	4
Institute's Vision and Mission	6
Governance / Organization Structure	7
Academic Calendar	10
Infrastructure: Academic, Library, Computer Centre, Residential, Hostels	11
Department's Profile with Infrastructure & Facilities	13
Programmes Offered (UG, PG, PhD)	64
Students Strength (UG, PG, PhD): Sanctioned Intake & Actual Intake), Category and Gender Wise	65
Exam Result Analysis	66
Transition Rate of 1st Year UG Students	68
Details of Sanctioned & Filled Posts	70
GATE Qualified Students Data	72
Training Programmes Held for Teachers & Staff	73
Training Programmes /Internship for Students	75
Student's Internship	78
Campus Placement Data	81
Sponsored R&D Projects in-Hand	84
Candidate Completed/Doing PhD	86
Journals and Conferences Publications	87
Start-ups and Innovations	92
Collaborations	98
Curricular and Co-curricular Achievement	99
Alumni Meet	100
Induction Programme	101
Extra-curricular Activities	102
Ranking and Recognition of REC Banda	108
Awards & Achievements Bagged by our Students	110
Financial Information: Funds Received & Spent	112



## *From the Director's Desk*



Rajkiya Engineering College Banda is on a fascinating path of growth and development. It has already established itself as one of the top technological institutions in Uttar Pradesh, but that is just the tip of the iceberg, as compared to the huge progress the institute is making. We are advancing the institute's tradition of excellence in Engineering and Technology Education through high-quality programmes in teaching, research, on-site industry executive training, and service. We are fortunate to have a talented, highly committed teaching and support staff to ensure the best learning environment as possible.

Our faculties are renowned scholars and accomplished practitioners who are actively engaged in the academic excellence and in innovative research ideas of the modern world. Each collaboration is not an additional feather in our cap but an integral part of our growth strategy. We have made a stunning beginning, and there is a long way to go, but I am sure with the active cooperation of all our stakeholders, students, faculty, staff, employees, collaborators, parents of the students, governmental organizations, media and public at large, we will be able to fulfill the motto of REC Banda.

**Prof. S.P.Shukla**  
Director (REC, Banda)



## About the Institute

Rajkiya Engineering College Banda formerly known as Dr. Bhim Rao Ambedkar Engineering College of Information Technology was established by the Government of Uttar Pradesh in the year 2010 with three branches, Electrical Engineering, Mechanical Engineering, and Information Technology with an annual intake of Sixty (60) in each branch. The college is an affiliated institute of Dr. A P J Abdul Kalam Technical University, Lucknow (Formerly Uttar Pradesh Technical University, Lucknow). Since its inception it was running in the campus of BIET, Jhansi. In July 2015 it moved to its own fully residential campus located at Atarra, Banda.

All necessary state-of-the-art infrastructures as per the norms of AICTE have been developed at the institute to enable the millennials to dawn the role of future leaders, managers, researchers and productive team players in the field of science and technology. The institute intends to ensure holistic growth of students in order to make them accountable for societal and national elevation and amelioration. All offices are fully equipped with electronic infrastructure required for communication and reprographic facilities at par with any other institute of national importance.

The teaching and learning take place in various fully air-conditioned Smart Class Rooms (SCRs) equipped with modern teaching aid, such as Touch Screen Podium, Interactive White Boards, Short Throw Projector along with Audio Visual facilities. The college also has 500 KVA generator unit capable of providing electricity to the whole campus including academic building, workshop, hostels, street lights, etc.

The qualified and experienced thirty-six outstanding faculty members, latest equipment, Hi-end computers, teaching-aids, multimedia, wi-fi connectivity required for modern-day teaching create an edge over other engineering institutes. The hostels, the common room equipped with fitness equipment, Student Activity Centre (SAC), canteen, grocery store, a guest house, the infirmary conjure up a spell of being the most ideal campus.

The institute has been selected under TEQIP-III project. Under this project, the college received a grant of Rs.10 Crore from 2017 to 2020. The objective of TEQIP-III is to improve the quality and



equity in engineering institutions in focus states. Other objectives include system-level initiatives to strengthen sector governance and performance to improve the policy, academic, and management practices of the college. Under DDQIP scheme the institute has also been granted Rs.10.00 crore on 5 August 2017 for three years.



## *Vision*

To impart quality education in various fields of engineering and technology to develop the institute into a centre of academic excellence.

## *Mission*

To develop the students as proficient technocrats who are professionally skilled and socially accountable through quality education by providing the state-of-the-art infrastructure and environment.



## *Governance /Organization Structure*

### **Organization Structure of REC-Banda**

#### **a. Academic And Administrative**

- (1) Director

#### **b. Academic**

- (1) Professor including Professor, Training and Placement.
- (2) Associate Professor, if any,
- (3) Assistant Professor
- (4) Workshop Superintendent
- (5) Assistant Workshop Superintendent
- (6) Teaching/ Research Assistant
- (7) Such other academic staff as may be decided by the board.

#### **c. Teaching Supporting**

- (1) Computer system Manager
- (2) Computer Programmer
- (3) Junior Computer Programmer and Network Engineer
- (4) Technical Assistant
- (5) Demonstrators
- (6) Workshop Instructors/Instructors
- (7) Computer Operators
- (8) Computer Data Operators

#### **d. Technical**

- (1) Foreman
- (2) Supervisor (Workshop)
- (3) Mechanics Grade-A
- (4) Horticulture Assistant, if any
- (5) Draftsman and
- (6) Such other technical staff as may be decided by the board.

#### **e. Administrative (Non-Teaching)**

- (1) Registrar
- (2) Deputy Registrar
- (3) Assistant Registrar/Head Assistant
- (4) Accounts Officer
- (5) Audit Officers, if any
- (6) Stores or Purchase Officer, if any
- (7) Estate Officer, if any



- (8) Medical Officer (Male/Female), if any
- (9) Engineer (Executive/ Assistant)
- (10) Librarian
- (11) Deputy Librarian, if any
- (12) Assistant Librarian, if any
- (13) Physical Training Instructor, if any
- (14) Such other administrative Staff as may be decided by the board.

### **Board of Governors @ REC- Banda**

The Board shall be composed of:

(i)	Academician/Industrialist nominated by Government of U.P.	<b>Chairman</b>
(ii)	Principal Secretary/ Secretary, Technical Education Deptt. U.P.	<b>Vice-Chairman</b>
(iii)	Secretary, Finance Deptt, U.P. or his nominee, not below the rank of Joint Secretary.	<b>Member</b>
(iv)	Vice-Chancellor of the University, to which the College/Institute is affiliated.	<b>Member</b>
(v)	Director, Indian Institute of Technology, Kanpur.	<b>Member</b>
(vi)	Director, Indian Institute of Technology, (BHU), Varanasi.	<b>Member</b>
(vii)	Director, Directorate of Technical Education, Uttar Pradesh Kanpur.	<b>Member</b>
(viii)	A Nominee of the All India Council of Technical Education.	<b>Member</b>
(ix)	One eminent technologist/ engineer having specialization in the field advent to the Institute to be nominated by the Board.	<b>Member</b>



- |        |  |                                   |
|--------|--|-----------------------------------|
| (x)    | One Head of the Department of the Institute/<br>Institution not below the rank of Professor to be<br>nominated by the Board for one year by rotation in<br>order of seniority. | <b>Member</b>                     |
| (xi)   | Three eminent persons in the field of Technical<br>Education to be nominated by the State Government.  | <b>Member</b>                     |
| (xii)  | One eminent person from industry to be nominated by<br>the State Govt.   | <b>Member</b>                     |
| (xiii) | One person from S.C. category to be nominated by the<br>Chairman Governing body from amongst reputed<br>teachers/ educationist/ Industrialist.                                 | <b>Member</b>                     |
| (xiv)  | One person from O.B.C. category to be nominated by<br>the Chairman Governing body from amongst reputed<br>Teachers/ Educationist/ Industrialist.                               | <b>Member</b>                     |
| (xv)   | Director/ Principal of the Institute/ College.   | <b>Member</b><br><b>Secretary</b> |



## Academic Calendar



**DR. A.P.J. ABDUL KALAM TECHNICAL UNIVERSITY, UTTAR PRADESH**  
Jankipuram Vistar Sector- 11 , Sitapur Road, Lucknow, 226031, Uttar Pradesh

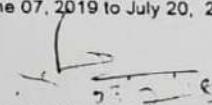
### ACADEMIC CALANDER

FOR B. TECH./B.PHARM./B. ARCH./B.H.M.C.T./BFAD/MBA/MBATM/MBA-INT/MAM/MCA/MCA-DD/MCA-  
INT/BFA & M. Tech./M. Pharm./M. Arch.  
ACADEMIC SESSION 2018-19

S. No.	Particulars	Dates	
		Odd Semester For I, III, V, VII & IX Semester	Even Semester For II, IV, VI, VIII, & X Semester
1.	Commencement of Classes session 2018-19	August 1, 2018	Jan 21, 2019
2.	Last date of submitting admission list of students to University (for newly admitted student)	Aug 31, 2018	
3.	Last date of submitting Enrollment form /Exam Form for regular & carry over exams.	Oct 31, 2018	
4.	Last date of Submitting Examination fee for both semesters and examination/carry over examination fee	Nov 15, 2018	
5.	Last date of submitting sessional marks of Theory & Practical Sessional to University.	Dec 10, 2018	May 11., 2019
6.	End Semester Theory Examination	Dec 11, 2018, to Jan 05, 2019	May 12, 2019 to May 30, 2019
7.	End Semester Practical Examination	Jan, 06, 2019 to Jan 12, 2019	May 31, 2019 to June 06., 2019
8.	Last Date of Submission of PE Mrks.	Jan 15, 2019	June 15, 2019
9.	Evaluation of Answer sheets	Dec 16, 2018, to Jan 15, 2019	May 16, 2019 to June 15, 2019
10.	Summer Training		June 07, 2019 to July 20, 2019
11.	Winter Vacations/ Summer Vacation	Jan 13, 2019, to Jan 20, 2019	June 07, 2019 to July 20, 2019
12.	Commencement of Classes session 2019-20	For I, III, V, VII & IX Semester August 01, 2019	

**Note:** The Institute should ensure that at least two class test are conducted after completing 1/3<sup>rd</sup> & 2/3<sup>rd</sup> syllabus respectively. All students will be required to appear in both first and second class tests. If for any reason beyond the control of students such as illness, tragic incident in family, the student fail to appear in any test, it will be responsibility of Principle/ Director of Institute to arrange class test for such students. However, if the student fails to appear in first class test, his left over class test will be conducted before second class test and in case of second class test at least one month before the start of end semester theory examination. The duration of class test will minimum one hour for each class test, 70% attendance at 1<sup>st</sup> test and 75% attendance at second class test are required. In case attendance in short parents are be informed accordingly on monthly basis.

1. The Institute shall ensure 540 hours of teaching per semester. If required the director/principal shall arrange extra classes, on weekends/ holidays.
2. The Directors/Principal of Institute shall submit attendance of students to University after 1<sup>st</sup> and 2<sup>nd</sup> class tests and shall ensure that no student is allowed to appear in the examinations who has not attained the minimum required attendance as per norms prescribed in relevant ordinances. It will be obligatory on the part of Director/Principal of Institute to detain such students and their admit cards will not be issued to them. A list of students detained from appearing in University Examination(s) be submitted to University and their Examination centre before commencement of theory examination.
3. The teacher who are assigned evaluation duty during vacation shall be entitled for earned leave as per rules and duty leave for other examination works.
4. The induction programme for 1st year B.Tech student shall be between Aug. 01, 2018 to Aug. 21, 2018.
5. Summer training internship for 1st year B.Tech student shall also be held between June 07, 2019 to July 20, 2019.

  
Controller of Examination



## *Infrastructure*

REC's Awe-inspiring infrastructure provides the students with an excellent environment to pursue their academic passion and for outstanding academic delivery. The lush green campus is dotted with hi-tech laboratories and modern buildings. The campus offers a fusion of environment, resources and support to maximize the quality of the student learning experience.



**Library:** There are more than 10000 books, magazines and journals in library. Book bank facility is also provided to students. The students and faculty can access more than 400 international journals and periodicals.



### **Academic Building:**

Ground Floor: Mechanical Engineering Department.  
First Floor: Electrical Engineering Department.  
Second Floor: Information Technology Department.  
Third Floor: Applied Sciences & Humanities Department





### Hostels:

- a. Aryabhatta Hostel: Triple seated 69 rooms
- b. Ramanujam Hostel: Triple seated 69 rooms
- c. C. V. Raman Hostel: Triple seated 69 rooms
- d. Mandakini Hostel: Triple seated 69 rooms
- e. Transit Hostel: Triple seated 69 rooms

**Student Activity Centre:** It has a hall for Table Tennis and four rooms for Gymnasium and playing carom.



### Residence:

- a. Type V- 1 Number
- b. Type IV- 4 Numbers
- c. Type II- 24 Numbers (Under Construction)
- d. Type I- 4 Numbers





## *Department's Profile with Infrastructure and Facilities*

### **INFORMATION TECHNOLOGY DEPARTMENT**

#### **About the Department**

The department of Information Technology with its cohesive team of faculty members offers a sound programme at the UG level. It is the department on which the former name of the college was placed. It offers B.Tech programme. The department is fully air conditioned and is well equipped with high end computers and latest softwares. All computing resources are interconnected with high speed internet. The campus wide networking facility is also managed by the department. The department has a well-qualified faculty and several well equipped laboratories catering to the needs of not only the IT department but also students from the other departments. The Department develops IT Graduates having good problem-solving capabilities, communication skills and habit to learn new technologies. Apart from prescribed university curriculum, focus is on practical and skill-based training to ensure that students grow according to changing market scenario. The engineering graduates of Information Technology from REC by utilizing the following platforms become job fit and get opportunities as IT Professionals, Entrepreneurs, Researchers, Innovators and Academic Administrators. Department curriculum activities related to the field are:

- Industrial Visit/ Internship Programme
- Training Programmes/ Workshops
- Personality Development Programme (PDP)
- Centers of Excellences & Innovations
- National Level Project Competition



## Vision

To establish centre of educational excellence in Information Technology and to produce competent engineers.

## Mission

### Department provides:

1. State-of-the-art computational facility for the teaching-learning process.
2. Learned and qualified faculty with committed teaching goals.
3. Ethical and value education by promoting activities addressing societal needs.

### Programme Educational Objectives

#### Our graduates:

1. Will possess the required skill set of knowledge and modern IT tools to excel and sustain in chosen career path in the field of Information Technology.
2. Will pursue higher studies, demonstrating research abilities.
3. Will take up entrepreneurship for the benefits of society.

### Programme Specific Outcomes

#### Our graduates will be able to:

1. Apply Software Engineering practices in IT related projects development to deliver the quality products.
2. Employ critical thinking, modern computer languages, environments, and platforms for solving complex IT problems.



## Class Rooms

Total two smart class rooms are available including board, smart board, smart podium, camera and sound system. Here faculty can use normal board for Chalk and Talk as well as use smart board for Power point presentation.

## Laboratories

Total 5 labs are present including the computer centre, one of the biggest lab. The labs are equipped with a 100 mbps switched network with a star topology. The lab is connected to the campus network through a router and fibre optic cable. The Department has following computer lab facilities:

### Computer Centre

It is a general observation that students at the entry level of undergraduate programmes face some difficulties to understand about the course. This lab provides practical exposure and on-hand working environment to such students, The computer Center has over 60 computer made available in central air conditioned laboratory of the college building. They are fully networked with branded HP (i3) systems and server with one Laser Printer. High internet speed of 100 Mbps, broadband internet connectivity has been provided in main computer center with at least one faculty and technical staff to guide them.





### The Hardware Specification of Available computers

- Intel i3 5th generation x64 Processor
- 1 TB Hard Disk
- 4 GB RAM
- An integrated Cabinet with speakers and other accessories.

### Software Specification

- Code Block, Dev CPP, Turbo C++.
- JDK latest version.
- MATLAB
- Net beans

### Subject practice

- Programming Lab
- Algorithms Lab
- Operating Systems Lab
- Data Structure Lab
- Design and analysis of algorithm Lab

## Computer Lab 1

This LAB is for design and implementation of various computer applications. In this LAB students work on new Technologies and expert in contemporary technologies like Database Management services and Web designing. The Lab is fully centralized air conditioned and well furnished. This Lab consists of one server and 30 computers with one printer. Lab is equipped with a wall mount projector.





### The Hardware Specification of Available computers

- Intel i3 5th generation x64 Processor
- 1 TB Hard Disk
- 4 GB RAM
- An integrated Cabinet with speakers and other accessories.

### Software Specification

- Postgre-SQL
- PHP server (XAMP Server)
- MYSQL
- Microsoft SQL Server

### Subject practice

- Database Management Systems Lab
- Software Project Work Lab

## Computer Lab 2

The Department has a well-equipped, fully centralized air conditioned, well-furnished Project Lab. This LAB consists of 30 Machines and a smart Board to fulfill the presentation needs.

### Computer Specification

- i3 5th generation x64 Processor
- 1 TB Hard Disk
- 4 GB RAM
- An integrated Cabinet with speakers and other accessories.

### Software

- Linux OS
- MATLAB
- Anaconda Navigator
- R Studio





- Android Studio
- NS-2
- ArgoUML, UML Umbrello

#### Subject Practice

- Project Lab
- Software Engineering Lab
- Object Oriented Techniques Lab

#### Computer Lab 3 (CAD Laboratory)

The CAD Laboratory is a central facility of the institute where all undergraduate students, and faculty members- can work with the sophisticated 2-D & 3-D design and analysis software. They can learn to use the latest software and carry out their research work. The CAD Laboratory has a total number of 30 computers with the latest configurations connected with a high-end server through switched networking.



#### Computer Specification

- i3 5th generation x64 Processor
- 1 TB Hard Disk
- 4 GB RAM
- An integrated Cabinet with speakers and other accessories.

#### The Software available in the CAD Lab

- AutoCAD



- ANSYS -11
- Fusion 360

#### Subject Practice

- Mechanical Department Labs

### **Computer Lab 4 (Simulation Lab)**

In this LAB we simulate various electrical as well as electronic circuits. For simulation, we use various tools like MATLAB and ANSYS. In this LAB use MATLAB software for interpret different problems related to equations and related computational tasks.

#### Computer Specification

- i3 5th generation x64 Processor
- 1 TB Hard Disk
- 4 GB RAM
- An integrated Cabinet with speakers and other accessories.

#### The Software available in the Lab

- MATLAB

#### Subject Practice

- Switching Theory and Logic Design
- MATLAB Programming



## Computer Lab 5

This High performance Computing Lab consists of 30 computers in which latest and required software are installed on the computers.



### Computer Specification

- I5 8<sup>th</sup> generation, 64 bit OS,
- x64 Based Processor
- 1 TB Hard Disk
- 8 GB RAM
- An integrated Cabinet with speakers and other accessories.

### Software

- Anaconda Navigator
- R Studio
- Android Studio
- NS-2
- Anaconda Navigator

### Subject Practice

- Artificial Intelligence Lab
- Computer Network & Information Security Lab
- Compiler and Automata Lab
- Data Mining Lab



## Computer Lab 6

This Web Application Development Lab consists of 30 computers with higher configuration. In this Lab, students perform experiments related to web technology. This lab consists of the latest and advanced software for Web applications.



### Computer Specification

- I5 8<sup>th</sup> generation, 64 bit OS,
- x64 Based Processor
- 1 TB Hard Disk
- 8 GB RAM
- An integrated Cabinet with speakers and other accessories.

### Software

- Atom IDE
- Notepad++

### Subject Practice

- Web Designing Lab
- Web Technology Lab

### Additional Infrastructure

#### Server Room

1. Department has one server room which is full with different kind of servers. Their configurations are: Windows server 2012 R2, Intel Xeon processor, 9 TB HDD, 64 GB RAM.



- Server 1 (Mechanical department): The following software are installed.
  - ◆ ANSYS 15
  - ◆ IIS, Xamp Server
  - ◆ Solid Works
- Server 2 (Electrical department): Software MATLAB is installed
- Server 3 (Information Technology): The following software are installed.
  - ◆ Orell language software
  - ◆ UTP Plus for Video Conferencing
  - ◆ Xamp Server
  - ◆ IIS
  - ◆ FTP Server
- Server 4 (Information Technology): College ERP is configured.

2. Apart from this NPTEL Lecture series are also uploaded in servers.
3. The server room also contains two LCDs which display the footages of approximate 200 cameras.

### **Online UPS/Battery Backup**

An array of 80 uninterruptible power supply, UPS or battery/flywheel backup, is maintained in our college that provides emergency power to a load when the input power source, typically mains power, fails.

This panel of UPSs used to protect hardware such as computers, data centers, telecommunication equipment or other electrical equipment where an unexpected power disruption could cause injuries, fatalities, serious business disruption or data loss. The labs are fully air conditioned with UPS protection against power outages.



**List of Short Term Courses, Workshops, Seminar & Course-Modules organized by the Department**

<b>SL. NO.</b>	<b>NAME OF THE FACULTY</b>	<b>TITLE OF THE ACTIVITY</b>	<b>DATE</b>	<b>NO. OF PARTICIPA NT</b>	<b>ACTIVITY TYPE</b>
1	Dr. Amod Tiwari REC, Sonbhadra	Expert Talk on "Image Processing"	10/08/2018	50	EXPERT TALK
2	Mr. Brijesh Mishra Mr. Rohit from Industry	Workshop on "Python"	12/09/2018	55	WORKSHO P
3	Dr. Yuvaraju B.N. Professor in the Department of Computer Science & Engineering, NIE, Mysore.	Expert Talk on "Soft Computing"	10/10/2018	50	EXPERT TALK
4	Prof. Raghuraj Singh, HBTU, Kanpur Prof. Bhaskar Biswas IIT, BHU Prof. Sanjai Gupta BIET, Jhansi Dr. Vandana Dixit Kaushik, HBTU Kanpur Prof. K Raj HBTU, Kanpur Dr. Prabhat Verma HBTU, Kanpur Prof. Nilendra Badal KNIT, Sultanpur Mr. Shashank NIE, Mysore	Faculty Development Programme on Applications of Artificial Intelligence	30 <sup>th</sup> Oct. to 3 <sup>rd</sup> Nov. 2018	55	FDP
5	Dr. Akash Agrawal (REC, Kannauj)	Economics for Engineers	13/09/2018	50	EXPERT TALK

**Workshop, FDP and Conferences Attended by Faculties**

<b>S.No</b>	<b>Workshop, FDP and Conferences Attended</b>	<b>Organized By</b>	<b>Date</b>	<b>Duration</b>
1	Workshop on Big Data Analysis Using Hadoop	REC Azamgarh under TEQIP- III	9 <sup>th</sup> – 13 <sup>th</sup> October, 2018	One week (05 days)
2	FDP on "Applications of Artificial Intelligence"	REC Banda Under TEQIP-III	30 <sup>th</sup> – 3 <sup>rd</sup> October, 2018	One week (05 days)
3	Short Term Course on Recent Trends in Power System Management	REC Banda Under TEQIP-III	27 <sup>th</sup> November to 1 <sup>st</sup> December 2018	One week (05 days)
4	Workshop on Applications of MATLAB in Engineering	REC Banda under TEQIP-III	12 <sup>th</sup> – 16 <sup>th</sup> Feb., 2019	One week (05 days)



5.	Short Term Course on Impact of Recent Advances in Applied Science on Engineering (IRAASE-2019)	REC Banda under TEQIP-III	19 <sup>th</sup> to 23 <sup>rd</sup> February 2019	One week (05 days)
5	2nd International Conference on Advanced Computing and Software Engineering (ICACSE-2019)	KNIT Sultanpur	8 <sup>th</sup> – 9 <sup>th</sup> March, 2019	02 days
6	International workshop on “Emerging Technologies for Economic and Social Impacts in India”	REC Banda under TEQIP-III	11 <sup>th</sup> – 15 <sup>th</sup> March, 2019	One week (05 days)
7	FDP on “Machine Learning for Engineering and Science Applications”.	NPTEL-AICTE	Jan. – April 2019	12 Weeks (1½ FDP)
8	Collaborative Research Scheme: Knowledge Incubation for TEQIP-III	SPIU-UP Lucknow under the aegis of NPIU	13 <sup>th</sup> May 2019	01 day
9	Short-term course on “Machine Learning for Engineering Applications”	IIT Delhi under TEQIP-III	24 <sup>th</sup> to 28 <sup>th</sup> June 2019	05 days
10	Twinning programme on “Intensive Training in Artificial Intelligence and Machine Learning”.	NIE Mysuru under TEQIP-III	17 <sup>th</sup> – 19 <sup>th</sup> June 2019	03 days

### Online Course Completed:

S. No	Course	Organized	Duration	Remark
4.	Machine Learning for Engineering and Science Applications.	NPTEL	January to April 2019	Completed
5.	Learn C++ in 90 minutes.	Electronics & ICT Academy IIT Kanpur	January to April 2019	Completed



## ELECTRICAL ENGINEERING DEPARTMENT

### About the Department

The Department of Electrical Engineering at Rajkiya Engineering College Banda offers a vibrant environment for undergraduate education in Electrical Engineering. The department has well established laboratories for Power System, Electrical Machines, Power Electronics & Drive, Digital Electronics, control, Instrumentation, Communication system and Microprocessor.

The Department has well qualified faculty, most of them have their Master and Ph.D degree from IITs, NITs, and Central & State Technical Universities.

The Department of Electrical Engineering at Rajkiya Engineering College Banda was started in the year 2010. Department offers B. Tech (Electrical Engineering) with a yearly intake of 60 students. There is a provision of 12 lateral entry admissions in to second year on Diploma/B.Sc. basis. The department has grown not only in terms of student and faculty strength, but also in improving the laboratory facilities for the teaching and research purposes. Thus, the department has dedicated and state of the art teaching / research laboratories. The department is recognized for excellence in research, teaching and service to the profession. The faculty members have strong sense of responsibility to provide the finest possible education for undergraduate students.

### Vision

1. Impart quality education to create technocrats and entrepreneurs to meet dynamic needs of industry expectations.

### Mission

1. To deliver quality education in emerging fields of Electrical Engineering to empower the students to meet industry standards.
2. To enrich with the latest developments through seminars, expert lectures, workshops, industrial visits, and industrial trainings.
3. To provide ethical and value education by promoting activities addressing the societal needs.



## Programme Educational Objectives

Our graduates will be:

1. Able to possess the required skill set of knowledge and modern software & hardware tools to excel and to sustain in chosen career path in the field of Electrical Engineering.
2. Able to pursue higher studies, demonstrating research abilities.
3. Able to take up entrepreneurship for the benefits of society.

## Programme Specific Outcomes

Our graduates will be:

1. Able to analyze and implement power system, electrical machines and control systems.
2. Able to demonstrate ability in the use of software & hardware required for Electrical Engineering profession.

## Laboratories

The Department has nineteen following laboratories:

### Basic Electrical Engineering lab

Basic Electrical Engineering Laboratory is used with the institute all course Electrical Engineering, Mechanical Engineering, Information Technology. This lab can accommodate about 60 students in a semester. The experiments are designed to expose students to the practical executions of the fundamental theories of Electrical Engineering.





## Network Lab

The objective of the Network lab is to expose the students to electrical circuits and give them experimental skill. The purpose of lab experiment is to continue to build circuit construction skills using different circuit element. It also aims to introduce MATLAB a circuit simulation software tool. It enables the students to gain sufficient knowledge on the programming and simulation of Electrical circuits. On the completion of Electrical Circuit and simulation practical course, the student will be able to attain the following:

1. Familiarity with DC and AC circuit analysis techniques.
2. Analyze complicated circuits using different network theorems.
3. Acquire skills of using MATLAB software for electrical circuit studies.
4. Determine the self and mutual inductance of coupled coils.



## Power Systems Lab

This laboratory is designed to give students hands-on experience on different equipment of electrical power system. This is an advanced laboratory to carry out modeling, simulation and analysis of power system equipments. Students can practically verify several concepts and procedures learned in power system modeling and analysis.



### **Electromechanical Energy Conversion Lab-I**

The objective of the this Laboratory is to impart knowledge about characteristics and behavior of the DC Machines, operation of transformers, operation of DC machines and give them experimental skill, familiarize with the constructional details of different types, working principle and their performance. It also provides the essential facilities to the students to augment their concepts about the fundamentals of rotating machines. It is well equipped lab to provide experimental and hands-on experience to the detailed study of characteristic and operational aspects of DC electrical machines.





### **Electromechanical Energy Conversion Lab-II**

This laboratory is designed for students to perform experiments on Induction motors and Synchronous machines. The main objective of this laboratory is to impart knowledge about characteristics and behavior of the AC Machine, synchronous and asynchronous machines and give them experimental skill, familiarize with the constructional details of different types, working principle and their performance. This lab consists of machines and all are mounted in industrial type of assembly to give the students industrial feel. Well established with all kinds of motors and variable frequency drives (VFDs). The lab has moderate machines and students are using for project and research work also.



### **Electrical Instrumentation Lab**

The motto of this Laboratory is to reinforce the students with an adequate work experience in the measurement of different quantities and also to expertise in handling the instruments involved. The basic operations of sensors and the process where it might be used, practically realized in the laboratory. It also provides facilities to train the students in the measurement of displacement, resistance, inductance, torque and angle etc., and to give exposure to AC, DC bridges and transient measurement.



### **Electrical Measurement Lab**

The aim of this is different electrical and electronic parameters such as voltage, current, power, energy, resistance, inductance, capacitance etc. are performed in Electrical Measurement laboratory. Also to understand the constructional features of different indicating type instruments like PMMC, MI, Electro-dynamometer etc. are described in the instrument workshop. In addition to the measurement, calibration of instruments such as ammeter, voltmeter, wattmeter etc. are performed in this laboratory. Measurement of current and voltage using instrument transformer is an important feature of this laboratory.





### **Power Electronics lab**

The aim of the Power Electronics laboratory is to study the characteristics of switching devices and its applications in rectifiers, AC voltage controllers, inverter and choppers. It also acquaint with the application of electronic devices for conversion, control and conditioning of electric power. Further it aids the students to acquire an overview of different types of power semiconductor devices and to cognize the operation, characteristics and performance parameters of controlled rectifiers. The principle of operation, switching techniques, modulation techniques and harmonic reduction techniques in PWM inverters are studied in the lab. It also provides experience with common components such as motors, batteries and power semiconductors. The lab facilitates faculty and students who are conducting research, industry sponsored projects in power converters in particular and electrical energy conversion in general.



### **Numerical Technique Lab**

The aim of this lab is to reinforce the students with MATLAB, linear equation, basic matrix operation, time response of R-L-C circuits.



### Electrical Drives Lab

The first-hand knowledge in electrical circuits, AC & DC Machines and Drives is acquired. The lab is equipped with various motors along with their drives and measuring instruments. The characteristics of motors and generators are studied practically.





### PLC Lab

The primary objective of the Programmable Logic Controller lab is to familiarize students with how signals from input devices (i.e. switches, sensors, etc.) can interface with PLC units in order to invoke certain actions (i.e. start/stop an electric motor, turn on a light, etc.). A PLC functions similar to your computer. A computer processes input (i.e. keyboard entries, sounds from microphones, etc.) and invokes a certain output (i.e. showing the letter you typed on the screen, sending a request through the internet, etc.). Similarly, a PLC unit processes input and invokes output, but the inputs to a PLC unit are usually devices such as sensors, buttons, switches, etc. The outputs are usually signaling to start/stop motors, turn on/off lights, sound a horn, etc.



### PROJECT LAB

This Lab has provided a platform for students and research associates to implement research based projects under the guidance of faculty members. The facility has been utilized by B.Tech students extensively for their project and research work. The outcome of the project has resulted in publications in various journals and conference proceedings (both at national and international level). The centre has provided a learning platform for both students and faculty.



### Control System Lab

The objective of the Control System laboratory is to provide sound knowledge in the basic concepts of linear control theory and design of control systems, to understand the methods of representation of systems and getting their transfer function models. It facilitates basic knowledge in obtaining the open loop and closed loop responses to understand the concept of stability of control systems. It also helps the students to study the compensation design for a system. It also aims to introduce MATLAB a control simulation software tool.





### Electronics Lab

The aim of this lab is to Design and test rectifiers, clipping circuits, clamping circuits and voltage regulators, compute the parameters from the characteristics of JFET and MOSFET devices, Design, test and evaluate BJT amplifiers in CE configuration, Design and test JFET/MOSFET amplifiers, Design and test a power amplifier, Design and test various types of oscillators.



### Communication Technology Lab

The objective of this lab is to understand basic theories of digital and analog communication, to design and implement analog/ digital modulator and demodulator and to understand the applications of balanced modulator circuit.





## **Microprocessor Lab**

Microprocessor Laboratory aims to produce graduates who have understood the basic operation of microprocessor system along with fundamental programming skills in assembly language. This laboratory houses the hardware which includes 8085 Microprocessor trainer kits, 8086 Microprocessor trainer kits etc. This laboratory provides hand-on experience to interface input / output devices, perform A/D and D/A conversions, traffic light control system etc., the features and facilities available in this laboratory helps the students to do their projects and enhance their knowledge on the latest trends and technologies.



## **Research & Development Lab**

The objective of the Research & Development Lab includes innovate and introduce new technology. The Laboratory's innovative R&D research areas that focus on the development and prototyping of new technologies. This Lab has provided a platform for UG and PG students and research associates to implement research based projects on OPAL-RT Real Time Digital Simulator.





### PCB Lab

The motto of this Laboratory is to Design of Electrical and electronic devices like PCB, Transformer, Inductor, filter, controller etc on ED-WinXP and Fabrication on PCB lab Station.



### Switchgear & Protection lab

The objective of this lab is to make students familiar with the working of various switchgear equipment like under and over voltage relay, reverse power relay and used for power system protection and performance of these equipment

### STC/Workshops/FDP organized

1. One-week Short Term Course (STC) in “**Recent Trends in Power System Management**” at Electrical Engineering Department, Rajkiya Engineering College, Atarra, Banda (U.P.) held on **27<sup>th</sup> November to 01<sup>st</sup> December 2018**. Power system management receives greater attention due to economic operation and real time monitoring of power system network. This STC covers the broad areas of power system management such as power system planning and design, reliability, stability, demand side management, reactive power control etc. This STC programme is specially designed for faculty members/ research scholars/ PG & UG students of Electrical Engineering.



2. One-week workshop on “**Application of MATLAB in Engineering**” at Electrical Engineering Department, Rajkiya Engineering College, Atarra, Banda (U.P.) held on **12<sup>th</sup> to 16<sup>th</sup> February 2019**. MATLAB is high level technical computing language and interactive environment for algorithm development, data visualization, data analysis and numerical computation. It integrates computation, visualization and programming in an easy to use environment where problems and solution are expressed in familiar mathematical notation.





3. Four-week In-House Training for First Year Students at Rajkiya Engineering College, Atarra, Banda (U.P.) held on 20<sup>th</sup> May to 20<sup>th</sup> June 2019.



## Industrial Visits organized

1. Industrial Visit in “Maihar Cement Ltd.” at Sarlanagar Maiha, Satna (MP) on 04<sup>th</sup> September 2018.



2. Industrial Visit in “Electricity Transmission Circle, Uttar Pradesh Transmission Corporation” at Banda (UP) on 12<sup>th</sup> December 2018.

## Expert Lecture

1. An expert lecture on the topic ‘**Microprocessor & its Applications**’ was delivered by Mr. Nitin Saxena, Assistant Professor Department of Electrical Engineering, Jabalpur Engineering College, Jabalpur (M.P.) on 08 April, 2019





2. An expert lecture on the topic '**Fundamentals of Digital Signal Processing**' was delivered by Mr. Akhil Pratap Singh, Assistant Professor Department of Electronics & Communication, Vindhya Institute of Technology & Science, Satna (M.P.) on 01 September, 2018.



3. An expert lecture on the topic 'Electrical & Electronics Materials' was delivered by Mr. Prashant Verma, Assistant Professor, NVPEMI Kanpur (U.P.) on 11 November, 2018.
4. An expert lecture on the topic 'Principal of Communication' was delivered by Mr. Prashant Verma, Assistant Professor, NVPEMI Kanpur (U.P.) From 31 October to 02 November, 2018.

### **Workshop, FDP and Conferences Attended by Faculties**

S.N o.	FACULTY NAME	EVENT DATE	EVENT NAME	EVENT VENUE
01	Dr. Pushpendra Singh	02-06 July 2018	Summer Training Programme on Active Learning	IIT Kanpur
02	Dr. Pushpendra Singh	12-16 Nov 2018	Electromagnetic Fields and Waves: Pedagogy and Computation	IIT Bombay
03	Dr. Pushpendra Singh	15-22 Jan 2019	Universal Human Values and Professional Ethics	AKTU, Lucknow
04	Mr. Mratuyanjay Singh	15-22 Jan 2019	Universal Human Values and Professional Ethics	AKTU, Lucknow
05	Mr. Guru Sharan Singh	15-22 Jan 2019	Universal Human Values and Professional Ethics	AKTU, Lucknow
06	Mr. Sarvesh Kumar	02-06 July, 2018	Summer Training Programme on Active Learning	IIT Kanpur
07	Mr. Sarvesh Kumar	24-28 Sep 2018	Component and Applications of IOT	IIT Patna
08	Mr. Ashish Tripathi	02-06 July 2018	Summer Training Programme on Active Learning	IIT Kanpur
09	Mr. Ashish Tripathi	27 Nov.- 01 Dec.2018	Advance Materials, Modelling and Manufacturing	REC Banda
10	Mr. Ashish Tripathi	30 Oct. – 3 Nov. 2018	Applications of Artificial Intelligence	REC Banda



11	Mr. Ashish Srivastava	30 Oct. – 3 Nov. 2018	Applications of Artificial Intelligence	REC Banda
12	Dr. Mohd Tauseef Khan	2-6 July 2018	Summer Training Programme on Active Learning	IIT Kanpur
13	Dr. Mohd Tauseef Khan	19-20 July 2018	International Conference on Manufacturing, Advance Computing, Renewable Energy and Communication (MARC-2018)	HMRIT MDelhi
14	Dr. Mohd Tauseef Khan	10-14 September 2018	Short Term Course on ‘Recent Advances in Electrical Engineering (RAEE-18)’	REC Ambedkar Nagar
15	Dr. Mohd Tauseef Khan	30 Oct-3 Nov 2018	FDP on Applications of Artificial Intelligence	REC Banda
16	Dr. Mohd Tauseef Khan	28-30 Jan 2019	Innovation & Startup Summit 2019	Govt. Medical College Banda
17	Dr. Mohd Tauseef Khan	7-8 March 2019	6 <sup>th</sup> International Conference on Signal Processing and Integrated Networks (SPIN-2019)	Amity University, Noida
18	Dr. Mohd Tauseef Khan	11-15 March 2019	International Workshop on ‘Emerging Technologies for Economic and Social Impacts in India’	REC Banda
19	Dr. Anurag Chauhan	02-06 July 2018	Summer Training Programme on Active Learning	IIT Kanpur
20	Dr. Anurag Chauhan	30-31 May 2019	Twinning Workshop: Establish Mechanism for Enabling Peer to Peer Learning and Knowledge Sharing & Review Meeting	SPIU Lucknow .
21	Dr. Anurag Chauhan	22-24 Oct 2018	2nd IEEE International Conference on Power Electronics, Intelligent Control and Energy Systems (ICPEICES)	DTU Dehi.
22	Mr. Ashish Srivastava	02-06 July 2018	Summer Training Programme on Active Learning	IIT Kanpur
23	Mr. Mratuyanjay Singh	02-06 July 2018	Summer Training Programme on Active Learning	IIT Kanpur



24	Mr. Mratuyanjay Singh	30 Oct. – 3 Nov 2018	Applications of Artificial Intelligence	REC Banda
25	Mr. Mratuyanjay Singh	11-15 March 2019	International Workshop on ‘Emerging Technologies for Economic and Social Impacts in India’	REC Banda
26	Mr. Guru Sharan Singh	02-06 July 2018	Summer Training Programme on Active Learning	IIT Kanpur



## MECHANICAL ENGINEERING DEPARTMENT

### Vision

To be recognized as pioneer Department of Mechanical Engineering education in the state of Uttar Pradesh for providing valuable resources for industry and society by 2030.

### Mission

1. To develop skills in students by providing them knowledge to succeed in Mechanical Engineering profession and higher studies.
2. To make students aware with new and cutting-edge technology.
3. To develop practicing engineers who investigate, research, design with awareness and concern for society and environment.
4. To provide ethical and value education by promoting activities addressing the societal needs.

### Programme Educational Objectives of Mechanical Engineering Department

Our graduates will:

1. Possess core knowledge of the discipline to succeed in their careers.
2. Be practicing engineers with breadth of knowledge to fit into contemporary work culture of multidiscipline and multitasking.
3. Be thorough professionals with competence to work in teams as leaders, effective communicators with ethical values, with sensitivity to the needs and concerns of society and environment.

### Programme Specific Outcomes of Mechanical Engineering Department

Our graduates will be able to:

1. Model and analyses components or processes related to thermal and mechanical systems.
2. Apply the principles of Mechanical Engineering to find the solutions for problems related to society and environment



## LABORATORIES

### Lab. 1- HEAT AND MASS TRANSFER LAB

Major equipment's in Heat and Mass Transfer lab are as following:

- Heat transfer from a pin fin apparatus
- Parallel and counter flow heat exchanger
- Heat pipe demonstrator.
- Stefan Boltzmann apparatus
- Heat transfer in natural convection apparatus
- Thermal conductivity of composite wall apparatus



### Lab. 2- REFRIGERATION AND AIR CONDITIONING LAB

Major equipment's in Refrigeration and Air Conditioning lab are as following:

- Vapor compression refrigeration test rig
- Ice plant test rig
- Air conditioning test rig
- Double-stage air compressor test rig.
- Computerised Refrigeration Test Rig



### Lab. 3- AUTOMOBILE AND IC ENGINE LAB

Major equipment's in Automobile and IC engine lab are as following:

- Four-cylinder four stroke petrol engine test rig
- Four-cylinder four stroke diesel engine test rig
- Single cylinder four stroke diesel engine test rig
- Steering mechanism
- Differential gear mechanism of rear axle
- Gear box
- Cut section model of fuel supply system of SI engine
- Cut section model of fuel supply system of CI engine
- Suspension system
- Computerized Diesel engine test rig







## Lab. 4- THERMODYNAMICS LAB

Major apparatus in Thermodynamics lab are as following:

- Model of Lancashire Boiler
- Model of Babcock and Wilcox Boiler
- Model of two stroke petrol engine
- Model of four stroke petrol engine
- Model of two stroke diesel engine
- Model of four stroke diesel engine
- Model of velocity compounded steam turbine
- Model of pressure compounded steam turbine
- Model of Gas turbine



## Lab. 5- MATERIAL SCIENCE AND MATERIAL TESTING LAB

Major equipment's in Material Science and material testing lab are as following:

- Universal Testing machine
- Impact Test
- Hardness Tester
- Creep Testing Machine
- Fatigue Testing machine
- Injection Moulding
- Polishing Machine



- Muffle Furnace
- Specimen Cutting Machine
- Torsion Testing Machine
- Spring Testing Machine



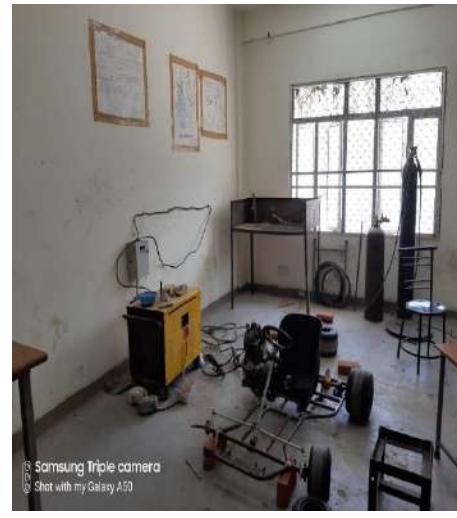
## Lab. 6- WORKSHOP

Major equipment's in Workshop are as following:

- Lathe machine with 3 jaw and 4 jaw chuck
- Lathe machine 5 feet 6 inch with 1hp motor
- Shearing machine
- Pedestal grinder with 8-inch wheel(double), 2hp & 3 phase motor
- Pillar electric drill machine, 2hp & 3 phase motor
- Power hacksaw with auto stop hydraulic
- Power hammer
- Abrasive cut off wheel machine
- Power grinder
- Polishing machine
- Vertical milling machine
- Horizontal milling machine
- Milling machine cutter
- Shaper machine
- Surface grinding machine



- Tool and cutter grinding machine
- Moulding machine
- Tube bending machine
- Press machine
- Spring testing machine
- Plastic moulding machine
- Arbor press
- Muffle furnace
- Gas welding machine
- Arc welding machine





### Lab. 7- MACHINE DESIGN LAB

Major apparatus in Machine design lab are as following:

- Model of Cotter Joint.
- Model of knuckle Joint.
- Model of Muff Coupling.
- Model of Flexible Coupling.
- Model of Helical Spring.
- Model of Screw Jack.



### Lab. 7- THEORY OF MACHINES LAB

Major apparatus in Theory of Machines lab are as following:

- Study of inversion of four bar mechanism
- Study of inversion of single slider crank mechanism
- Study of gyroscopic couple
- Study of simple and compound gear trains



### Lab. 8- MEASUREMENT AND METROLOGY LAB

Major apparatus in Measurement and Metrology are as following:

- Vernier Caliper, Micrometer
- Slip Gauges, Feeler Gauge, Plug gauge, Limit Gauge
- Dial Indicator
- Plug & Ring Tape gauge
- Sine Bar
- Bevel Protector



- Surface Plate
- Stain gauge Indicator
- Electron Digital Micrometer
- Tachometer, Stroboscope

### Lab. 9- CAD AND ENGINEERING DRAWING LAB

- Number of computers- 30
- Software: ANSYS, CATIA, SOLID WORKS



### Lab. 10- Fluid Mechanics and fluid Machinery LAB

Major apparatus in Fluid Mechanics and fluid Machinery lab are as following:

1. Francis turbine test rig.
2. Kaplan turbine test rig
3. Pelton wheel/turbine test rig.
4. Centrifugal Pump test rig.
5. Experimental setup to find Losses due to pipe fittings
6. Experimental setup to find Losses due to friction in pipe lines.
7. Bernoulli's theorem apparatus.
8. Force vortex flow apparatus.
9. Metacentric Height Apparatus
10. Impact of jet on the vane's apparatus
11. Discharge over notches.
12. Experimental setup of venturi meter and orifice meter.



### 13. Reynolds Apparatus.



### Lab. 11- CNC LAB

Major apparatus in Fluid Mechanics and fluid Machinery lab are as following:

1. CNC Milling Machine
2. CNC Lathe Machine.
3. OFFLINE CNC Programming Station with FANUC-31I Turning+ Milling-01





## Lab. 12- PROJECT LAB

This Lab has provided a platform for student's projects under the guidance of faculty members. The facility has been utilized by B.Tech students extensively for their project work.



## Workshop, FDP and Conferences Attended by Faculties

S.No.	FACULTY NAME	EVENT DATE	EVENT NAME	EVENT VENUE
01	Mr. Ankush Kumar Rajput	02-06 July, 2018	Summer Training Programme on Active Learning	IIT Kanpur
02	Mr. Ankush Kumar Rajput	15 September 2018	workshop on Virtual Laboratories	IIT Kanpur
03	Mr. Ankush Kumar Rajput	15 -22 January 2019	Universal Human Values and professional Ethics”	SHEAT, Varanasi
04	Mr. Ankush Kumar Rajput	30 October to 3 November 2018	Applications of Artificial Intelligence	REC Banda
05	Mr. Ankush Kumar Rajput	04 December 2018	Procurement process and assessment	SPIU, Lucknow
06	Mr. Akshay Kant	02-06 July, 2018	Summer Training Programme on Active Learning	IIT Kanpur
07	Mr. Ravi Shankar	02-06 July, 2018	Summer Training Programme on Active Learning	IIT Kanpur
08	Mr. Arun Kumar	02-06 July, 2018	Summer Training Programme on Active Learning	IIT Kanpur
09	Mr. Deep Singh Thakur	02-06 July, 2018	Summer Training Programme on Active Learning	IIT Kanpur
10	Mr. Saurabh Tripathi	02-06 July, 2018	Summer Training Programme on Active Learning	IIT Kanpur
11	Mr. Ravi Shankar	15 -22 January 2019	Universal Human Values and professional Ethics”	SHEAT, Varanasi
12	Mr. Ajay Kumar Pandey	01st – 03rd April, 2019	International Conference on "Digital Pedagogy"	AICTE, New Delhi
13	Mr. Ajay Kumar Pandey	13th May 2019	workshop on “Collaborative Research Scheme: Knowledge Incubation for TEQIP-III”	SPIU-UP
14	Mr. Ajay Kumar Pandey	02nd– 06th Sept, 2019	“Introduction & Application of Ansys EM”	REC Banda



15	Mr. Ajay Kumar Pandey	27th Nov. - 01st Dec., 2018	"Advance Materials, Modelling and Manufacturing"	REC Banda
16	Mr. Ajay Kumar Pandey	10th June– 21st June. 2019	"Introduction to Manufacturing Processes"	IIT, Kanpur
17	Mr. Ajay Kumar Pandey	24th to 28th June 2019	"Advanced Pedagogies: Active Learning and Digital Tools"	IIT Delhi
18	Mr. Saurabh Tripathi	27 <sup>th</sup> -31 <sup>th</sup> August 2018	Mastering Advanced Techniques of Characterization for High-end Research (MATCH® -2018)	IIT, Kanpur
19	Mr. Saurabh Tripathi	30 October to 3 November 2018	Applications of Artificial Intelligence	REC Banda
20	Mr. Saurabh Tripathi	27 <sup>th</sup> Nov. to 1 <sup>th</sup> December 2018	Advance material modelling and manufacturing	REC Banda
21	Mr. Saurabh Tripathi	11 <sup>th</sup> to 15 <sup>th</sup> March 2019	QIP course on Advance Scanning Microscopy and Advance Analysis	IIT, Kanpur
22	Mr. Deep Singh Thakur	30 October to 3 November 2018	Applications of Artificial Intelligence	REC Banda
23	Mr. Deep Singh Thakur	27 <sup>th</sup> Nov. to 1 <sup>th</sup> December 2018	Advance material modelling and manufacturing	REC Banda
24	Mr. Arun Kumar	30 October to 3 November 2018	Applications of Artificial Intelligence	REC Banda
25	Mr. Arun Kumar	27 <sup>th</sup> Nov. to 1 <sup>th</sup> December 2018	Advance material modelling and manufacturing	REC Banda
26	Mr. Ravi Shankar	30 October to 3 November 2018	Applications of Artificial Intelligence	REC Banda
27	Mr. Ravi Shankar	27 <sup>th</sup> Nov. to 1 <sup>th</sup> December 2018	Advance material modelling and manufacturing	REC Banda
28	Mr. Akshay kant	30 October to 3 November 2018	Applications of Artificial Intelligence	REC Banda
29	Mr. Akshay Kant	27 <sup>th</sup> Nov. to 1 <sup>th</sup> December 2018	Advance material modelling and manufacturing	REC Banda
30	Mr. Akshay Kant	13 <sup>th</sup> – 20 <sup>th</sup> July 2018	Universal Human Values and professional Ethics"	IET Lucknow



31	Mr. Siddharth Kosti	23th July- 03 August 2018	Multimedia Signal Processing and Selected Topics on Control System	JEC Assam
32	Mr. Siddharth Kosti	03-05 October 2018	Future Learning Aspects of Mechanical Engineering	AMITY University
33	Mr. Siddharth Kosti	30 October to 3 November 2018	Application of Artificial Intelligence	REC Banda
34	Mr. Siddharth Kosti	27 <sup>th</sup> Nov. to 1 <sup>th</sup> December 2018	Advance material modelling and manufacturing	REC Banda
35	Mr. Siddharth Kosti	19 <sup>th</sup> – 23 <sup>th</sup> feb. 2019	Impact of Recent Advances in Applied Science on Engineering	REC Banda
36	Mr. Siddharth Kosti	15 <sup>th</sup> -20 <sup>th</sup> march 2019	Soft Skill and Creativity Nature and Nurture	PDPM IIITDM Jabalpur
37	Mr. Siddharth Kosti	11 <sup>th</sup> -15 <sup>th</sup> March 2019	Emerging technologies for economic and social impacts in India	REC Banda

## Activities in Department of Mechanical Engineering

### 1. FDP organized by Department of Mechanical Engineering

Faculty Development Programme on Advance Materials, Modelling and Manufacturing organized between 27-11-18 to 01-12-18.

Eminent speakers were:

- 1- Dr. Siddharth Joshi Associate Professor, NIE Mysuru,
- 2- Dr. Anjanaye Pandey Associate Professor, MGCGV Chitrakoot,
- 3- Dr. Sanjay Shukla, RDSO Lucknow,
- 4- Dr. Rajeev Gupta, Wind Tunnel Facility,IIT Kanpur,
- 5- Dr. Naresh Sisodia Associate Professor,MNNIT Allahabad,
- 6- Dr. Avadesh Sharma Associate Professor, REC Mainpuri,
- 7- Dr. Mukul Shukla Professor, MNNIT Allahabad,
- 8- Dr Arun Kumar Pandey Associate Professor, BIET Jhansi.



## 2. Expert Lecture

- (a) Expert Lecture on Manufacturing Science by Dr Pankaj Kumar Shrivastava Associate Professor and Head ME Department AKS University Satna on 01-09-18
- (b) Training in Ansys software, HMT, Machine Design and Engineering Management & Entrepreneurship under twinning programme held between 18-09-18 to 20-09-18.



## APPLIED SCIENCE AND HUMANITIES DEPARTMENT

The department of Applied Science and Humanities has been functioning since its inception with a mission of imparting teaching and promoting the implementation of practical aspects of Applied Science and Humanities to build a concrete foundation of engineering education for the students. The department offers the subjects viz. Chemistry, English, Mathematics, Physics, and Environment Studies, etc. in the B.Tech. Programme. The department has experienced faculty members having Ph.D. degrees with a number of research papers published in various national and international journals.

### Vision

The Department of Applied Science and Humanities is committed to dynamically integrate the fundamental concepts of applied sciences and humanities with recent advancements having direct or indirect impacts on engineering to groom the students to become professionals and value-based technocrats.

### Mission

- Prepare students for core engineering branches by laying a strong foundation of basic principles of Applied Science & Humanities.
- Provides training of communication skills to empower students to meet with the cutting-edge technologies.
- Committed to providing a supportive and ICT blend teaching and learning environment for the holistic development of students.

## LABORATORIES

### Lab-1: PHYSICS LABORATORY

The Department has a well equipped Physics Laboratory having Spectrometer, Optical Bench, Newton Ring, He-Ne laser, Stefan's law, Energy Band Gap of semiconductor, Hall Effect setup. Our mission



is to help students to understand the basics of physics applied in Optics and Electromagnetic Radiation and Modern Physics etc.



### Lab-2: CHEMISTRY LABORATORY

The Chemistry laboratory provides the opportunities to the students to learn the practical concepts of Chemistry.



### Lab-3: LANGUAGE LABORATORY

The state-of-the-art language laboratory provides an advanced language teaching/learning experience. The laboratory has 30 computers and a teacher console empowered with iTell Language Lab software. The software provides effective learning methodologies and creates better interaction between teacher and





students. Our mission is to help students to achieve academic, intellectual, and professional goals by providing instruction and guidance in all facets of communication, from writing and speaking, to listening and group/team interaction.

## Activities Organized

- TEQIP-II sponsored Short Term Course entitled “Impact of recent advances in Applied Science on Engineering” is organized by the Department of Applied Science & Humanities during 19 Feb- 23 Feb 2019. More than 100 participants participated in the event.



- In-house Technical Skills training programme for first year students during 10 June to 15 June 2019. In this event, internal and external experts delivered lectures, and all the first year students participated.





## Workshop, FDP and Conferences Online Courses Attended by Faculties

S.No .	Faculty Name	Programme	Duration	Organized by
1.	Dr. Shailendra Badal	FDP, Summer training programme on active learning for senior faculty	02-06 July, 2018	IIT, Kanpur
2.	Dr. Shailendra Badal	FDP, Universal Human Value and Professional Ethics	13-20 July, 2018	IET, Lucknow
3.	Dr. Shailendra Badal	FDP on Application of Artificial Intelligence	30 Oct-03 Nov., 2018	Dept. of IT R.E.C. Banda
4.	Dr. Shailendra Badal	STC on Recent Trends in Power System Management	27 Nov-01 Dec, 2018	Dept. of EE R.E.C. Banda
5.	Dr. Shailendra Badal	FDP on Advance Materials, Modeling's and Manufacturing.	27 Nov-01 Dec., 2018	Dept. of ME R.E.C. Banda
6.	Dr. Shailendra Badal	Workshop on Application of MATLAB in Engineering	12-16 Feb, 2019	R.E.C. Banda
7.	Dr. Shailendra Badal	STC on Impact of Recent Advances in Applied Science on Engineering 2019	19-23 Feb, 2019	Department of Applied Science & Humanities, R.E.C. Banda
8.	Dr. Shailendra Badal	International Workshop on Emerging Technology for Economic and Social Impacts in India 2019	11-15 March, 2019	R.E.C. Banda
9.	Dr. Shailendra Badal	FDP, ICT in teaching and learning for rural development	13-22 May, 2019	MGCG University, Satna, M.P.
10.	Dr. Archana Singh	Student Induction Programme on Human Values and Professional Ethics	25 June-1 July, 2019	DCRUST University, Murthal



11.	Dr. Archana Singh	International Conference NEWTONS	08-10 June, 2018	Seemant Institute of Technology
12.	Dr. Amit Triphati	Summer training on Active learning	02-06 July, 2018	Knowledge Incubation for TEQIP, IITK
13.	Dr. Amit Triphati	Data Analysis and SPSS Software	21 -25 Oct, 2019	HBTU, Kanpur, U. P.
14.	Dr. Amit Triphati	Applications of MATLAB in Engineering	12-16 Feb, 2019	Rajkiya Engineering College Banda
15.	Dr. Manoj K. Singh	Application of Artificial intelligence	30 Oct. – 03 Nov, 2018	Rajkiya Engineering College Banda
16.	Dr. Manoj K. Singh	Universal Human Values and Professional Ethics	13 - 20 July, 2018	Value Education Cell, AKTU Lucknow
17.	Dr. Manoj K. Singh	Summer Training Programme on Active Learning for Senior Faculty	02 <sup>nd</sup> to 06 <sup>th</sup> July 2018	Knowledge Incubation for TEQIP, IITK
18.	Mr. Abhijeet Singh	Electromagnetic Fields and Waves: Pedagogy and Computation	12-16Nov, 2018	IIT Bombay
19.	Mr. Abhijeet Singh	Applications of Artificial Intelligence	30 Oct. - 03 Nov. 2018	Rajkiya Engineering College Banda
20.	Mr. Abhijeet Singh	Universal human values and professional ethics	13-20 July, 2018	Value Education Cell, AKTU Lucknow
21.	Mr. Abhijeet Singh	Summer training on Active learning”	2-6 July, 2018	Knowledge Incubation for TEQIP, IITK
22	Dr. Archana Singh	Developing Soft Skills and Personality	Aug - Oct 2018	
23	Dr. Manoj K. Singh	Non-Conventional Energy Resources	July – Oct 2018	
24	Dr. Manoj K. Singh	Solar Photovoltaic: Principles, Technologies & Materials	Jan - March 2019	



### Oral/Poster Presentation

S.No.	Name of Faculty	Title of paper	Name of Conference/Seminar/Workshop etc.	Dates of the Event	Level of Event
1.	Dr. Shailendra Badal	Novel Reactions of Some $\gamma$ -Keto acids & FEMO	6 <sup>th</sup> world congress, conference Chemistry, Biology Interface Synergetic in new frontiers & Science and Tech. for future mankind at Delhi University & Jamia Hamdard University	7-9 Jan, 2019	International
2.	Dr. Shailendra Badal	Estimation of cohesive forces energetic and some other useful and important parameters of pure organic liquids	Future India- Science & Technology, University of Allahabad	22-24 Feb, 2019	National Seminar
3.	Dr. Shailendra Badal	A new adsorbent indicator 3-(2, 4-dihydroxyphenyl)-3-(2-thienyl) Phthal-as-ein using for Argenometric Titration	Recent Trends in Chemical Engineering & Environmental Protection, B.I.E.T., Jhansi	30 march 2019	National Conference
4.	Dr. Amit Tripathi	Numerical Solutions of Periodic Burgers' Equation using Collocation of Cubic B-spline Finite Elements	International Conference on Mathematical Modelling and Scientific Computing held at IIT Indore	19-21 July, 2018	International
5.	Dr. Manoj K. Singh	Performance of hybrid BatCap using MWCNT-encapsulated lithium iron phosphate as cathode	7 <sup>th</sup> international conference on Electroactive polymers, Udaipur	3 <sup>rd</sup> Feb to 8 <sup>th</sup> Feb 2019,	International Conference

**Expert lecture delivered**

S. No.	Faculty name	Event date	Event name	Event venue
1.	Dr. Amit Tripathi	03 - 07June, 2019	On “Finite Difference Methods for Hyperbolic Partial Differential Equations” in AICTE sponsored Short Term Course on “Applications of Computational Techniques in Engineering using MATLAB”	QIP centre, IIT Roorkee

**Other Achievements**

Appreciation for fostering an ecosystem bridging Government, Industry and Academia by Texas Instruments in 2018.

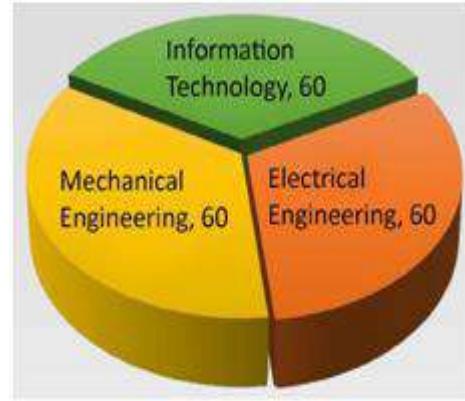




## Programmes Offered

Rajkiya Engineering College Banda has been providing Bachelor's Degree Programme in three branches namely Information Technology, Mechanical Engineering and Electrical Engineering.

The institute admits students for its Bachelor in Technology (B.Tech) programme from all over India through the competitive Common Entrance Test UPSEE. Seats are filled by UPSEE counselling.



S. No.	Course Name	Duration	Intake
1.	Information Technology	4 years	60
2.	Mechanical Engineering	4 years	60
3.	Electrical Engineering	4 years	60



## Students Strength in 2018-19

<b>Rajkiya Engineering College Banda Student Strength, 2018-19</b>									
<b>Branch</b>	<b>Year</b>	<b>Intake</b>	<b>Total no. of Students</b>	<b>Male</b>	<b>Female</b>	<b>GEN</b>	<b>OBC</b>	<b>SC</b>	<b>ST</b>
<b>B.Tech. Electrical Engineering</b>	<b>1st</b>	60	64	53	11	17	8	34	4
<b>B.Tech. Electrical Engineering</b>	<b>2nd</b>	60	70	62	8	8	19	41	2
<b>B.Tech. Electrical Engineering</b>	<b>3rd</b>	60	63	51	12	7	20	34	2
<b>B.Tech. Electrical Engineering</b>	<b>4th</b>	60	54	47	7	15	10	28	1
<b>B.Tech. Information Technology</b>	<b>1st</b>	60	62	47	15	26	9	25	2
<b>B.Tech. Information Technology</b>	<b>2nd</b>	60	64	52	14	16	14	35	3
<b>B.Tech. Information Technology</b>	<b>3rd</b>	60	62	57	5	12	20	28	2
<b>B.Tech. Information Technology</b>	<b>4th</b>	60	54	43	11	8	13	30	3
<b>B.Tech. Mechanical Engineering</b>	<b>1st</b>	60	63	54	9	19	11	31	2
<b>B.Tech. Mechanical Engineering</b>	<b>2nd</b>	60	67	62	5	9	19	35	4
<b>B.Tech. Mechanical Engineering</b>	<b>3rd</b>	60	69	60	9	10	18	39	2
<b>B.Tech. Mechanical Engineering</b>	<b>4th</b>	60	55	47	8	5	17	29	4

**Total strength = 749**



## Result Analysis (2018-19)

Rajkiya Engineering College Banda is affiliated college of AKTU. The external examination is organized by University. The result analysis of session 2018-19 is:-

S.no.	Branch	Year	Total Students	No of Passed Student	Percentage of Pass Students	No of Students (%)				
						>75	74-70	69-60	59-50	< 50
1	IT	I	59	59	100	7	13	23	14	2
2		II	65	64	98.5	20	13	27	5	0
3		III	62	62	100	23	25	14	0	0
4		IV	50	50	100	6	16	27	1	0
5	EE	I	64	62	96.9	5	11	26	15	7
6		II	70	69	98.6	13	18	34	5	0
7		III	61	61	100	22	24	15	0	0
8		IV	54	54	100	14	17	21	2	0
9	ME	I	60	58	96.7	4	12	23	15	6
10		II	66	65	98.5	13	14	28	11	0
11		III	69	69	100	14	16	32	6	1
12		IV	55	55	100	7	14	31	3	0
	Total		735	728	99.05					

**Detail of Failed Students**

<b>Branch</b>	<b>Roll No</b>	<b>Year</b>	<b>Percentage</b>
<b>IT</b>	1573413021	II year	51
<b>EE</b>	1773420025	I year	46
	1873420036	I year	42
	1773420032	II year	51
<b>ME</b>	1873440035	I year	41
	1873440055	I year	37
	1773440050	II year	55



## Transition Rate of Year UG Students

### Department of Information Technology

Total student in 2<sup>nd</sup> semester in 2018-19

Category	Male	Female	Other
SC	17	06	00
ST	01	01	00
OBC	07	01	00
Other (including General)	19	07	00

**TOTAL= 59**

No of students Transitted to 3<sup>rd</sup> Sem clearing all paper of first year i.e. 1<sup>st</sup>& 2<sup>nd</sup> Semesters

Category	Male	Female	Other
SC	07	05	00
ST	00	00	00
OBC	06	01	00
Other (including General)	11	06	00

**TOTAL= 36**

### Department of Electrical Engineering

Total student in 2<sup>nd</sup> semester in 2018-19

Category	Male	Female	Other
SC	26	07	00
ST	04	00	00
OBC	07	01	00
Other (including General)	15	03	00

**TOTAL = 63**



No of students Transitted to 3<sup>rd</sup>Sem clearing all paper of first year i.e. 1<sup>st</sup> & 2<sup>nd</sup> Semesters

Category	Male	Female	Other
SC	13	05	00
ST	00	00	00
OBC	07	00	00
Other (including General)	09	03	00

**TOTAL= 37**

#### **Department of Mechanical Engineering**

Total student in 2<sup>nd</sup> semester in 2018-19

Category	Male	Female	Other
SC	23	06	00
ST	02	00	00
OBC	09	02	00
Other (including General)	17	01	00

**TOTAL= 60**

No of students Transitted to 3<sup>rd</sup>Sem clearing all paper of first year i.e. 1<sup>st</sup> & 2<sup>nd</sup> Semester

Category	Male	Female	Other
SC	14	02	00
ST	01	00	00
OBC	06	01	00
Other (including General)	10	01	00

**TOTAL= 35**



## Details of Sanctioned & Filled Posts

### Teaching Staff

S. No.	Department	Professor		Associate Professor		Assistant Professor		
		37400-67000 AGP-10000		37400-67000 AGP-9000		15600-39100 AGP-6000		
		Sanctioned Post	Filled Post	Sanctioned Post	Filled Post	Sanctioned Post	Filled Post	
			Regular		Regular		Regular	Contractual
1.	Mechanical Engineering	01	00	02	00	08	06	02
2.	Electrical Engineering	01	00	03	00	08	08	00
3.	Information Technology	01	00	03	01	08	01	05
4.	Applied Science & Humanities	02	00	02	00	08	08	00

### Non-Teaching Staff

S. N.	POST NAME AS PER G.O.	SANCTION POST	Filled Post
1	Workshop Superintendent	1	0
2	Jr. Computer Programmer & Network Engineer	1	0
3	Avar Abhiyanta	2	0
4	Anudeshak ( Dept/Lab)	4	0
5	Computer Operator	1	0
6	Mechnical Grade-A	3	0
7	Lab Technician	3	0
8	Lab Assistant	21	0
9	Electrician	3	0
10	Registrar	1	*



11	Medical Officer (Male)	1	0
12	Assistant Registrar	1	*
13	Physical Training Instructor	1	0
14	Deputy Librarian	1	0
15	Assistant Librarian	1	0
16	Cataloger	1	0
17	Accountant	1	0
18	Pradhan Sahayak	1	0
19	Senior Clerk	1	0
20	RGC/Typist	6	0
21	Store Keeper	1	0
22	Driver	2	0
23	Hostel Assistant	4	0
24	Plumber	1	0
25	Tubewell Operator	1	0
26	Laboratory Attendant	10	0
27	Peon	8	0
28	Helper Electrical & Civil	2	0
29	Book Lifter	2	0
30	Hostel Attendant	4	0
31	Store Mate	1	0
32	Carpenter	1	0
33	Masson	1	0
34	Gardener	4	0
35	Sweeper	10	0
36	Security Persons	20	0

\*Charge of Registrar & Assistant Registrar are being handled by regular faculty member Dr. Ashutosh Tiwari & Mr. Deep Singh Thakur respectively.

Note :- 99 Manpower provided by service provider are working against sanctioned non teaching positions.



## GATE Qualified Data

Students Qualified GATE (2018-19)

<b>Performance of REC Banda Students (B Tech Final Year) in GATE 2019</b>					
<b>Branch</b>	<b>Total No. of students in final year</b>	<b>No. Of students appeared in Gate 2019</b>	<b>No. Of students Qualified in Gate 2019</b>	<b>Minimum AIR</b>	<b>Maximum AIR</b>
EE	54	48	11	1598	25871
IT	54	53	9	3978	25304
ME	55	52	12	8289	45630



## Teachers' Training Programme /FDP/Conferences

S.No.	FACULTY NAME	EVENT DATE	EVENT NAME	EVENT VENUE
01	Dr. Amit Tripathi	19-21 July 2018	International Conference on Mathematical Modelling and Scientific Computing	IIT Indore
02	Dr. Anurag Chauhan, Dr. Moh. Tauseef Khan and Mr. Ashish Srivastava	19-20 July 2018	International Conference on Manufacturing, Advance Computing, Renewable Energy and Communication	HMR Institute of Technology and Management, New Delhi
03	Dr. Moh. Tauseef Khan	10-14 Sep 2018	Short Term Course on Recent Advances in Electrical Engineering	Rajkiya Engineering College, Ambedkar Nagar (U.P)
04	Mr. Pankaj Chaudhari and Mr. Dhananjay Bisen	09-13 Oct 2018	Workshop on Big Data Analysis using Hadoop	Rajkiya Engineering College, Azamgarh (U.P)
05	Dr. Anurag Chauhan	22-24 Oct 2018	IEEE International Conference on Power Electronics, Intelligent Control and Energy Systems	Delhi Technical University, Delhi
06	29 Faculty Members of REC Banda	30 Oct-03 Nov 2018	FDP on Applications of Artificial Intelligence	Rajkiya Engineering College Banda
07	10 Faculty Members of REC Banda	27 Nov-01 Dec 2018	FDP on Advance Materials, Modelling and Manufacturing	Rajkiya Engineering College Banda
08	Mr. Yogendra Kumar and Mr. Neeraj Tantubay	03-09 Dec 2018	Workshop on Machine Learning in Image and Video Analytics	IIT BHU, Varanasi
09	Dr. Siddhartha Kumar Arjaria	28-29 Dec 2018	International Conference on Advanced Computation and Telecommunication	LNCT Bhopal
10	Dr. Shailendra Badal	07-10 Jan 2019	ISNSCON-2018 6 <sup>th</sup> World Congress on Nanomedical Sciences	Vigyan Bhawan, New Delhi
11	Mr. Ankush Singh Rajpoot and Mr. Ravi Shankar	15-22 Jan 2019	FDP on Universal Human Values & Professional Ethics	Saraswati Higher Education & Technical College of Pharmacy, Varanasi
12	Mr. Ajay Kumar Pandey	30-31 Jan 2019	International Conference on Advance Technologies in Renewable Energy for Future Sustainability	RGPV Bhopal
13	Dr. Shailendra Badal	01-02 Feb 2019	International Conference on Emerging Trends in Technology and Applications	Rajkiya Engineering College Kannauj



14	Dr. Surendra Kumar	01-02 Feb 2019	International Conference on Emerging Trends in Technology and Applications	Rajkiya Engineering College Kannauj
15	Dr. Manoj Kumar Singh	03-08 Feb 2019	7 <sup>th</sup> International Conference on Electroactive Polymers	Udaipur
16	Mr. Dhananjay Bisen	08-09 Feb 2019	International Conference on Advanced Computing and Software Engineering	KNIT Sultanpur
17	Dr. Shailendra Badal	22-24 Feb 2019	National Seminar on Future India: Science and Technology	Allahabad University, Allahabad
18	Dr. Surendra Kumar	01-02 Mar 2019	National Conference on Entrepreneurship Development and Technological Innovation	HBTU Kanpur
19	Mr. Siddhartha Kosti	15-20 Mar 2019	FDP on Soft Skills and Creativity Nature and Nurture	IITDM, Jabalpur
20	Mr. Umar Badra Shafeeqe and Mr. Praveen Goyal	01-03 Apr 2019	3 Days International Conference on Digital Pedagogies	AICTE Auditorium, New Delhi
21	Mr. Ajay Kumar Pandey	01-03 Apr 2019	International Conference on Digital Pedagogies	AICTE Auditorium, New Delhi
22	Dr. Vibhash Yadav	12-13 Apr 2019	3rd International Conference on Advances in Computing & Data Sciences	Inderprastha Engineering College, Ghaziabad
23	Mr. Praveen Goyal, Mr. Dhananjay Bisen, Mr. Neeraj Tantubay, Mr. Kamlesh Kumar Gautam and Mr. Umar Badra Shafeeqe	13 May 2019	Workshop on Comprehensive Research Scheme: Knowledge Incubation for TEQIP-III	Hotel Revanta, Lucknow



## *Students' Training Programme/Workshops*

S.No.	Name of Training	Date/Duration	No. of Students	Dept./Cell name
01	GATE TRAINING	225 hrs	165	EE, ME, IT
02	Employability Skill Training for IV Year Students	150 hrs	165	EE, ME, IT
03	Employability Skill Training for III Year Students	150 hrs	194	EE, ME, IT
04	Induction Programme 2018-19	1-21 Aug-18	All B Tech I Year Students	Induction Cell
05	03 Days Student Training Programme on Theory Subjects of IT and ME Departments	18-20 Sep 2018	100	TEQIP-III
06	Workshop on A Journey of Entrepreneur	06-Oct 2018	113	Start-up & IIC Cell
07	Short Term Course (STC) on Recent Trends in Power System Management RTPSM-2018	27 Nov-01 Dec 2018	75	Electrical Engineering
08	Training under Technocruise (TECHKRITI) 2018-19	01-02 Dec 2018	144	TEQIP-III
09	One-week Workshop on Applications of MATLAB in Engineering	12-16 Feb 2019	45	Electrical Engineering
10	Short Term Course (STC) on Impact of Recent Advances in Applied Science on Engineering	19-23 Feb 2019	103	Applied Science and Humanities



11	Half Day Workshop on IPR (Intellectual Property Rights)	09 Mar 2019	54	Start-up & IIC Cell
12	International Workshop on Emerging Technologies for Economic and Social Impact in India	11-15 Mar 2019	149	TEQIP-III
13	06 Days Workshop on Student Excellence and Learning Programme (SELP)	8-13 Apr 2019	20	SELP, TEQIP-III Cell
14	Half Day Workshops on Cognitive Skills and Critical Thinking	20 Apr 2019	32	Start-up & IIC Cell
15	Half Day Workshops on Leadership Skills and Stress Management	20 Apr 2019	32	Start-up & IIC Cell
16	In-house Training for First Year Student of REC Banda	20 May-20 June 2019	188	Training & Placement Cell

- Corporate Skill Development for final year students by Mr. Lalit Kumar (HOD, Corporate Skill Development Cell, KIT Kanpur on 20 Aug 2018-21 Aug 2018.
- **IOT Training- The 5-days of Training for B.Tech students of IOT were successfully conducted from 25 April 2019 to 30 April 2019:** The training was given by HR of Itenic Technologies to Mechanical Engineering, Electrical Engineering, and Information Technology interested students of B.Tech First year to Final Year of Mechanical Engineering, Electrical Engineering and Information Technology attended the IOT Training.
- **Industry Institute Meet:** One day Industry Institute Meet 2019 for B.Tech. First year to Final Year students were successfully conducted from on 10 March 2019 at Rajkiya Engineering College Banda. The purpose of this meet is to fulfill the gap between the industry and the



students. The session will be very beneficial for the students to get the necessary exposure to the outside world and the problems they are going to face.



Industry Institute Meet 2019 on 10 March 2019 at REC Banda



## *Students' Internship*

Total 190 students have done internships at various reputed institutes during 2018-19.

Summary of Winter Internship at NIE Mysuru from 8 January 2019 to 22 January 2019

S. No.	Branch	Number of Students attended the Winter Internship at NIE Mysuru
1	ME	20
Total number of students		20

Summary of Summer Internship at NIE Mysuru from 21 June 2019 to 19 July 2019

S.No.	Branch	Number of Students attended the Summer Internship at NIE Mysuru
1	IT	26
2	EE	15
3	ME	14
Total number of students		55



(Winter Internship at NIE Mysuru from 8 January 2019 to 22 January 2019)



(Summer Internship at NIE Mysuru from 21 June 2019 to 19 July 2019)



#### 4-week In-house Training for B.Tech. First year students

The 4-week In-house Training for B.Tech. First year students was successfully conducted from 20 May 2019 to 20 June 2019 at Rajkiya Engineering College Banda. The training was divided into 4 modules; each by departments of Mechanical Engineering, Electrical Engineering, Information Technology and Applied Sciences & Humanities. 188 students of B.Tech. First year of Mechanical Engineering, Electrical Engineering and Information Technology attended the In-house Training.



Students during In-house Training 20 May 2019 to 20 June 2019 at REC Band



## Campus Placement

Summary of Placement Session 2018-2019



Branch	Total Students	Number of Students Placed	Total Offers	Highest Package (LPA)	Lowest Package (LPA)	Avg Package (LPA)
IT	54	10	19	4.20 Lac/Mobiloitte Technologies Pvt.Ltd	1.92 Lac/ Singsys	3.06
ME	55	13	20	10 / Byjus	2.4 Lac/Cinif Technologies Pvt.Ltd	6.2
EE	54	22	39	10 / Byjus	1.44 Lac/Just Clean Global	5.72
Total	163	45	78	10 LPA	1.80 LPA	4.99 LPA



## *Placement Drives at a Glance*

14 Students selected in Mobiloit Technologies Pvt.Ltd with the Package of 4.20 Lac drive held on 7 September 2018 at REC Banda



3 Students of Rajkiya Engineering College Banda got selected in Accenture with the Package of 3.2 Lac drive held on 26 December 2018

छात्र आदर्श सागर का बिजनेस  
डेवलपमेंट एसोसिएट पद पर चयन

अंतर्रा (एसएनवी)। नार के बाद रोही स्थित राजकीय इंजीनियरिंग कलेज के मैकेनिकल इंजीनियरिंग विभाग में अध्ययन तहाँ तक आदर्श कुमार का बालाकर्ष कंपनी में विजेन्स डेवलपमेंट एसोसिएट के पद पर चयन हुआ है। छात्र की समर्पण से प्रभामंट एसोसिएट एवं छात्रों के बीच खुशी की लहर दौड़ रही। राजकीय इंजीनियरिंग कलेज के मैकेनिकल इंजीनियरिंग छात्र आदर्श कुमार सामाजिक कावारजूस कंपनी में विजेन्स डेवलपमेंट एसोसिएट के पद पर 10 लाख रुपाई पैकेज में हुआ चयन।

बताये चले बावजूद कंपनी विध्युत के क्षेत्र से संबंधित है जिसका एक लम्हा ऐप है जिसके माध्यम से लैकर उत्तरांशिका के छात्रों को अत्यन्त सामान्य उपलब्ध कराती है। कंपनी भारत में विद्योनी परीक्षाओं जैसे अर्थार्डी, जेईई, नोट, कैट, आईआरएस के साथ-साथ अंतर्राष्ट्रीय परीक्षाओं जैसे आईआईटी, जैमैट लिए भी छात्रों को प्रशिक्षित करती है। आदर्श के इस सफलता पर संयम के निर्देशक प्रोफेसर एस्पी शुक्ला एवं एस्पी कुलासविध आशुषोष तिवारी ने खुशी जाहिर करते हुए उनके डॉक्यूमेंट भविष्यत की कामान की है। देनिगंग एवं प्लॉटेक्टो क्रोक्ट प्रभारी आशीष श्रीवास्तव ने भी हार्दिक झूक किया है।

Mr. Adarsh Sagar, student of Mechanical Engineering, got selected in Byjus with the package of 10 Lac drive held on 21 January 2019.



24 Students selected in Cinif Technologies with the package of 2.4 Lac drive held on 25 February 2019 at REC Banda



13 Students selected in Wane Technologies with the package of 1.8 Lac drive held on 22 February 2019 at REC Banda



2 Students selected in HCL with the package of 2.7 Lac & 4 Students selected in Morling Global (P) Ltd. Intern (Rs. 60000) drive held on 8 March 2019 drive held at REC Banda



6 Students got selected in Singsys with the package of 2.4 Lac drive held on 6 March 2019 at REC Banda



Mr. Harshit Shakya Student of Information Technology Branch of REC Banda got selected in HCL with the package 2.16 Lac drive held on 6 March 2019



## Sponsored R&D Projects in-Hand

S.no	Title	Funding agency	Area	Name of PI/Co-PI
01	IoT enabled smart solid waste management system for rural areas.	CRS Scheme, TEQIP-III Grant: 9,92,000/-	Information Communication Technology	PI: Mr. Umar Badr Shafeequ (NPIU, REC Banda) CO-PI: Dr. Vibhash Yadav Mr. Tauseef Ahmad (REC Azamgarh)
02	Development and modeling of polycarbonate solar PV-T panel.	CRS Scheme, TEQIP-III Grant: 10,36,000/-	Mechanical Engineering	PI: Mr. Siddhartha Kosti (REC Banda) CO-PI: Mr. Deep Thakur (REC Banda) Mr. Chandra Malvi (MITS Gwalior) Mr. Sanjeev Vishwakarma (Jorhat Engg. College, Jorhat)
03	Prevention of Thermal Damage to Turbine Blade	Teachers Associateship for Research Excellence (TARE) File no: TAR/2018/000310	Physics	PI: Dr. Ashutosh Tiwari
04	Basics of Physics (Lab ID: 149)	IIT kanpur, Virtual Lab Development	Physical sciences	PI: Prof. Kantes Balani, IIT Kanpur. CO-PI: Dr. Ashutosh Tiwari (Virtual Lab Nodal Center Coordinator)
05	Development of IoT and Drone based Agriculture Monitoring System with Objective of Skill Development of Socially Deprived Community	Ministry of Electronics and Information Technology (MEITY) New Delhi Estimated Cost: 1.05 Crores Estimated Duration: 1.5 Years		Chief Investigator : Prof. Sanjay Kumar Soni (ii) Co-investigators: Dr. Prabhakar Tiwari, Associate Prof., MMMUT Gorakhpur Dr Brijesh Kumar, Associate Prof., MMMUT Gorakhpur Dr. Rajan Mishra, Assistant Prof., MMMUT Gorakhpur (MMMUT Gorakhpur, REC Banda, REC Ambedkar Nagar, REC Bijnor.) <b>Investigators of the project from participating institutes</b> Dr S.P. Singh (Associate Prof., REC Ambedkar Nagar, M: 9451051969)



				<p>Dr M Aslam Husain (Assistant Prof., REC Ambedkar Nagar, M: 9451663915)</p> <p>Dr. A K Mishra (Director &amp; Scientist-C(DRDO), REC Ambedkar Nagar)</p> <p>Dr. Anurag Chauhan (Assistant Prof., REC Banda, M: 8171015620)</p> <p>Dr. M. Tauseef Khan (Assistant Prof., REC Banda)</p> <p>Dr Navneet Kumar (Assistant Prof., REC Bijnor, M: 9456993646)</p>
--	--	--	--	---



## *Candidate Completed / Doing Ph.D*

Ph.D. Scholar under Homi Bhabha Research Cum Teaching Fellowship

**Name:** Pradeep Kumar Verma

**Department:** Environmental Science and Engineering

**Name of university:** AKTU Lucknow

**Enrollment date/year:** 13/03/2019

**Research field:** Atmospheric Science

**Topic:** Study of Aerosol Cloud interactions by using different types of remote sensing instruments

**Name of supervisor:** Prof. S.P. Shukla (Director, REC Banda)





## *Journals and Conferences Publications*

### **Journals**

Nishant Gupta, Mayank Singh, Vibhash Yadav, "A Novel Approach in Test Case Selection Using Code Coverage Analysis", **SCOPUS** indexed Journal – International Journal of Recent Technology and Engineering (IJRTE), Vol-07, Issue 6C April 2019, Page 149-154, ISSN 2277-3878.

Sandhya Tarar, Vyomika Singh, Vibhash Yadav, Shekhar Singh, Hemant Gupta, "Optimized Variationa Bayesian Extreme Learning Machine Algorithm for Multi Model Biometric Recognition", **SCOPUS** indexed Journal – International Journal of Engineering and Advanced Technology (IJEAT), Volume-8, Issue-4C, April 2019, page 36-43, ISSN 2249-8958.

Richa Dixit and Vibhash Yadav, "Stochastic Markov Model Approach for Efficient Virtual Machines Scheduling on Private cloud", **SCOPUS** indexed Journal - Journal of Advanced research in Dynamical and Control Systems (JARDCS), Vol-10,14- Special Issue 2018, Page 1285-1291, ISSN 1943-023X.

Nishant Gupta, Vibhash Yadav, Mayank Singh, "Regression Test Case Generation & Prioritization for Web Application: A Survey" **ACM Computing Surveys (SCI)**, Volume 51, No.4, Article 87, Sept. 2018.

Vijay Yadav, Dr. Vibhash Yadav, Prof. Raghuraj Singh, "An Automated Software Cost and Schedule Measurement Tool for OO System using Predictive Object Point Sizing Metrics" International Journal of Engineering Technologies and Innovative Research (JETIR), ISSN 2349-5162, Volume 5, Issue 2, February 2018.

Richa Dixit, Rahul Singhai, Vibhash Yadav, "An Algorithm Based On Evolutionary Genetic and Repellent Gravitational Search Algorithm with Exponential Kbest for Load Balancing in VM for Clouds. "SCOPUS indexed Journal – TEST Engineering and Management, Vol-83, Page 11720-11729,ISSN0193-4120.

Pushpendra Singh, L.S.Titare, S.C.Choube, L.D.Aryad, "Security assessment accounting uncertainties in line parameters and control variables with the considerations of transmission line unavailability". Journal of Electrical System and Information Technology, 5, 2018, 576-593.

Mahendra Raj Singh, Pushepnra Singh, Pankaj Kumar Shrivastava, "Modeling and optimization of quality parameters in EDM of superalloy using evolutionary techniques". International Journal for Research in Engineering Application & Management (IJREAM), 5(2), May 2019.



Shrihar Pandey, Pankaj Kumar Shrivastava, Shivam Dangi & Pushpendra Singh, “Experimental modelling and optimisation of electrical arc machining of Al-B<sub>4</sub>C metal matrix composite”, Australian Journal of Mechanical Engineering, DOI: 10.1080/14484846.2019.1701395, 2019.

Amit Parashar and Shailendra Badal, “Chemical investigation of pomegranates and its Health Benefits”, International Journal of Advanced Biochemistry Research (Print: ISSN 2617-4693, Online: ISSN (2617-4707), 2(2), 08-12, 2018.

Shailendra Badal, “3-Hydroxy-8-Methoxy Flavone-7-O- $\alpha$ -L-Arabinofuranosyl-(1 $\rightarrow$ 4)-O- $\beta$ -D-Galactopyranoside From the roots of Grangea Maderaspatana poir”, International Journal of Chemical Science, Vol.-16(4), 2018.

Nikhilesh Singh Thakur, Deep Singh Thakur, Ajit Upadhyaya, “Destination Image An Actor To Influence The Perception Of Tourist Decision: A Case Study Of Madhya Pradesh”, ZENITH International Journal of Multidisciplinary Research, Vol.8 (2), FEBRUARY (2018), pp. 161-167, 2231-5780.

Nikhilesh Singh Thakur, Deep Singh Thakur, Ajit Upadhyaya, “Dubai: Excellence in Destination Branding”, Scholars Journal of Arts, Humanities and Social Science, 2347-5374(online), 2347-9493(print).

Ramu Dubey, Teekam Singh, Amit Tripathi, Dinesh Kumar, “Durability relations for a non-differentiable minimax fractional programming problem under generalized convexity”. Nonlinear Studies, 26(2), 365-377.

Anuj Kumar Singh, Archana Singh, “Information and Communication Technology: A Road to Hybrid Teaching & Learning Pedagogy”, International Journal of Engineering & Technology (UAE), volume 7, Issue 3.12, pp 978-981, 2227-524X, Scopus Indexed, Impact factor: 0.1.

Pooja Singh and Dania Masood, “Equivariant Complete Invariance Property on a Subspace of Two-interval Wavelets”, Poincare Journal of Analysis and Applications, 2019 (2), 115-121.

Siddhartha Kosti, “Heat-flux and convective boundary influence on nano-fluids filled cavity”, Journal name: Emerging Materials Research, DOI: 10.1680/jemmr.17.00074.

Neeraj Tantubay and Jyoti Bharti, “A Survey of Biometric Key-Binding Biocrypto-System using different Techniques”. International Journal on Emerging Technologies, 11(1): 421–432. 2020.

Surendra Kumar, “Central Patronage Schemes for Fostering MSMEs” MSMEs in India, (2018) 369 ISBN-978-81-939110-7-5



Amit Tripathi, "Duality Relations for a Nondifferentiable Minimax Fractional Programming Problem under Generalized Convexity" Non linear Statics 26 (2) 2019 365-377, ISSN/ISBN NO. 1359-8678

## Conferences

Siddharth Arjaria, Jincy M., "Polarity Based SVM Techniques for Analyzing Movie Review" (March 11, 2019). Proceedings of 2nd International Conference on Advanced Computing and Software Engineering (ICACSE) 2019, KNIT Sultanpur, 8-9 March 2019.

M Agrawal, A S Rathore, S Arjaria, A Sinha, S Gupta, "ToLeD: Tomato Leaf Disease Detection using Convolution Neural Network," In Proc. International Conference on Computational Intelligence and Data Science, Procedia Computer Science, Gurugram, India, 2019.

Novel Reactions Of Some  $\Gamma$ -Keto Acids & Femo, 6<sup>th</sup> World Congress Conference on topic Chemistry, Biology Interface synergetic in new frontiers & Science and Tech. for future mankind, Delhi University & Jamia Hamdard University, 7-9, Jan. 2019.

3-(p-chlorophenyl)-3-(2, 4-dihydroxyphenyl) phthalide- A new Adsorbent Indicator Using for Argiometric Titration, International Conference (ICETTA-2019) on topic Emerging Trends in Technology & Application, R.E.C., Kannoj, 01-02 Feb, 2019.

A new Adsorbent Indicator 3-(2, 4-dihydroxyphenyl)-3-(2-thienyl) phthal-as-ein Using for Argentometric Titration, National Conference on Recent Trends in Chemical Engineering & Environmental Protection, B.I.E.T., Jhansi, 30 March 2019.

Mohd Tauseef Khan, Anurag Chauhan, Anwar Shahzad Siddiqui,"Wide Area Control of Power System Using FACTS Device", MARC-2018, Springer Conference, HMR Institute of Technology and Management, Delhi, 19-20 July 2018.

Anurag Chauhan, Mohd Tauseef Khan, Ashish Srivastava, R. P. Saini, "Performance Optimization of a Grid Connected PV/Biomass Based Hybrid Energy System using BBO Algorithm", MARC-2018, Springer Conference, HMR Institute of Technology and Management, Delhi, 19-20 July 2018.

Anurag Chauhan, Mohd Tauseef Khan , Ashish Srivastava, "Design And Development of a Small Scale Hybrid System for a Remote Area", ICPEICES-2018, IEEE Conference, Delhi Technological University, New Delhi, 22-24 October 2018.

Mohd Tauseef Khan, SM Suhail Hussain, Taha Selim Ustun, "Impact of FACTS devices on Market Power", SPIN-2019, IEEE conference, Amity University, Noida, UP, 7-8 March 2019.

Ashish Srivastava, Deepak Pandey , Anurag Chauhan, Ashish Tripathi, "Performance Analysis of Diode Clamped Inverter Fed Three Phase Induction Motor Drive Using SVPWM Technique", MARC-2018, Springer Conference, HMR Institute of Technology and Management, Delhi, 19-20 July 2018.

Shreya Gupta, Dhananjay Bisen, Asmita Moghe, Shubham Jain, "Analysis of User Activities and Generation of Log File using Java Applications" (March 9, 2019). Proceedings of 2nd International



Conference on Advanced Computing and Software Engineering (ICACSE) 2019. Available at SSRN: <https://ssrn.com/abstract=3349558> or <http://dx.doi.org/10.2139/ssrn.3349558>.

Pankaj Choudhary, Upasna Singh, Sunil Dalal and Dhananjay Bisen, "Social Network Analysis (SNA): A Vision for Counter-Terrorism Approach in Modern Indian Defence Sector" (February 8, 2019). Proceedings of 2nd International Conference on Advanced Computing and Software Engineering (ICACSE) 2019. Available at SSRN: <https://ssrn.com/abstract=3349028> or <http://dx.doi.org/10.2139/ssrn.3349028>.

Ajay Kumar Panday, "Numerical modelling of buoyancy driven cavity: Application in solar concentration" has been published in International Conference "Advance Technologies in Renewable Energy for Future Sustainability", 2019, RGPV Bhopal.

Siddhartha Kosti, Chandra S. Malvi, "Effect of Reinforced Nano-Composites on AMC Solidification Curve", International Conference on Sustainable and Innovative Solutions for Current Challenges in Engineering & Technology, [https://link.springer.com/chapter/10.1007/978-3-030-44758-8\\_5](https://link.springer.com/chapter/10.1007/978-3-030-44758-8_5).

--Siddhartha Kosti, "FDTM Modeling to Analyze Flow Circulation Inside a Lid-Driven", International Conference on Sustainable and Innovative Solutions for Current Challenges in Engineering & Technology, [https://link.springer.com/chapter/10.1007/978-3-030-44758-8\\_30](https://link.springer.com/chapter/10.1007/978-3-030-44758-8_30)

## Book Chapter

S. No.	Chapter Name	Author's Name	Book name	Publication
1.	Modeling and Simulation of a Sustainable Hybrid Energy System under Changing Power Reliability Index at User End.	Dr. Anurag Chauhan	Modelling and Simulation of a Sustainable Hybrid Energy System Under Changing Power Reliability Index at User End. (page 231-248)	CRC Press Book
2.	Smart Transportation as a Tool for Smart City Branding	Mr. Deep Singh Thakur	Diverse, Divergent and Innovative Research Contemporary Issues.	Excel Publication
3.	Nanomaterials and Nanocomposites Thermal and Mechanical Properties Modelling	Mr. Siddhartha Kosti	Nanotechnology in Aerospace and Structural Mechanics (pages 234-256).	IGI Global



4.	Nanoparticles Reinforcement Effect on the MMC's Characteristics.	Mr. Siddhartha Kosti	Advances in Interdisciplinary Engineering pp 459-469	Springer
5.	Experimental Investigation of Mechanical Strength and Temperature of Friction Stir Welded Joint.	Mr. Siddhartha Kosti	Advances in Engineering Design pp 631-639	Springer
6.	SWOT Analysis of Literature	Mr. Siddhartha Kosti	Creating a Framework for Dissertation Preparation: Emerging Research and Opportunities	IGI Global



## *Start-ups and Innovations*

### Activities of Start-up (2018-19)



Motivational Talk by Dr. Heera Lal (IAS)  
- (Date: 07 December 2018)

India's First Leadership Talk Series  
(Webinar) by Dr. Anand Deshpande: (Date:  
24 January 2019)

### **Innovation & Startup Summit 2k19 held at Government Medical College, Banda (Date: 28 to 30 January 2019)**

The Zila Vigyan Club Banda has organized an Innovation & Start UP Summit 2019 at district Banda. The three-day summit was held from 28 to 30 January at Rajkiya Medical College Banda. It provides a platform for idealistic innovators from the whole Bundelkhand and around the state with a passion for creating sustainable development solutions and economic improvements. The representatives of different government organizations/institutions/enterprises will provide wings to innovators dreams and their start-up. The Student and faculty members of REC Banda actively participated in the events. The students of the institute represent their models in the summit.



## Innovation Start-Up Summit in Banda from January 28

CORRESPONDENT ■ BANDA

The Innovation Start-Up Summit would be organised from January 28 to 30 at the Gurukul Kangri Central College here. This information was given to mediapersons of all media by Mr. Hemant Lal, the District Magistrate, Dehra Dun, here.

He said that it was an important programme for the people of Bundelkhand area which was being organised for the first time in the history of the district. There would be stalls of Innovation Expo of quality products of the state and 100 stalls out of which 70 would be government and 30 private ones.

This programme was a learning programme and said that it would make the people aware of the various schemes being run for the development of the area. He also gave the latest information about the training programmes available in different fields of which they could take maximum advantage for their professional works. The participants in this programme would be the sci-



DM Hemant Lal conveying information to mediapersons about the Innovation Start-Up Summit to be organised in Banda

entists, intellectuals, inventors, students, farmers, traders and artisans, labourers of Bundelkhand area and of some other districts of the state.

The DM said that their aim was to make the people of the Bundelkhand area self-reliant by motivating them to augment their involvement in such innovative works.

He said after observing the problems of the people of the area he found that there is a lack of awareness among the men,

traders so that they could do things differently for making the area self-reliant.

DM said that the message of

Summit would be conveyed to the villages by gram panchayats, tehsil pats, farmers and male and female students of government schools who would take part in the programme. Workshops would also be organised on seven different themes and would be conducted on both urban and rural development, skill development, allied business and from health and education point of view. The DM made an appeal to the people to give their best possible support in making the people aware about this programme for the overall all-round development of the society.



## Idea Pitching Competition: (Date: 04 February, 2019)

IIC is looking forward to paving the way for them to make them reach their milestone. For preparation of Smart India Hackathon 2019 Idea Pitching Competition was organized in REC Banda. All the registered participants presented their ideas, market research and models in front of faculty members and students.





### A expert talk on start-up and Entrepreneurship (Webinar) by Mr. Sharad Goyal: (Date: 06 February, 2019)

IIC REC Banda has organized a webinar on startup and Entrepreneurship on 06 feb 2019. The Speaker of the webinar was Mr. Sharad Goyal, who has 34 year of vast industry experience in India's prestigious manufacturing and petrochemical sector organizations. Addressing to students, He explained the role of planning for the startups. Good planning in the right direction is the key to success for the startups. About 50 student and faculty members participated in the event.



### Dr. Kalam Startup Parikrama and One Day Workshop on ‘Entrepreneurship: A ray of Hope for small cities’: (Date: 08 February, 2019)

IIC organized Dr. Kalam Startup Parikrama and Idea Pitching Competition. It was conducted by experts on 08 February 2019. This event was attended by a total of 140 students present in the conference hall of the college.

The students are motivated by three motivational speakers Mr. Suneel Pankaj (SIDBI), Prem Prakash (SIDBI) & Shaival Bhatnagar (IED Lucknow) on the topic such as Entrepreneurship , Startup and shared some inspiring success stories.

Idea Pitching Competition was held in the second half. After evaluation by jury the winners got a cash prize of 10k₹, 5k₹ and 3k₹ respectively among all the participants, Ms. Akanksha Rani & Mr. Deepak Singh secured first position.

The activity was organized under the Institute Innovation Council and coordinated by Dr. Siddhartha Arjaria (IIC Head) and Mr. Abhijeet Singh (Member IIC).



**A webinar by Prof. Anil D. Sahasrabudhe, Chairman, AICTE, New Delhi: (Date: 18 February 2019)**

IIC organized a webinar by Prof. Anil D. Sahasrabudhe, Chairman, AICTE, New Delhi on 18 February 2019. This webinar was attended by a total of 45 students present in Electronic Class Room -3.

Students were made aware by Prof. Anil D. Sahasrabudhe about the ideology of Smart India Hackathon 2019. The students were extremely motivated for innovative thinking and to think out of the box. The students participated in it with a great zeal and enthusiasm and hence made the programme a grand success.





### A expert talk on start-up and Entrepreneurship (Webinar) by Mr. Ajit Doval: (Date: 21 February, 2019)

IIC REC Banda is organizing expert talk on Start-up and Entrepreneurship through Webinar by Speaker Mr. Ajit Doval.



### A half-day workshop on Intellectual Property Rights By Mr. Aman Kumar (Alumni, 2014 batch): (Date: 8 March, 2019)

IIC- RECB has organized a half-day workshop on Intellectual Property Rights By Mr. Aman Kumar (Alumni, 2014 batch) currently working as Patent Examiner at Indian Patent Office on 08 March 2019. The speaker thoroughly explains the procedure of patent filing and criteria of patent evaluation the participants also understand which product or process can be filed for patent. He encourages the students to think critically and analytically to be successful in this technological world. About 50 students and faculty members participated in the event.





Two Half-day workshop on the ‘Cognitive skills and critical thinking’ & ‘Leadership skills and stress management’: (Date: 18 April, 2019)

The Institution's Innovation Council of Rajkiya Engineering College, Banda organized two half-day workshops. The title of the workshop of the first session was ‘Cognitive skills and critical thinking’. Talking on the topic Prof. Braj Bhushan of IIT Kanpur informed the students about identifying the cognitive skills and enhancing them. He emphasized that to keep pace with the changing world; we must have good coordination between different domains of engineering.

The title for the second session of the workshop was ‘Leadership skills and stress management’. Talking on the topic, Sri A K Srivastava, Ex-DGM of ITI, gave some useful tips for success in today's competitive world and stress free life.



#### REC BANDA ORGANIZED A WORKSHOP

The Institution's Innovation Council of Rajkiya Engineering College, Banda organized two half-day workshops. The title of the workshop of the first session was ‘Cognitive skills and critical thinking’. Talking on the topic Professor Braj Bhushan of IIT Kanpur informed the students about identifying the cognitive skills and enhancing them. He emphasized that to keep pace with the changing world; we must have good coordination between different domains of engineering. The title for the second session of the workshop was Leadership skills and stress management. Talking on the topic, A K Srivastava, ex-DGM of ITI, gave some useful tips for success in today's competitive world and stress-free life. The workshop was coordinated by Deep Singh Thakur and Abhishek Singh. At last, IIC president Dr Siddhartha Arjaria gave away the vote of thanks.



The Indian EXPRESS Fri, 03 May 2019  
epaper editions epaper.indianexpress.com/c/39051345





## Collaborations

S. No	Name of Collaborative activities	Date/ Duration	Collaborative Institute	No of Participant
1	04 weeks summer internship of 3rd Year Students of REC Banda at NIE Mysuru	21 /06/2018 To 19/07/2018	NIE Mysuru and REC Banda	45 Students
2	Expert Talk (IT,EE,ME) given by 03 Faculty Members of NIE Mysuru in Induction Programme at REC Banda	09/08/2018 To 10/08/2018	NIE Mysuru and REC Banda	All First Year Students
3	03 Days Student Training Programme on Theory Subjects of IT and ME Departments at REC Banda	18/09/2018 To 20/09/2018	NIE Mysuru and REC Banda	100 Students
4	FDP on Applications of Artificial Intelligence at IT Department in REC Banda	30/10/2018 To 03/11/2018	NIE Mysuru and REC Banda	29 Faculty
5	FDP on Advance Materials, Modelling and Manufacturing at ME Department in REC Banda	27/11/2018 To 01/12/2018	NIE Mysuru and REC Banda	10 Faculty
6	Training under Technocruise (TECHKRITI) 2018-19 at REC Banda	01/12/2018 To 02/12/2018	Techkriti IIT Kanpur and REC Banda	144 Students
7	02 Weeks Student Training Programme for ME 3rd Year Students of REC Banda at NIE Mysuru	09/01/2019 To 23/01/2019	NIE Mysuru and REC Banda	20 Students
8	Three days workshop on AI and ML offered by CSE/ISE department and for collaborative research activities at NIE Mysuru	17/06/2019 To 19/06/2019	NIE Mysuru and REC Banda	4 Faculty



## Curricular and Co-curricular Achievement

To uplift the knowledge/ expertise level of students and faculty members to national/ international level through online courses SWAYAM MOOCS, NPTEL (National Programme on Technology Enhanced Learning) Local Chapter has been setup in Rajkiya Engineering College Banda in Feb. 2018 under the NPTEL Nodal centre at IIT Kanpur. The college offered full reimbursement of fee of SWAYAM courses to the students and faculties members of the college through TEQIP-III. From July 2018-June 2019, 661 students and 17 faculties of the college have been benefited by this scheme. The college also facilitates as an online/ offline exam center for NPTEL courses. The college has also set up SWAYAM PRABHA channels as self-learning / learning resource beyond syllabus.





## Alumni Meet

In the academic year 2018-19, the 2<sup>nd</sup> Alumni Meet was organized on 10<sup>th</sup> March 2019. Distinguished alumni participated in this event. Alumni Meet provides a platform to its former students to maintain connections with their Alma Mater and also amongst themselves and their junior fellows.





## Induction Programme

Induction programme is an initiative to groom the overall personality of students and make them acquainted with the culture of the institute. A three week induction programme for the first year students was held from 1st August to 21 August 2018. The aim of the programme was to ensure that every student feels welcomed, engaged and excited to begin this new important stage in their education. The idea was to make the students aware of their prospective opportunities and to show them the path they have to adopt in order to become successful engineers.

The session of Creative Arts, Human Values & Professional Ethics, and Yoga were conducted daily. Each student was assigned one mentor to establish a healthy relationship and bonding with the faculty members and to know the working culture of the organization. Series of expert lectures and motivational talks were conducted to give exposure to different walks of life. Experts from premiere institutes were invited to deliver lectures. Local excursions were organized to provide historical and religious importance of the nearby places.



Know Your Department



Creative Arts



Adopting Plant



Yoga Session



## Extra-Curricular Activities

Sr. No.	Name of Event	Date	
1.	Rashtriya Sankalp Diwas	31 Oct. 2018	2 minute silence was observed to commemorate the death anniversary of late Smt. Indira Gandhi.
2.	 Clothes Distribution	02 Nov. 2018	"Prayaas Ek Pahal, the social Club of REC Banda is active in the social service in the nearby area of college.
3.	 National Education Day	11 Nov. 2018	National Education Day is an annual observance in India to commemorate the birth anniversary of Maulana <a href="#">Abul Kalam Azad</a> , the first <a href="#">education minister</a> of independent India, who served from 15 August 1947 until 2 February 1958
4.	 Literary and Fine Arts Annual Fest Muktakash 2018-19	18 to 20 Nov. 2018	An annual Literary and Fine Arts Festival of Rajkiya Engineering College Banda.



5.	 Mahaparinirvan Diwas	06 Dec. 2018	A candle march was organized in the evening to commemorate the efforts Bhimrao Ramji Ambedkar. This day is observed as Mahaparinirvan to urge the students to work for the welfare of the people.
6.	 Kisan Samman Diwas	23 Dec. 2018	Speeches and poem recitation were organized to celebrate the birth anniversary of our former prime minister late Chaudhary Charan Singh.
7.	 Good Governance Day	25 Dec. 2018	To celebrate the birth anniversary of former prime minister Atal Bihari Vajpayee as Good Governance Day. The Club organized the following events: poetry recitals, extempore etc.
8	 International Day of Yoga	21 June 2019	Mr. Ram Kishore, Faculty, Art of Living was invited to train on International Day of Yoga.



## REVERB: The Annual Cultural Fest

The annual cultural fest of Rajkiya Engineering College Banda was held in central ground of the college on 9<sup>th</sup> and 10<sup>th</sup> March 2019 in a befitting manner. It was a two days long programme constituting a number of heart touching performances. Presided over by the Director of the college, the function was attended by District Magistrate of Banda, Shree Heera Lal, as the chief guest for the first day of the function while Dr.Anshuman Tripathi and Dr.Brij.N.Singh from USA were the chief guest and guest of honor respectively for the second day of the programme.





## Avatar: The Annual Tech Fest

On 9 April 2019 and 10 April 2019 Rajkiya Engineering College Banda organized its Annual Technical Fest "Avatar 2k19". In this Technical Fest Technocrats presented their Science and Technical Models. More than 25 models were presented. In this event more than 200 students from various schools across the city exhibited their models. A lot of events were hosted including Robotics, Hacking, Coding, Rocket Launchers, and Machine Learning etc.



रा. अपामा, पर. उपायकरण का। राजकीय इंजीनियरिंग कॉलेज में गुहवार को वर्षिक टेक्नोफेस्ट अवतार-2019 का आयोजन किया गया। इसमें तकनीकी व अभियांत्रिक छात्रों ने 27 मॉडलों का प्रदर्शन किया।

कॉलेज डीन डॉ. विभाष यादव ने कहा कि तकनीक का इस्तेमाल समाज के हित में होना चाहिए। रोबोटिक्स, हैरिंग, कोडिंग, रकिट लॉचर, मशीन लर्निंग आदि इंवेंटेस प्रस्तुत किए। कार्बनक्रम संस्थानकर्ता डॉ. सिद्धार्थ अरजीराया ने कहा कि नगर के लक्ष्यों वाले मेमोरियल, शतकियाम मूर्ग के लगभग 200 छात्र-छात्राओं ने नए मॉडलों को देखा। संस्थान निदेशक डॉ. एसपी शुक्ला, डॉ. आशुलोप तिवारी, डॉ. अमित त्रिपाठी, डॉ. पुष्टं शिंह, अधिकारी सिंह आदि मौजूद रहे। व्यापक समर्पण की जा रही है।





## PACE : The Annual Sports Fest

Sports build good habits, confidence, and discipline. They make players into community leaders and teach them how to strive for a goal, handle mistakes, and cherish growth opportunities. Rajkiya Engineering College Banda, every year, encourage its students to participate in various sports activities at various levels to showcase sportsmanship in budding engineers. Every year institute organizes annual Sports Fest- PACE, to enhance sportsmanship in students. PACE consist of various events like Badminton volleyball Basketball Football Cricket Table tennis Chess Carom. The in-charge of sports is Mr. Akshay Kant and this year institute captions are Mr. Sandeep Saroj and Ms. Sakshi.



### Participation of Students in Inter Institute Sport Events

Students of the institute also get a chance to explore themselves at various zonal level, state level, and national level sports fest. This year team from REC Banda participated at the zonal level Sports fest organized by S R group of institution, Lucknow.



**THE MEDAL TALLY FOR REC BANDA**

S.No.	Event Name	Player's Name	Branch	Year	Position
1.	Table tennis(Girls) <b>(Qualified for State Level)</b>	Krishna Gautel	EE	Final	First position
		Anka Devi	IT	Final	
		Manisha Pal	ME	Second	
2.	Javlien Throw	Anka Devi Pinki Kumari	IT EE	Final Second	Second position Third position
3.	Table tennis(Boys)	Anuj kumar Vashishtha Yadav Vaibhav Raj Shivam Verma	ME EE EE ME	Final Third Final Second	Third position
4.	Badminton(girls)	Pratibha Singh Shivani Kumari Sashi	ME IT EE	Third Second Second	Third position
5.	800m race	Chanchal Maurya	EE	First	Third position
6.	400m race	Chanchal Maurya	EE	First	Third position
7.	Relay race	Sakshi Renu Kumari Sarita Devi Chanchal Maurya	ME EE IT EE	Final Final First First	Third position
8.	Short put	Sandeep Saroj	EE	Final	Third position



## Ranking & Recognitions of REC Banda

Achievement of start-up (2018-19):

### 1. IIC REC Banda secured four star Grading.

The Institution's Innovation council is awarded with the four stars grading by MHRD for undertaking all the activities prescribed by Innovation cell, MHRD to promote the innovation and start-ups in the campus during the IIC Calendar year 2018-19.



### 2. First position in Dr. Kalam Entrepreneurship League in Quarter 1 of calendar year 2019:

REC Banda secured **First position in Dr. Kalam Entrepreneurship League in Quarter 1** of calendar year 2019 for their activity related to start-up and entrepreneurship.





### 3. NPTEL Recognitions

**CONGRATULATIONS**  
SWAYAM-NPTEL recognizes  
RAJKIYA ENGINEERING COLLEGE  
BANDA, UTTAR PRADESH  
as a valuable Local Chapter with a rating of **A**  
based on performance in NPTEL Online Certification courses  
Jul - Oct 2018

*B. Ramamurthy*  
Prof. BHASKAR RAMAMURTHY  
Chairman, NPTEL IIC  
Director, ST Madras

Rating of NPTEL Local Chapters : AAA - 10; AA - 8; A - 50

Top performing students/Faculties

Course Id	Course Name	Name	Email ID	Certificate Type	Topper
noc18-hs30	Developing Soft Skills and Personality	SAUMYA SRIVASTAVA	saumyassrivastava58200@gmail.com	Elite+gold	Topper of 1% in this course
noc18-me45	Laws of thermodynamics	NEERAJ KUMAR	neerajkumar8601396406@gmail.com	Elite+gold	Topper of 1% in this course
noc18-ee15	Electrical Distribution System Analysis	GURU SHARAN SINGH	gurusharsingsh16@gmail.com	Elite	Topper of 2% in this course
noc18-hs30	Developing Soft Skills and Personality	AVINYASH SINGH	avinayash17@gmail.com	Elite+gold	Topper of 2% in this course
noc18-me45	Laws of thermodynamics	BRIJESH KUMAR	brijeshkumar1551997@gmail.com	Elite	Topper of 2% in this course
noc18-ee17	Recent Advances in Transmission Insulators	GURU SHARAN SINGH	gurusharsingsh16@gmail.com	Elite	Topper of 5% in this course
noc18-ge14	Non-Conventional Energy Resources	DR. MANOJ K. SINGH	m.singh@recbanda.ac.in	Elite+Gold	Topper of 5% in this course
noc18-hs30	Developing Soft Skills and Personality	AMIT KUMAR YADAV	amity22@gmail.com	Elite	Topper of 5% in this course
noc19-cs06	Problem solving through Programming in C	SHIVANGI GUPTA	shivangiguptaoct11@gmail.com	Elite+Silver	Topper of 5% in this course
noc19-me20	Manufacturing Process Technology	PRASHANT KUMAR	prashantkumar.pi-8923@gmail.com	Elite+Silver	Topper of 2% in this course
noc19-hs22	Enhancing Soft Skills and Personality	SAUMYA SRIVASTAVA	saumyassrivastava58200@gmail.com	Elite+Gold	Topper of 1% in this course



## Awards & Achievements Bagged by Students

### 1. First Start-Up registered by REC Banda students

After getting inspired from young Entrepreneurs, two Final year students of Rajkiya Engineering College Banda: Mr. Deepak Singh & Ms. Akanksha Rani have registered their company “Akade Embedded Technologies LLP” as a LLP on 12 Dec 2018 during their studies. This company has been recognized as a STARTUP by DIPP on 01 February 2019.



### 2. Students' Project Got Selected in Nidhi Prayas

The project of students of Rajkiya Engineering College, Banda has been selected under the scheme of “NIDHI PRAYAS” of I- Create Organization of Gujarat Government; the scheme launched is a pre-incubation initiative, specifically supports young innovators turn their ideas into proof-of-concepts. Under this scheme, to encourage the potential of Entrepreneurship skill in the students, they provided the scholarship of INR 50000 to the students. The students have replaced the traditional Horns in the Vehicle by a horn based on Radio and Light waves in order to reduce the noise the pollution. This model is proposed by Second Year students of Mechanical Engineering Department, **Akhilesh Kumar Tejasvi, Saurav Kumar, Ridhi Pandey, Sachin Shakya, Manisha Pal** and one student of Information Technology of second year **Somendra Shekhar**; under the guidance of Assistant Professor Mr. Abhijeet Singh.





# Financial Information: Funds Received & Spent

## State Budget

<b>Funds Received &amp; Spent</b>	FUND RECEIVED: 600.89 LACS
	EXPENDITURE: 743.39 LACS

## TEQIP-III, Budget

<b>Funds Received &amp; Spent</b>	FUND RECEIVED: 314.95 LACS
	EXPENDITURE: 314.95 LACS

## RECEIPT AND PAYMENT

RECEIPTS			PAYMENTS		
Sl No.	Particulars	For the Current Year Amount (Rs.)	Sl No.	Particulars	For the Current Year Amount (Rs.)
1	Opening Balance as on 01.10.2018	-	1	Procurement of goods	-
a) Cash	-	-	1	Equipments	1,05,81,849.00
b) Bank	-	-	2	Learning Resources	74,09,246.00
2	Grant Received	3,14,95,744.00	3	Furniture	21,71,939.00
				ACADEMIC PROCESSES	-
			4	Improve Students Learning	23,86,695.00
			5	Graduate Employability	16,59,502.00
			6	Faculty/Staff Development and motivation	15,90,138.00
			7	Research and development	58,141.00
			8	MOOCs and digital learning	2,87,700.00
			9	Mentoring/Twinning System	3,20,403.00
			10	Reforms and governance	2,33,336.00
			11	Industry-Institute Interaction	8,53,460.00
				OPERATING COSTS	-
			12	Consumables	98,649.00
			13	Operation and Maintenance	3,600.00
			14	Office Expenses	2,19,948.00
			15	Meetings	1,32,564.00
			16	Travel Cost	69,643.00
			17	Salary	6,00,939.00
				Facility Reforms	-
			18	Quality Teachers	32,16,989.00
				Closing Balance as on 31.03.2019	321,989.00
			a) Cash	-	-
			b) Bank	-	-
	TOTAL	3,14,95,744.00	TOTAL	3,14,95,744.00	3,14,95,744.00

AUDITORS REPORT  
As per our separate report of even date  
For Sanjeev Bhiram Verma & Co  
Chartered Accountants  
FIRN. NO. 1443C  
*[Signature]*  
Partner  
M. No. 07180  
Place  
Date  
21/6/19

For Rajkiya Engineering College Banda U.P.  
*[Signature]*  
Project Coordinator  
Coordinator  
TEQIP-III  
Nodal Officer (Finance)  
TEQIP-III  
*[Signature]*  
Director  
Rajkiya Engineering College Banda U.P.  
*[Signature]*



## RECONCILIATION OF CLAIMS

TECHNICAL EDUCATION QUALITY IMPROVEMENT PROGRAMME (TEQIP) PHASE – III  
Rajkiya Engineering College Banda U.P.

Name of the Project TEQIP-III

Credit No.

Reconciliation of Claims to Total Applications of Funds:

Report for the year ended 31 March 2019

Component	Amt. (Rs.)		
	Current Year	Previous Year	Project to date
Bank Funds claimed during the year (A)	₹ 3,14,95,744.00	₹ 7,36,160.00	₹ 3,14,95,744.00
1.1.1.1 (Equipments)	10581849.00		10581849.00
1.1.1.2 (Learning Resources)	7409246.00		7409246.00
1.1.1.2 (Furniture)	2171939.00		2171939.00
1.1.2.1 (Improve Students Learning)	2386695.00	148793.00	2386695.00
1.1.2.3 (Graduates Employability)	1059502.00	36699.00	1059502.00
1.1.2.4 (Faculty/Staff Development and motivation)	1590138.00	263040.00	1590138.00
1.1.2.5 (Research and development)	58144.00		58144.00
1.1.2.6 (MOOC's and digital learning)	287700.00		287700.00
1.1.2.7 (Mentoring/Twinning System)	520403.00	136253.00	520403.00
1.1.2.8 (Reforms and governance)	233336.00		233336.00
1.1.2.11 (Industry-Institute Interaction)	853460.00		853460.00
1.1.3.1 (Consumables)	99649.00	6686.00	99649.00
1.1.3.2 (Operation and Maintenance)	3600.00		3600.00
1.1.3.3 (Office Expenses)	219948.00		219948.00
1.1.3.4 (Meetings)	132564.00	120331.00	132564.00
1.1.3.6 (Travel Cost)	69643.00	24358.00	69643.00
1.1.3.7 (Salary)	600939.00		600939.00
1.1.4.1 (Quality Teachers)	3216989.00		3216989.00
Total	₹ 3,14,95,744.00	₹ 7,36,160.00	₹ 3,14,95,744.00
-	-	-	-
-	-	-	-
-	-	-	-
	3,14,95,744.00	-	3,14,95,744.00
	₹ 3,14,95,744.00	₹ 7,36,160.00	₹ 3,14,95,744.00

Less: Outstanding bills (C)  
Ineligible expenditures (D)  
Expenditures not claimed (E)  
Total Eligible Expenditure  
Claimed (F)=(B)-(C)-(D)-(E)  
World Bank Share @ x% of (F) above (G)

### AUDITORS REPORT

As per our separate report of even date

For Sanjeev Shriram Verma & Co.  
Chartered Accountants  
FRN: 00539525

*(Signature)*  
Sanjeev Verma  
Partner  
M. No. 072830  
Place  
Date: 21/6/18

For Rajkiya Engineering College Banda U.P.

*(Signature)*  
Project Coordinator  
TEQIP-III

*(Signature)*  
Director  
Rajkiya Engineering College  
Banda (उत्तराखण्ड)

*(Signature)*  
for Nodal Officer (Finance)  
TEQIP-III



## INCOME &amp; EXPENDITURE

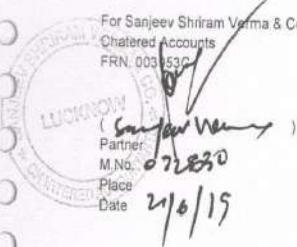
TECHNICAL EDUCATION QUALITY IMPROVEMENT PROGRAMME (TEQIP) PHASE-III  
 Rajkiya Engineering College Banda U.P.  
 INCOME & EXPENDITURE FOR THE YEAR ENDED AS ON 31-03-2019 For FY-2018-19

Previous Year	EXPENDITURE		INCOME				
	Particulars	Amount (Rs.)	Amount (Rs.)	Previous Year	Particulars	Amount (Rs.)	Amount (Rs.)
	Procurement of goods			7,36,160.00	Grant Received		3,14,95,744.00
-	Equipments	1,05,81,849.00					
-	Learning Resources	74,09,246.00					
-	Furniture	21,71,939.00					
	<b>ACADEMIC PROCESSES</b>						
1,48,793.00	Improve Students Learning	23,86,695.00		-			
36,699.00	Graduates Employability	10,59,502.00					
2,63,040.00	Faculty/Staff Development and motivation	15,90,138.00					
-	Research and development	58,144.00					
-	MOOCs and digital learning	2,87,700.00					
1,36,253.00	Mentoring/Twinning System	5,20,403.00					
-	Reforms and governance	2,33,336.00					
-	Industry-Institute Interaction	8,53,460.00					
	<b>OPERATING COSTS</b>						
6,686.00	Consumables	99,649.00					
3,600.00	Operation and Maintenance	3,600.00					
-	Office Expenses	2,19,948.00					
1,20,331.00	Meetings	1,32,564.00					
24,358.00	Travel Cost	69,643.00					
-	Salary	6,00,939.00					
	<b>Faculty Reforms</b>						
-	Quality Teachers	32,16,989.00					
7,36,160.00	<b>TOTAL</b>	3,14,95,744.00	-	<b>TOTAL</b>			3,14,95,744.00

## AUDITORS REPORT

As per our separate report of even date

For Rajkiya Engineering College Banda U.P.



For Nodal Officer (Finance)  
 TEQIP-III

Project Coordinator  
 Coordinator  
 TEQIP-III

Director  
 डिप्टी डायरेक्टर  
 राजकीय इन्जीनियरिंग कालेज  
 बांदा (उप्र०)