



# **SELF STUDY REPORT**

**FOR**

**3<sup>rd</sup> CYCLE OF ACCREDITATION**

**RAAJDHANI ENGINEERING COLLEGE**

**NEAR MANCHESWAR RAILWAY STATION, P.O. MANCHESWAR RAILWAY  
COLONY**

**751017**

**[www.rec.ac.in](http://www.rec.ac.in)**

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**NATIONAL ASSESSMENT AND ACCREDITATION COUNCIL**

**BANGALORE**

**June 2024**

# 1. EXECUTIVE SUMMARY

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## 1.1 INTRODUCTION

Raajdhani Engineering College (REC), Bhubaneswar was established in the year 2006 by Samridhhi Educational Trust, Odisha, with a group of highly talented professionals in the field of Education, Industry, Engineering and Technology over the years. The college is functioning at Bhubaneswar near Mancheswar Railway Station in a sprawling campus of 15 acres near the well known Mancheswar Railway station 5km. away from world famous Nandankanan Zoological Park. The institute is well connected with road, rail and air. It is 5km. away from NH-5, 1km. away from Mancheswar Railway station and 8 kms from Biju Pattnaik International Airport, Bhubaneswar. REC is Approved by AICTE New Delhi, Affiliated to BPUT and SCTEVT Government of Odisha, Accredited by NAAC, Recognized by Department of Scientific & Industrial Research (DSIR), Govt. of India as SIRO, ISTE & IE Chapter and Student Chapter, Institutional Member of the IE & ISTE and Vigyan Prasar Network of Science Clubs, Recognized by IEEE. Raajdhani Engineering College, Bhubaneswar is committed for creating, sustaining and improving the learning process through established quality management system, compliance to statutory & regulatory requirements and makes it a center of scientific & technological learning. Continual improvement and team work shall be our strength for achieving the set objective with its core value " Creativity & Innovation ".

### **Vision**

#### **Vision:**

To become an Institution of Academic Excellence in technical education, innovative research, and entrepreneurship.

### **Mission**

#### **Mission:**

1. To educate students through academic courses and provide knowledge of social and industrial needs.
2. To collaborate with leading academic and scientific institutions across the globe to further enhance education and research.
3. To motivate young students on a sense of social responsibility through entrepreneurship and startup.

## 1.2 Strength, Weakness, Opportunity and Challenges(SWOC)

### **Institutional Strength**

1. Positive reputation in the external community.

2. Financial sustainability and administrative autonomy which helps for the continuous growth of the institute.
3. Better coordination between the staff and management establishing a healthy work culture.
4. The institute is recognized as Scientific and Industrial Research Organization (SIRO) centre by Ministry of Science & Technology, Govt. of India.
6. Smart class rooms and use of ICT in teaching learning process.
7. Good faculty retention ratio.

### **Institutional Weakness**

1. The industry-institution interface can be enhanced further.
2. Publications in SCI journals to be improved.
3. More no of research projects from agencies like DST, AICTE must be targeted.
4. Need to involve more graduate students in research and project works.
5. Lack of structured entrepreneurship activities on the campus.
6. Communication skills of students need improvement.

### **Institutional Opportunity**

1. Opportunities to increase research funding from DST, AICTE or any other Govt./ Private organisations.
2. Increase the collaboration with external agencies.
3. To get departments NBA accredited.
4. Institute has the potential to become an Autonomous institute.
5. Reduce the operational cost by adopting automated procedure.
6. The strong alumni base may be involved to contribute to the institution towards excellence.

### **Institutional Challenge**

1. Lack of interest among the students for engineering studies.

2. Enhancing the communication and employability skill of the students as per the industry requirement.
3. The institution is not being able to pursue cutting edge research due to limited research funding.
4. Networking and strengthening the relationship with the stakeholders.
5. Encouraging students for competitive exams and higher studies.

## 1.3 CRITERIA WISE SUMMARY

### Curricular Aspects

Courses of the curriculum are allotted to faculty based on their field of expertise and interest well before the start of the semester. The prerequisite, course outcomes and programme outcome mapping, books to be referred, methods of instructional delivery are documented and this road map is approved by the Head of the Department. At the start of the course, concerned faculty highlights to the students on the course objectives, outcomes of the course, contents of each unit and its applications in the related domain. In addition to traditional teaching methods, video lectures, NPTEL lectures, PowerPoint presentations, projects, case studies, etc are being conducted. Interactive learning is appreciated during the lecture classes and peer teaching is adopted by the students for improvement in the teaching learning process. Students feedback about the portion coverage as per the lesson plan and suggestions for the improvement in teaching and learning process before and after each internal assessment test are addressed by the concerned faculty and Head of the Department in the class committee meeting . Guest lectures and Industrial visits, internships are arranged to have industry exposure. The assessment of the course is done by assignments, two internal tests and model exam. In order to bridge the gap the curriculum, workshops and value added courses are conducted on regular basis on current topics as per the choice of students to enhance the technical skills. Students are encouraged to take part in mini projects to implement the conceptual learning of the curriculum. **A total of 44 number of unique value added courses are imparted during the last 5 years and more than 64% students undergone project work, field work or internship. Institution obtains feedback on the academic performance and ambience of the institution from various stakeholders, such as Students, Teachers, Employers, Alumni etc. and action taken report on the feedback is made available on institutional website, <https://www.rec.ac.in/assets/img/FEEDBACK.pdf>**

### Teaching-learning and Evaluation

Institute intends to improve the productivity and adequacy in appraisal of Teaching, Learning and Evaluation Processes. The understudy driven instruction is conveyed through experiential, individual, and participative learning modes taking into account the adapting needs of different of understudies. The student enrolment in our Institute is based as per the guidelines of AICTE, Government of Odisha and BPUT through the entrance conducted by JEE Main, OJEE, ATMA, GATE, CAT, XAT etc.

- Institute has profoundly qualified employees **containing 24%** of Doctorate and 17% pursuing Ph. D degree. **The SFR is close to 17.**
- Endeavors are taken to recognize Slow Learners and Bridge course, Remedial Coaching is accommodated to them. All the sanctioned posts are fulfilled with ration = 100%
- In the wake of embracing the OBE framework, POs, PSOs and COs are characterized for every one of

the projects and the philosophy for fulfilment and assessment is set up. In view of the achievement levels, add-on endeavors are distinguished for steady improvement.

- Customary instructing has been supplanted with more imaginative and innovative methods of scattering, sharing and working with information advancement in understudies that incorporates Invited Talk, Workshops, Industry Visits, Mock Tests, Group Discussion, Personal Interview etc. **This has resulted in pass percentage more than 90%.**
- IQAC has found a way ways to improve the capability of ICT empowered instructing and learning and to amplify the utilization of Learning Management System through a native programming to guarantee straightforwardness in the virtual educating learning measure.
- Standard systems exist for assessment related complaint redressal. Every employee is allotted with a group of maximum of twenty students understudies for Mentoring to give advising, direction and observing for their scholarly advancement and different issues.

### Research, Innovations and Extension

Raajdhani Engineering College has a vibrant research council, an apex body to guide REC research community and innovation for creation and transfer of knowledge among students and staff. Gandhi Institute For Technology (REC) is also having a separate Research and Development Cell.

REC is recognized as a Scientific and Industrial Research Organization (SIRO) by Department of Science & Technology, Govt. of India. It is also approved as Business Incubation / host Institution by MSME, Govt. of India and has established MHRD's Institution Innovation Council (IIC) as per the norms of Innovation Cell,

Presently REC is executing Research projects from AICTE, TEQIP-3 CRIS, conducting the program under the scheme Skill and Personality Development Program Centre under PMKVY 4.0. Funding of more **than Rs 40 lacs is received in last 5 years.** REC has conducted many SGs, FDPs, STTPs and GOC sponsored from AICTE and UGC. The institute has more than 50 collaborations for student and faculty exchange with other institutes/industries and signed a total **of 54 MOUs with other organizations. 50 number of seminars and workshops are organized on IPR in last 5 years. The number of publications in referred journals and proceeding are also appreciable with each faculty having at least 1 publication (SCI/Scopus/UGC Care) and 2 conference paper publications per year in an average during last five years.**

The college has tried its best for a noteworthy contribution to the society and environment by making a participation to promote college-neighborhood-community. We have an active NSS group. Under the banner of Unnat Bharat Abhiyan scheme we have adopted 5 villages nearby and trying to solve their problems related to uncleanliness, un hygienic, Go Green, Mobile awareness, awareness regarding the use of polythene, AIDs awareness programs etc. **A total Number of 47 extension and outreach programs** are conducted by the institution through organized forums including NSS/NCC with involvement of community during the last five years

### Infrastructure and Learning Resources

The Institution is spread on an 10.36 acres campus with state of the art infrastructure for effective teaching-learning facilities.

The Institution has always strived for the attainment of mission by providing the best possible infrastructure in

order to introduce effective teaching-learning environment through extensive use of ICT. Teaching Learning activities – Seminar halls, classrooms, smart class, tutorial spaces, laboratories and equipment for teaching, learning and research etc. are used to improve the teaching learning activities.

The institution has sufficient number of well-furnished, well ventilated, spacious classrooms for conducting theory classes which are accommodated with the nice tiered sitting arrangements to facilitate proper teacher-student interaction. Each classroom is well equipped with furniture such as desks and chairs, and teaching aids like green board/blackboard. All the class rooms of individual departments are at close proximity in order to have better access for the students. All the classrooms follow the standards of UGC, AICTE and the Council of Architecture. Each floor on the academic blocks has notice boards.

All laboratories are well equipped and well maintained. Engineering Laboratories and workshops provide students with hands-on experiences. The laboratory experiences provide opportunity to students to explore and learn core engineering practices and prepare for industrial environment. In addition, a Research Centre (RC) and core committee with state-of-the-art facilities have been established for PG, PhD scholars and faculty members.

The library has 44900+ volumes of books, 11600+ e-journals and 42000+ e-books. It has access to Scopus, DELNET discovery portal & LIBSYS database. It also has access to free resources provided through the National Digital Library of India, Video and web courses developed by IITs under NPTEL. The library has 02 computers to support the users to search and read documents. Printing, reprography and document scanning services are available.

Institute has high end IT facility including Wi-Fi. There are 38 data network switches (Giga byte), 18 POE network switches for access points, CCTV cameras. 300Mbps of internet connectivity is shared across the campus, where 100 Mbps is shared for the students. Adequate budgetary provision has ensured the proper maintenance of infrastructure and academic support facilities.

### **Student Support and Progression**

The College has a Scholarship Cell that helps students to apply for scholarships from Government through both online & offline mode. Each year students are getting different government scholarships as per their eligibility. An average of **78 % of students** have benefitted from the Government Scholarship and Institutional since 2018. For overall development of a student, the college is providing Soft Skills, language and Communication Skills, life Skills and awareness of trends in technologies. **More than 50%** Students are benefitted by the training provided by the College for Competitive Examinations and Career Counseling. College has a transparent mechanism for timely redressal of student grievances including sexual harassment and ragging. The College is a ragging free campus. The menace of ragging is viewed seriously and the Anti-ragging committee takes all necessary steps to suppress the ragging within the campus. There is a Training & Placement Cell that facilitates the training of the students and organized several campus drives for the recruitment of students. An average of 73% of students has placed during the last five years. Since 2018, an average of **11.8% of students**

has qualified in state/national/international level examinations. College insists the students to represent in various administrative & academic committees. Students have participated in NSS & Start ups incubated by the college. To develop the co curricular & extracurricular activities of a student different hobby clubs have been formed. Students are participating in Sports & Cultural Events and also awarded at College level, Inter college level & University Level. A total of 54 such awards are received during last 5 years. College has conducted the cultural & sports activity annually named “REDIANCE” & “OCTATHLON” on an average of 20+ events per year. The institute has a registered alumni association named “RAA” that managed by the alumni. Besides the annual meet they organize guest lectures, campus drives, industrial visits of the present students.

### **Governance, Leadership and Management**

The vision and mission statements of our Institution are well placed and it mainly focuses on providing quality education to students to compete in the global arena, and to instill in them the culture of innovation and research. The Heads of Departments take decisions regarding academic innovations and other related activities in consultation with the members of staff. Senior members of staff are assigned with the responsibilities such as Administrative in-charge, Academic in-charge and Accounts in-charge and are considered vital members of decision making body. REC, Bhubaneswar believes in transparency in all the aspects of its financial matters. It conducts both internal and external financial audits in regular manner. It has a fulltime Treasurer and Accounts Department since inception to ensure maintenance of annual accounts and audits.

The Institution has a management Information System named as, “College Management System (CMS)”. All teachers, students and management staff are given access or input their data for information and record purpose.

The institution has effective welfare measures for teaching and non-teaching staff. They are given recognition for good work based on Performance Based Appraisal System (PBAS) performance and outstanding contribution. Duty Leave, medical Leave, Casual leave, Accommodation facilities is provided to the faculties for various purpose. Faculties are sponsored to attend seminar/conference/ Workshop in every academic year and he/she may also be paid with for the same. The Institute believes in transparency in all the aspects of its financial matters. It conducts both internal and external financial audits in regular manner. It has a fulltime Treasurer and Accounts Department since inception to ensure maintenance of annual accounts, internal audits and external audits.

Taking a strong initiative by IQAC towards collaboration, as on date we have collaborated with 44 reputed industries and institutions which are functional.

### **Institutional Values and Best Practices**

REC as a co-educational institution ensures that equal rights, opportunities and responsibilities be provided to all irrespective of gender. REC believes in the society that value men and women as equal, are safer and healthier. The vision of institute for gender equity is to have equal access to resources and to be treated with respect and dignity. Some major initiatives are taken at the institute to promote gender equity.

The Institute is continuously engaged for making the campus eco-friendly. Steps are taken to save energy through use of LED bulbs, CFL and Fluorescent Tubes. Solar Panels were installed as a source of renewable energy. Use of renewable energy resources coupled with LED has minimized the power requirement. Sufficient budgetary provisions are made for green initiatives and waste management.

Water harvesting: Rain water harvesting system has been installed at REC girl's hostels. The Institute undertakes efforts for 'Carbon Neutrality' through Tree Plantation, practicing use of one-side blank pages for printing, Zero Waste and Plastic Free Campus.

The spirit of national integrity is inculcate by organizing national festivals, celebration of culture and heritage, socially relevant events and birthdays of illustrious Indians. College makes available the physical infrastructure to carry out different social needs such as community welfare programs for the benefit of social development.

REC is aided by the best practices of an innovative IQAC, Hobby Clubs, Mentoring System, Introducing Business English Certificate Course, Financial Aid to the students by the college, Green Practice, Collaborative Learning, Career Advisory and Augmentation Service.



## 2. PROFILE

### 2.1 BASIC INFORMATION

Name and Address of the College	
Name	RAAJDHANI ENGINEERING COLLEGE
Address	NEAR MANCHESWAR RAILWAY STATION, P.O. MANCHESWAR RAILWAY COLONY
City	BHUBANESWAR
State	Orissa
Pin	751017
Website	www.rec.ac.in

Contacts for Communication					
Designation	Name	Telephone with STD Code	Mobile	Fax	Email
Principal	Alok Kumar Mohapatra	0674-2972892	9437208700	0674-2972192	principal@rec.ac.in
IQAC / CIQA coordinator	Sanjay Kumar Behera	0674-2972893	6371378725	0674-2972893	ranjan2mallick@gmail.com

Status of the Institution	
Institution Status	Private and Self Financing

Type of Institution	
By Gender	Co-education
By Shift	Regular

Recognized Minority institution	
If it is a recognized minority institution	No

Establishment Details	

State	University name	Document
Orissa	Biju Patnaik University of Technology	<a href="#">View Document</a>
Orissa	Biju Patnaik University of Technology	No File Found

Details of UGC recognition		
Under Section	Date	
2f of UGC		
12B of UGC		

Details of recognition/approval by stationary/regulatory bodies like AICTE,NCTE,MCI,DCI,PCI,RCI etc(other than UGC)				
Statutory Regulatory Authority	Recognition/Approval details Institution/Department programme	Day,Month and year(dd-mm-yyyy)	Validity in months	Remarks
AICTE	<a href="#">View Document</a>	02-06-2023	12	
AICTE	<a href="#">View Document</a>	02-06-2023	12	
AICTE	<a href="#">View Document</a>	02-06-2023	12	
AICTE	<a href="#">View Document</a>	02-06-2023	12	
AICTE	<a href="#">View Document</a>	02-06-2023	12	
AICTE	<a href="#">View Document</a>	02-06-2023	12	
AICTE	<a href="#">View Document</a>	02-06-2023	12	
AICTE	<a href="#">View Document</a>	02-06-2023	12	

Recognitions	
Is the College recognized by UGC as a College with Potential for Excellence(CPE)?	No
Is the College recognized for its performance by any other governmental agency?	No

<b>Location and Area of Campus</b>				
<b>Campus Type</b>	<b>Address</b>	<b>Location*</b>	<b>Campus Area in Acres</b>	<b>Built up Area in sq.mts.</b>
Main campus area	NEAR MANCHESWAR RAILWAY STATION, P.O. MANCHESWAR RAILWAY COLONY	Urban	10.34	27596

## 2.2 ACADEMIC INFORMATION

<b>Details of Programmes Offered by the College (Give Data for Current Academic year)</b>						
<b>Programme Level</b>	<b>Name of Programme/ Course</b>	<b>Duration in Months</b>	<b>Entry Qualification</b>	<b>Medium of Instruction</b>	<b>Sanctioned Strength</b>	<b>No.of Students Admitted</b>
UG	BTech,Dept Of Mechanical Engineering, Mechanical Engineering	48	Class 12th qualifications with Mathematics as a subject.	English	60	19
UG	BTech,Dept Of Computer Science And Engineering, Computer Science and Engineering	48	Class 12th qualifications with Mathematics as a subject.	English	180	180
UG	BTech,Dept Of Electrical Engineering, Electrical Engineering	48	Class 12th qualifications with Mathematics as a subject.	English	60	8
UG	BTech,Dept Of Electrical And Electronics Engineering, Electrical and Electronics Engineering	48	Class 12th qualifications with Mathematics as a subject.	English	30	8
UG	BTech,Dept Of Civil Engineering, Civil Engineering	48	Class 12th qualifications with Mathematics as a subject.	English	60	9
UG	BTech,Dept Of Electronics And Communication Engineering, Electronics and Communication Engineering	48	Class 12th qualifications with Mathematics as a subject.	English	45	6

	n Engineering					
UG	BTech,Dept Of Computer Science And Engineering Data Science, Computer Science and Engineering Data Science	48	Class 12th qualifications with Mathematics as a subject.	English	60	52
UG	BTech,Dept Of Computer Science And Engineering Artificial Intelligence And Machine Learning,Co mputer Science and Engineering Artificial Intelligence and Machine Learning	48	Class 12th qualifications with Mathematics as a subject.	English	60	60
PG	Mtech,Dept Of Mechanical Engineering, Production Engineering	24	Candidates Passed/ Appeared BTech/ BArch/ BPlan/ BPharm/ MCA / MSc	English	18	5
PG	Mtech,Dept Of Computer Science And Engineering, Computer Science and Engineering	24	Candidates Passed/ Appeared BTech/ BArch/ BPlan/ BPharm/ MCA / MSc	English	18	4
PG	Mtech,Dept Of Electrical Engineering,	24	Candidates Passed/ Appeared	English	18	5

	Power Systems Engineering		BTech/ BArch/ BPlan/ BPharm/ MCA / MSc			
PG	Mtech,Dept Of Civil Engineering,Structural Engineering	24	Candidates Passed/ Appeared BTech/ BArch/ BPlan/ BPharm/ MCA / MSc	English	18	15
PG	Mtech,Dept Of Electronics And Communication Engineering,Communication Systems	24	Candidates Passed/ Appeared BTech/ BArch/ BPlan/ BPharm/ MCA / MSc	English	18	3
PG	MBA,Dept Of Master In Business Administration, Master in Business Administration	24	Candidates Passed/ Appeared Graduation in any Stream	English	180	180
PG	MCA,Dept Of Master Of Computer Application,Master in Computer Applications	24	Candidates Passed/ Appeared Graduation in any Stream	English	120	120

### Position Details of Faculty & Staff in the College

<b>Teaching Faculty</b>												
	<b>Professor</b>				<b>Associate Professor</b>				<b>Assistant Professor</b>			
	Male	Female	Others	Total	Male	Female	Others	Total	Male	Female	Others	Total
Sanctioned by the UGC /University State Government	17				34				129			
Recruited	14	3	0	17	25	9	0	34	78	51	0	129
Yet to Recruit	0				0				0			
Sanctioned by the Management/Society or Other Authorized Bodies	17				34				129			
Recruited	14	3	0	17	25	9	0	34	78	51	0	129
Yet to Recruit	0				0				0			

<b>Non-Teaching Staff</b>						
	<b>Male</b>		<b>Female</b>		<b>Others</b>	<b>Total</b>
Sanctioned by the UGC /University State Government						31
Recruited	21		10		0	31
Yet to Recruit						0
Sanctioned by the Management/Society or Other Authorized Bodies						31
Recruited	21		10		0	31
Yet to Recruit						0

<b>Technical Staff</b>				
	<b>Male</b>	<b>Female</b>	<b>Others</b>	<b>Total</b>
Sanctioned by the UGC /University State Government				14
Recruited	13	1	0	14
Yet to Recruit				0
Sanctioned by the Management/Society or Other Authorized Bodies				14
Recruited	13	1	0	14
Yet to Recruit				0

### Qualification Details of the Teaching Staff

<b>Permanent Teachers</b>										
<b>Highest Qualification</b>	<b>Professor</b>			<b>Associate Professor</b>			<b>Assistant Professor</b>			<b>Total</b>
	<b>Male</b>	<b>Female</b>	<b>Others</b>	<b>Male</b>	<b>Female</b>	<b>Others</b>	<b>Male</b>	<b>Female</b>	<b>Others</b>	
D.sc/D.Litt/LLD/DM/MCH	0	0	0	0	0	0	0	0	0	0
Ph.D.	14	3	0	25	9	0	1	0	0	52
M.Phil.	0	0	0	0	0	0	0	1	0	1
PG	0	0	0	0	0	0	77	50	0	127
UG	0	0	0	0	0	0	0	0	0	0



<b>Temporary Teachers</b>										
<b>Highest Qualification</b>	<b>Professor</b>			<b>Associate Professor</b>			<b>Assistant Professor</b>			<b>Total</b>
	Male	Female	Others	Male	Female	Others	Male	Female	Others	
D.sc/D.Litt/LLD/DM/MCH	0	0	0	0	0	0	0	0	0	0
Ph.D.	0	0	0	0	0	0	0	0	0	0
M.Phil.	0	0	0	0	0	0	0	0	0	0
PG	0	0	0	0	0	0	0	0	0	0
UG	0	0	0	0	0	0	0	0	0	0

<b>Part Time Teachers</b>										
<b>Highest Qualification</b>	<b>Professor</b>			<b>Associate Professor</b>			<b>Assistant Professor</b>			<b>Total</b>
	Male	Female	Others	Male	Female	Others	Male	Female	Others	
D.sc/D.Litt/LLD/DM/MCH	0	0	0	0	0	0	0	0	0	0
Ph.D.	0	0	0	0	0	0	0	0	0	0
M.Phil.	0	0	0	0	0	0	0	0	0	0
PG	0	0	0	0	0	0	0	0	0	0
UG	0	0	0	0	0	0	0	0	0	0

<b>Details of Visting/Guest Faculties</b>					
<b>Number of Visiting/Guest Faculty engaged with the college?</b>	<b>Male</b>		<b>Female</b>		<b>Total</b>
	0	0	0	0	0

**Provide the Following Details of Students Enrolled in the College During the Current Academic Year**

Programme		From the State Where College is Located	From Other States of India	NRI Students	Foreign Students	Total
UG	Male	241	36	0	0	277
	Female	70	8	0	0	78
	Others	0	0	0	0	0
PG	Male	241	19	0	0	260
	Female	101	6	0	0	107
	Others	0	0	0	0	0
Diploma	Male	210	2	0	0	212
	Female	19	0	0	0	19
	Others	0	0	0	0	0

<b>Provide the Following Details of Students admitted to the College During the last four Academic Years</b>					
<b>Category</b>		<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>
SC	Male	50	67	54	50
	Female	19	30	7	15
	Others	0	0	0	0
ST	Male	63	70	43	52
	Female	27	21	14	11
	Others	0	0	0	0
OBC	Male	0	0	0	0
	Female	0	0	0	0
	Others	0	0	0	0
General	Male	351	343	212	166
	Female	129	78	51	57
	Others	0	0	0	0
Others	Male	0	0	0	0
	Female	0	0	0	0
	Others	0	0	0	0
<b>Total</b>		<b>639</b>	<b>609</b>	<b>381</b>	<b>351</b>

### **Institutional preparedness for NEP**

<p>1. Multidisciplinary/interdisciplinary:</p>	<p>In Raajdhani Engineering College, multidisciplinary education is offered to the students in order to enhance their interdisciplinary skills through learning courses. Multidisciplinary education to the students in the Institution is offered through Choice Based Credit System (CBCS). Under CBCS, the students have flexibility in learning courses offered by other disciplines. Hence, the students are given the provision to add extra courses during a semester. The list of elective courses offered by other disciplines are offered as open electives where students from any discipline can learn and credits earned by the students are accounted for the award of degree. Students are permitted to learn online courses offered through</p>
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	<p>Swayam-NPTEL, Coursera, etc, . Additional skill enhancement courses are offered to students by industry experts in order to empower the industry readiness among the students. Students are also permitted to attend industry internship to have practical exposure for improving the employability skills. The introduction of various courses by university related to environment such as Environmental Science, Disaster Management, Environmental Hazards and Management, Environmental Impact Assessment, Non-Conventional Energy Sources, Green Building Technologies, etc, impart environmental education among the students. Additionally, the value based education is offered through courses including NSS &amp; Yoga, Human Values &amp; Professional Ethics, Gender Sensitization,</p>
<p>2. Academic bank of credits (ABC):</p>	<p>The mobility of students between programmes by storing and transferring the credits for the award of the degree is facilitated with the use of Academic Bank of Credits (ABC). Hence, it supports for any-time, any-where, and any-level learning. ABC will facilitate mobility among the students and the recognition of credits earned by students across Higher Education Institutions. At Raajdhani Engineering College, an awareness programme is planned to promote flexibility in curricula framework and interdisciplinary or multidisciplinary academic mobility among the students. There is provision for Minor and Honours. The proposed regulation for the minor degree requires additional 20 credits in other than parent discipline. The students learning advanced courses in the same discipline with additional credits 20 credits earns the honors degree. The academic bank of credits ensures flexibility in learning and favors for skill up-gradation in any discipline of interest in order to gear-up the students to be industry ready. The Institution also encourages the students to learn courses offered by Swayam-NPTEL.</p>
<p>3. Skill development:</p>	<p>The skill development initiatives focus on the NEP-2020 by the GOI, and pave the way for building a strong and progressive nation. The holistic skill development of youth from all strides of education is the determining factor to realize the objective of 'Atmanirbhar Bharat' (Self-reliant Nation). REC provides various courses and programs that are</p>

	<p>designed to help students develop their skills. These include Value added courses, internship programs, and industry-focused training etc. In line with the regulations of the NEP (NEP), the institute has introduced various skill oriented courses including PMKVY 4.0. These courses help students develop their skills leading to enhancement of their employability factor. Through its partnership with industry, a variety of programs and projects have been initiated to gear-up the students with the requirements of global employment scenario. In the first year of engineering, students are given inputs on the importance of various professional skills and multidisciplinary learning experience. Micro projects are part and parcel of lab courses in addition to mandatory courses. Industry involved project laboratories are established to provide with the necessary simulation and practical skills. Projects/ Internship programs acquaint the students with real life problem-solving skills and enhance their core competency. Technical exhibitions/poster presentations/ fests/events are also organized in addition to technical training sessions, personality/career development programmes for professional/career advancement.</p>
<p>4. Appropriate integration of Indian Knowledge system (teaching in Indian Language, culture, using online course):</p>	<p>REC cherishes national heritage, values, ethics, tradition and culture through courses environmental sciences and disaster management, Indian culture and constitution , gender sensitization in addition to various programs on human values &amp; professional ethics, societal awareness camps through NSS/Scouts/NGOs/ cultural &amp; technical clubs throughout academic year as the students hail from diverse linguistic backgrounds which facilitates a cultural conglomeration and to acquaint themselves with cultures and languages. REC stands for organizing various multi cultural festivals and events, such as traditional day, Dushara , Deepavali, Ganesh Chaturthi, Christmas Eve, Ramadan etc. The institute hosts the National festivals, events, Women's Day, Voters day, Constitution day, Save Water campaign, World Environment day, safety week Swatcha Bharath, Azadi ka Amrith Mahatosav and other cultural/technical fests. These activities offer students an exposure to experience different aspects to discover India. Hence, these courses support for enrichment of knowledge, awareness and expertise to</p>

	be transferred from one generation to another generation across the community of the country.
5. Focus on Outcome based education (OBE):	<p>Raajdhani Engineering College is already in line with the Outcome Based Education (OBE) system. Vision and Mission of the Departments are framed in-line with the Institute's Vision and Mission. Program Educational Objectives (PEOs) and Program Specific Outcomes (PSOs) are also framed by every department to achieve the vision and the mission. Course Outcome (CO) statements are framed for every course and are mapped to 12 Program Outcomes (POs) given by NBA/Washington accord. Based on formative and summative assessments, the set target levels and set attainment levels for a program, attainment levels of POs and PSOs of all the courses of a program are computed. The Choice Based Credit System (CBCS) is introduced from the academic year 2015 for all the UG and PG programmes. The objective of competency-based education will focus on an integration of outcome goals in terms of specific skills, instructional experiences to teach the outcomes and assessment process. The OBE mainly focuses on measuring student performance at different levels on the aspects of Transparency and Flexibility. Focusing on results, OBE generates a transparent. anticipation of the top results. Students can understand what they expect, and teachers can understand what they require to demonstrate throughout the course. Transparency is crucial as it is essential to be clear in each category, so that learners are able to advance and also to describe all the data and abilities necessary to accomplish this outcome. The teachers can make their classes according to the student's desires by reading clearly what needs to be done. Analysis: In OBE, the course instructors will analyze the results a student has accomplished to identify in which area they are upgraded and to analyze the talent and provide individual assistance to meet their requirements.: Student contribution in an institution is also an essential component of OBE. Student's measure exactly should attempt to learn to them, so that the basics are fully understood. Enthusiastic involvement of students permits them to understand their responsibility towards studies so that they will improve a lot through this individual thinking and focus on education.</p>

6. Distance education/online education:	<p>Online teaching and learning has emerged as an important tool for students' learning, remotely. Institute made use of digital and e-learning systems since 2020 itself after few more lessons learnt from COVID pandemic that also helped the institution to implement the same with vigour and rigour in the interest of its stakeholder's performance. The faculty members make use of ICT in their TLP in addition to the traditional pedagogy and the affiliating university introduced online evaluation system. The institute encourages self-learning culture where both faculty and students use various resources such as e-books, videos, and online journals to develop knowledge. The institution's library OPAC and college data share provide NPTEL videos, web courses, useful links and link to other reputed libraries for effective online learning. This Institution library is a member of DELNET for resource sharing. In addition, the institute supports the use of learning management systems like Swayam-NPTEL, edX, Coursera, etc. to help in improving the efficiency of the teaching and learning process. In line with the NEP's call for investments in digital infrastructure, the faculty members are being trained on various digital repositories. Using Lecture Capturing System (LCS) of this Institution anyone can record lectures, flip classrooms, capture student assignments, and engage faculty, students, communities, alumni, and others. This system is also enhancing the learning process and improves students' achievement.</p>
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### **Institutional Initiatives for Electoral Literacy**

1. Whether Electoral Literacy Club (ELC) has been set up in the College?	<p>The institute has established Electoral Literacy Club during the academic year 2021-22 with the purpose to build an active democratic environment. The prime aim behind this is to promote the importance of electoral literacy among students. It is to engage the students in experimental hands-on learning activities. The institute is making its efforts for the new voters to be confident and to make them know how it affects the development of the country. It is an acknowledgment of the students to know the importance of their votes, and the significance of the sanctity and secrecy of votes. It is a kind of</p>
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	conviction to make the students more mature, and competent. The institute is trying to increase Electoral registration by conducting various activities. The institute aims to conduct workshops for the students regarding the handling of Electronic Voting Machines (EVM).
2. Whether students' co-ordinator and co-ordinating faculty members are appointed by the College and whether the ELCs are functional? Whether the ELCs are representative in character?	Electoral Committee: Electoral Literacy Club is established in the institute during the academic year 2021-22. The objective of the Club is to create awareness about voting, its importance and the value of Democracy through organizing various events. The student representatives are also representing actively.
3. What innovative programmes and initiatives undertaken by the ELCs? These may include voluntary contribution by the students in electoral processes-participation in voter registration of students and communities where they come from, assisting district election administration in conduct of poll, voter awareness campaigns, promotion of ethical voting, enhancing participation of the under privileged sections of society especially transgender, commercial sex workers, disabled persons, senior citizens, etc.	The ELC organizes the following activities to acknowledge the importance of democracy and voting. Voter's Day: Voters Day is celebrated on 25th January with a focus on the significance of democracy and the individual responsibility of voting for being a responsible voter. Human Rights Day: The institutional ELC celebrates Human Rights Day for the awakening of human rights on 10th December. Eminent personalities from the Judiciary are invited to enlighten the thoughts on Human rights Indian Constitutional Day: The ELC organizes Indian Constitution Day on 26th November to acknowledge the importance of the Constitution.
4. Any socially relevant projects/initiatives taken by College in electoral related issues especially research projects, surveys, awareness drives, creating content, publications highlighting their contribution to advancing democratic values and participation in electoral processes, etc.	The ELC of the institute organized a program on 'Voters Rights and Duties' on 14th Feb. 2023 to cope with awareness of voting at Bhatapada village, near the college. Students' Meet: The ELC conducted a special program to increase the number of voters by personally meeting the students and the parents of the surrounding villages.
5. Extent of students above 18 years who are yet to be enrolled as voters in the electoral roll and efforts by ELCs as well as efforts by the College to institutionalize mechanisms to register eligible students as voters.	The institute ELC has conducted street plays to create awareness on the importance of voting. The ELC is planning to adopt nearby villages and appoint the students as coordinators of their respective villages to register the eligible students for voting. The ELC in the future will organize workshops by inviting a revenue officer to guide the newly eligible voters.



## Extended Profile

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### 1 Students

#### 1.1

Number of students year wise during the last five years

2022-23	2021-22	2020-21	2019-20	2018-19
2650	2538	2266	2307	2377

File Description	Document
Upload Supporting Document	<a href="#">View Document</a>
Institutional data in prescribed format	<a href="#">View Document</a>

### 2 Teachers

#### 2.1

Number of teaching staff / full time teachers during the last five years (Without repeat count):

Response: 156

File Description	Document
Upload Supporting Document	<a href="#">View Document</a>
Institutional data in prescribed format	<a href="#">View Document</a>

#### 2.2

Number of teaching staff / full time teachers year wise during the last five years

2022-23	2021-22	2020-21	2019-20	2018-19
156	144	131	128	125

### 3 Institution

#### 3.1

Expenditure excluding salary component year wise during the last five years (INR in lakhs)

2022-23	2021-22	2020-21	2019-20	2018-19
1533.332	1425.206	1277.782	1394.967	1227.834

File Description	Document
Upload Supporting Document	<a href="#">View Document</a>

## 4. Quality Indicator Framework(QIF)

### Criterion 1 - Curricular Aspects

#### 1.1 Curricular Planning and Implementation

##### 1.1.1

**The Institution ensures effective curriculum planning and delivery through a well-planned and documented process including Academic calendar and conduct of continuous internal Assessment**

**Response:**

Effective curriculum delivery process is in place in the organization as per the road map to facilitate the Students for academic excellence and to get placements or to pursue higher studies.

1.Courses of the curriculum are allotted to faculty based on their field of expertise and interest well before the start of the semester by the Head of the Department.

2.Before the semester could start, course committee meeting is conducted by the course committee chairperson with other subject handling faculty.

3.The university provides the syllabus with evaluation schemes and course objectives for every course.

4.The prerequisite, course outcomes and programme outcome mapping, books to be referred, methods of instructional delivery are documented and this road map is approved by the Head of the Department.

5.Course handling faculty will frame the lecture plan of delivery and prepare the lecture notes for all topics as in the curriculum and devise the assignment topics and tutorial problems which will be approved by the course committee chairperson, Head of the department and Principal before the commencement of the semester.

6. In addition to traditional teaching methods, video lectures, NPTEL lectures, PowerPoint presentations, projects, case studies, etc are being conducted.

7.Interactive learning is appreciated during the lecture classes and peer teaching is adopted by the students for improvement in the teaching learning process.

8. Students feedback about the portion coverage as per the lesson plan and suggestions for the improvement in teaching and learning process before and after each internal assessment test are addressed by the course handing faculty and Head of the Department in the class committee meeting .

9. Performance of the students in laboratory experiments are timely assessed and graded according to the performance indicators.

10. Depending on the evaluation scheme, two class tests for 40% and 80% syllabus are conducted per semester taking in to consideration the COs defined for each course to evaluate the students. Guest lectures and seminars by academicians from reputed institutions and industry are arranged to impart valuable knowledge to students.

11. Industrial visits are arranged to have industry exposure related to the curriculum. To facilitate the active participation of students in the learning process, activity based learning activities are conducted by the students ( Quiz, objective type questions etc.).

12. The assessment of the course is done by assignments, two internal tests and model exam. In order to bridge the gap the curriculum, workshops and value added courses are conducted on regular basis on current topics as per the choice of students to enhance the technical skills.

13. In laboratory courses, the objectives and outcomes of the laboratory is discussed in the first session and hands on session of all the experiments is facilitated by the course handling faculty.

14. Students are encouraged to take part in mini projects to implement the conceptual learning of the curriculum.

15. At the end of the course, indirect assessment such as course end survey is done by the stake holders

File Description	Document
Upload Additional information	<a href="#">View Document</a>
Provide Link for Additional information	<a href="#">View Document</a>

## 1.2 Academic Flexibility

### 1.2.1

**Number of Certificate/Value added courses offered and online courses of MOOCs, SWAYAM, NPTEL etc. (where the students of the institution have enrolled and successfully completed during the last five years)**

**Response:** 44

File Description	Document
List of students and the attendance sheet for the above mentioned programs	<a href="#">View Document</a>
Institutional programme brochure/notice for Certificate/Value added programs with course modules and outcomes	<a href="#">View Document</a>
Institutional data in the prescribed format	<a href="#">View Document</a>
Evidence of course completion, like course completion certificate etc. Apart from the above:	<a href="#">View Document</a>
Provide Links for any other relevant document to support the claim (if any)	<a href="#">View Document</a>

### Other Upload Files

1

[View Document](#)

### 1.2.2

*Percentage of students enrolled in Certificate/ Value added courses and also completed online courses of MOOCs, SWAYAM, NPTEL etc. as against the total number of students during the last five years*

**Response:** 66.86

1.2.2.1 Number of students enrolled in Certificate/ Value added courses and also completed online courses of MOOCs, SWAYAM, NPTEL etc. as against the total number of students during the last five years

2022-23	2021-22	2020-21	2019-20	2018-19
2064	1961	426	1771	1894

File Description	Document
Upload supporting document	<a href="#">View Document</a>
Institutional data in the prescribed format	<a href="#">View Document</a>

## 1.3 Curriculum Enrichment

### 1.3.1

*Institution integrates crosscutting issues relevant to Professional Ethics, Gender, Human Values, Environment and Sustainability in transacting the Curriculum*

**Response:**

The present curriculum included topics such as Gender equality, Environmental consciousness and sustainability, Human Values and Professional Ethics into the Curriculum.

Equal opportunities are given to both the genders in terms of admissions, employment, training Programs, sports activities etc., and so gender issues do not arise.

College supports women faculty and students in many aspects ,and encourage them to participate in events focusing on women empowerment and promoting leadership qualities in women.

Women's day is celebrated with vigor in the institution campus. Each year, two best girl students are selected from each department and they are awarded and rewarded by an eminent personality.

Girls and boys participate in various co-curricular activities such as paper presentations, Musical night, group discussions and technical quiz programs. Both boys and girls are made members of various clubs associated with academic, co-curricular and Extracurricular activities.

Students are taken for industrial visits and effluent and water treatment plants and places that will educate them on environmental issues.

Awareness programs are also initiated by NSS, Tree Plantation, Environment Club which extensively carryout activities for environmental protection and ecological preservation.

The curriculum includes courses on professional ethics and IPR and human rights.

<b>File Description</b>	<b>Document</b>
Upload Additional information	<a href="#">View Document</a>
Provide Link for Additional information	<a href="#">View Document</a>

**1.3.2**

**Percentage of students undertaking project work/field work/ internships (Data for the latest completed academic year)**

**Response:** 64.08

**1.3.2.1 Number of students undertaking project work/field work / internships**

**Response:** 1698

File Description	Document
Upload supporting document	<a href="#">View Document</a>
Institutional data in the prescribed format	<a href="#">View Document</a>

## 1.4 Feedback System

### 1.4.1

*Institution obtains feedback on the academic performance and ambience of the institution from various stakeholders, such as Students, Teachers, Employers, Alumni etc. and action taken report on the feedback is made available on institutional website*

**Response:** A. Feedback collected, analysed, action taken& communicated to the relevant bodies and feedback hosted on the institutional website

File Description	Document
Feedback analysis report submitted to appropriate bodies	<a href="#">View Document</a>
At least 4 filled-in feedback form from different stake holders like Students, Teachers, Employers, Alumni etc.	<a href="#">View Document</a>
Action taken report on the feedback analysis	<a href="#">View Document</a>
Provide Links for any other relevant document to support the claim (if any)	<a href="#">View Document</a>
Link of institution's website where comprehensive feedback, its analytics and action taken report are hosted	<a href="#">View Document</a>

## Criterion 2 - Teaching-learning and Evaluation

### 2.1 Student Enrollment and Profile

#### 2.1.1

##### Enrolment percentage

**Response:** 57.38

##### 2.1.1.1 Number of seats filled year wise during last five years (Only first year admissions to be considered)

2022-23	2021-22	2020-21	2019-20	2018-19
639	609	378	378	449

##### 2.1.1.2 Number of sanctioned seats year wise during last five years

2022-23	2021-22	2020-21	2019-20	2018-19
945	945	765	810	810

#### File Description

#### Document

Institutional data in the prescribed format

[View Document](#)

Final admission list as published by the HEI and endorsed by the competent authority

[View Document](#)

Document related to sanction of intake from affiliating University/ Government/statutory body for first year's students only.

[View Document](#)

Provide Links for any other relevant document to support the claim (if any)

[View Document](#)

#### 2.1.2

*Percentage of seats filled against reserved categories (SC, ST, OBC etc.) as per applicable reservation policy for the first year admission during the last five years*

**Response:** 87.72

##### 2.1.2.1 Number of actual students admitted from the reserved categories year wise during last five years (Exclusive of supernumerary seats)



2022-23	2021-22	2020-21	2019-20	2018-19
154	188	118	128	162

### 2.1.2.2 Number of seats earmarked for reserved category as per GOI/ State Govt rule year wise during the last five years

2022-23	2021-22	2020-21	2019-20	2018-19
189	189	153	162	162

File Description	Document
Institutional data in the prescribed format	<a href="#">View Document</a>
Final admission list indicating the category as published by the HEI and endorsed by the competent authority.	<a href="#">View Document</a>
Copy of communication issued by state govt. or Central Government indicating the reserved categories(SC,ST,OBC,Divyangjan,etc.) to be considered as per the state rule ( Translated copy in English to be provided as applicable)	<a href="#">View Document</a>
Provide Links for any other relevant document to support the claim (if any)	<a href="#">View Document</a>

## 2.2 Student Teacher Ratio

### 2.2.1

**Student – Full time Teacher Ratio**  
(Data for the latest completed academic year)

**Response:** 16.99

## 2.3 Teaching- Learning Process

### 2.3.1

**Student centric methods, such as experiential learning, participative learning and problem solving methodologies are used for enhancing learning experiences and teachers use ICT- enabled tools including online resources for effective teaching and learning process**

**Response:****Response:**

Student centered learning approach is focusing the teaching methods that transforms the instruction from the teacher to the student. It is defined as the extent to which the students are involved actively in constructing new knowledge and understanding. The institution is committed to ensure the development to fits students through a student-centric learning process. Here, the teachers make their classes student centric where students are in focus and they play the central role. They are actively engaged in the learning process in a collaborative nature along with their peers and under the guidance of teachers. Students engaged in learning activities with their peers are more likely to participate in other effective educational practices and have gained positive views of the active learning environment.

Following are the different strategies employed during the whole teaching-learning process.

**Experimental learning:**

**1.Summer Internship:** As a part of curriculum, it is mandatory for the students to go for the internship. It is the best way to relate classroom knowledge with practical experience.

**2.Industrial Visits:** Industrial visits are arranged in a regular and systematic manner. By visiting different industries students can get insight into the working environment of the industries.

**3.Projects:** The best way to get mastery in a subject is by doing projects. It gives hands on practical experience to the students.

**Participative Learning:**

**1.Think-Pair-Share:** Students work on a specific task or problem individually and then discuss their approach with a partner. The final step is to synthesize and share the discussion with the larger group.

**2.Brainstorming:** This technique is used to generate new ideas where judgment is suspended. Here the main objective is to accumulate more ideas without evaluation or judgment.

**3.Case Studies:** In this case students are allowed to discuss on an imaginary or real situation.

**4.Gamification:** Employing gamification during course delivery like making puzzles, making something together, memory game etc.

**5.Seminars or Workshops:** Students are involved in activities like student lead seminars, group discussions which help them to develop the team spirit and leadership qualities. For the students, different workshops are organized on stress management, communication skills, personality development etc.

**6.Creativity:** The institution promotes creativity amongst students by encouraging them to publish articles in the college magazine and wallpapers.

**7.Hobby Club activities:** It encourages students to participate in co-curricular and extracurricular activities through various clubs.

**Problem Solving Methodologies:**

- **NPTEL, SWAYAM On line courses:** This gives the opportunity to everyone who wants to learn innovative ideas.
- **Use of Technologies:** Use of technologies and tools like WhatsApp application, Apps development.
- **Programming Contests:** Different programming contests are arranged in state level or national level where students design and develop solutions to the given problem statement.
- **Real life Projects:** Students are encouraged and guided to involve themselves in various real-life projects such as bio-gas preparation.

File Description	Document
Upload Additional information	<a href="#">View Document</a>
Provide Link for Additional information	<a href="#">View Document</a>

**2.4 Teacher Profile and Quality****2.4.1****Percentage of full-time teachers against sanctioned posts during the last five years****Response:** 100**2.4.1.1 Number of sanctioned posts year wise during the last five years**

2022-23	2021-22	2020-21	2019-20	2018-19
156	144	131	128	125

File Description	Document
Sanction letters indicating number of posts sanctioned by the competent authority (including Management sanctioned posts)	<a href="#">View Document</a>
Provide Links for any other relevant document to support the claim (if any)	<a href="#">View Document</a>

**2.4.2**

***Percentage of full time teachers with NET/SET/SLET/ Ph. D./D.Sc. / D.Litt./L.L.D. during the last five years (consider only highest degree for count)***

**Response:** 24.42**2.4.2.1 Number of full time teachers with NET/SET/SLET/Ph. D./ D.Sc. / D.Litt./L.L.D year wise during the last five years**

2022-23	2021-22	2020-21	2019-20	2018-19
45	39	31	27	25

File Description	Document
List of faculties having Ph. D. / D.Sc. / D.Litt./ L.L.D along with particulars of degree awarding university, subject and the year of award per academic year.	<a href="#">View Document</a>
Institution data in the prescribed format	<a href="#">View Document</a>
Copies of Ph.D./D.Sc / D.Litt./ L.L.D awarded by UGC recognized universities	<a href="#">View Document</a>
Provide Links for any other relevant document to support the claim (if any)	<a href="#">View Document</a>

**2.5 Evaluation Process and Reforms****2.5.1**

**Mechanism of internal/ external assessment is transparent and the grievance redressal system is time- bound and efficient**

**Response:****Response:**

- The internal assessment examinations are directed according to the Academic calendar of the institute as well as University. The Professor-In-Charge Examination prepares the examination schedule much before to the commencement of examination with consultation with Dean (Academics) which is displayed in the Notice board and mailed to the students and staff members for their reference. Further, if any changes in schedule, pattern or methods related to examination are immediately notified to the students and teachers through mail.
- The respective subject teacher sets the question paper as per the Blooms taxonomy in view of Course Outcomes. They send the questions to the examination cell for further course of action. The examination cell organized the questions as per the student strength well before the examinations.
- The PIC exam is prepared the invigilation duty chart which is communicated to the faculty members via e-mail. The PIC exam is also prepared the seating arrangements for the student

which is notified to the students through the notice board.

- During examination, attendance is taken by the invigilator for record. If someone found absent in the examination then a message is sent to the parent by the examination cell.
- All the invigilators submitted the answer scripts to the examination cell. The answer scripts are sent to the respective subject teacher to the individual subject teacher for evaluation. The evaluated answer scripts are shown to the students within 3 days after completion of the test. If any discrepancies found, the same is resolved by the concerned faculty at that time. After that the final marks are uploaded in the CMS for students and parents.
- Projects and seminars are jointly assessed by faculty members and industry experts. There students are guided with the respective area expert faculties. They guide the student for demonstration of their own project idea along with individual communication, leadership, management and team work.
- The laboratory assessment of student is being done through experiment in continuous manner as per the curriculum of the University

File Description	Document
Upload Additional information	<a href="#">View Document</a>
Provide Link for Additional information	<a href="#">View Document</a>

## 2.6 Student Performance and Learning Outcomes

### 2.6.1

*Programme Outcomes (POs) and Course Outcomes (COs) for all Programmes offered by the institution are stated and displayed on website*

#### **Response:**

Institute has well defined program outcomes (PO), program specific outcomes (PSO) and course outcomes (CO) for all programs.

Teachers are conversant with POs, PSOs of the programs as they are involved in PO, PSO formation process. Vision and mission of the college is discussed in the meetings. Head of the department and teachers discuss POs and frame PSOs of the programs which are in line with Graduate attributes and Vision, Mission of the Institute.

#### **POs, PSOs are displayed for teachers and students at following locations:**

- Institute website (<https://www.rec.ac.in/website/PO-CO-20-21.pdf>)
- HOD cabins
- Notice Boards
- Departmental laboratories
- Departmental library
- Department Corridor

- Lab Manuals
- Faculty Common Room

File Description	Document
Upload Additional information	<a href="#">View Document</a>
Provide Link for Additional information	<a href="#">View Document</a>

## 2.6.2

*Attainment of POs and COs are evaluated.*

**Explain with evidence in a maximum of 500 words**

**Response:**

Evaluation of attainment of PO's and PSO's is based on direct and indirect assessment tools. Direct assessment of PO's and PSO's is based on students' performance in internal assessments and University exams. Indirect assessment is based on exit survey of the particular outgoing batch of students. The attainment of PO's and PSO's is evaluated for every batch of students completing the program.

PO/PSO Attainment (%) =

*(weightage: 80%) × (Average CO attainment in direct method)*

*+ (weightage: 20%) × (Average CO attainment in indirect method)*

## Attainment of Cos

COs for each course of the program from first year to fourth year is written by the respective faculty member. A correlation is established between CO's, PO's and PSO's in a scale of 1 to 3,

1. Being the slight (low),
2. Being moderate (medium) and
3. Being substantial (high).

A mapping matrix is prepared in this regard for every course in the program including the elective courses offered. The CO attainment levels can be measured based on the results of the internal assessment and external examination conducted by the university. This is a form of direct measurement of attainment. As per the university norms two

Internal assessment tests, two quiz tests, two surprise tests and two assignment tests are conducted for each course in a semester. In each test, the percentage of students who achieve a set target for the COs is computed. After the two tests, the average of these percentages is computed to decide the attainment level.

## Average CO Attainment of individual Course

- The CO attainment level for each subject is fixed by considering a set value higher than the average performance at the university level.
- The Set Value for internal, quiz and surprise is consider as 60% while for assignment the set value is 70%.
- Percentage of student securing equal or more than the set value is determined.
- Percentage of student attainment of the set value is converted to attainment level of individuals with a correlation level (X) as follows: X=1 for a range of 60% to 70%; X=2 if the range is more than 70% and less that 80 % and X=3 if the range is more than 80%.
- Average attainment of individual level of quiz, surprise and assignment is calculated.
- Attainment of individual CO is calculated by considering the

*weightage as 67% weightage to University examination + 20% weightage to internal tests + 3% Quiz + 3% surprise test + 7% Assignment.*

•

Attainment for particular Program Outcome/Program Specific Outcome is calculated by taking weighted average of all course outcome attainment addressing that particular PO & PSO. Similar calculation is repeated for all the POs & PSOs and for every course. The POs/PSOs attainment for a batch of students is computed by taking average of PO attainments/PSO attainments of all the courses.

Indirect assessment is based on exit survey of the particular outgoing batch of students.

File Description	Document
Upload Additional information	<a href="#">View Document</a>
Provide Link for Additional information	<a href="#">View Document</a>

### 2.6.3

**Pass percentage of Students during last five years (excluding backlog students)**

**Response:** 92.35

**2.6.3.1 Number of final year students who passed the university examination year wise during the last five years**

2022-23	2021-22	2020-21	2019-20	2018-19
783	711	680	606	602

**2.6.3.2 Number of final year students who appeared for the university examination year-wise during the last five years**

2022-23	2021-22	2020-21	2019-20	2018-19
846	748	707	711	650



<b>File Description</b>	<b>Document</b>
Institutional data in the prescribed format	<a href="#">View Document</a>
Certified report from Controller Examination of the affiliating university indicating pass percentage of students of the final year (final semester) eligible for the degree programwise / year-wise.	<a href="#">View Document</a>
Annual report of controller of Examinations(COE) highlighting the pass percentage of final year students	<a href="#">View Document</a>
Provide Links for any other relevant document to support the claim (if any)	<a href="#">View Document</a>

## 2.7 Student Satisfaction Survey

### 2.7.1

#### Online student satisfaction survey regarding teaching learning process

#### Response:

<b>File Description</b>	<b>Document</b>
Upload database of all students on roll as per data template	<a href="#">View Document</a>

## Criterion 3 - Research, Innovations and Extension

### 3.1 Resource Mobilization for Research

#### 3.1.1

*Grants received from Government and non-governmental agencies for research projects / endowments in the institution during the last five years (INR in Lakhs)*

**Response:** 43.37

**3.1.1.1 Total Grants from Government and non-governmental agencies for research projects / endowments in the institution during the last five years (INR in Lakhs)**

2022-23	2021-22	2020-21	2019-20	2018-19
1.3	6.38	10.95	22.15	2.59

#### File Description

#### Document

Upload supporting document

[View Document](#)

Institutional data in the prescribed format

[View Document](#)

### 3.2 Innovation Ecosystem

#### 3.2.1

**Institution has created an ecosystem for innovations, Indian Knowledge System (IKS), including awareness about IPR, establishment of IPR cell, Incubation centre and other initiatives for the creation and transfer of knowledge/technology and the outcomes of the same are evident**

**Response:**

Raajdhani Engineering College (REC) has a vibrant research council, an apex body to guide REC research community and innovation for creation and transfer of knowledge among students and staff. The apex body is running by eminent academicians, scientists and industrial researchers from various reputed organizations of India and abroad. REC is having a separate Research and Development Cell. The cell comprises of faculty members from each department of the institute. A professor having handsome experience and expertise in versatile research field. Research & Development cell in the capacity of Dean (R&D), with the principal presiding over. The committee oversees the smooth and efficient coordination of research and development activities in the institute, thus fostering overall growth. The prime aim is to engage large number of faculty, student and staff in various innovation and entrepreneurship related activities such as ideation, problem solving, proof of concept development, product development, prototype or model design, design thinking, IPR, project handling, management at pre-incubation, and incubation stages, etc. So that innovation and entrepreneurship eco system gets established and stabilized

at Higher Education Institution. The research purposes of REC R&D cell are to foresee future problems through pursuit of truth as a "global centre of excellence for intellectual creativity", to respond to current social demands, and to contribute to the creation and development of scientific technologies with the aim of realizing an affluent society and natural environment for humanity. At the same time, the REC aims to create excellent educational resources and an excellent educational environment through frontline researches.

**To achieve the above-mentioned purposes, the following objectives are set:**

- Lead the academic world and conduct internationally high-level researches in each engineering field.
- Conduct cutting-edge researches to lead the academic and industrial worlds at home and abroad and create and develop new academic and technological fields.
- Aim to globalize research and education.
- Provide suggestions for the future of humanity and the earth, based on high-level academic foundations and vision.
- Conduct researches that contribute to the development of human resources who can play a leading and core role in society and researchers who can conduct cutting-edge researches.

#### **MISSION AND VISION OF R&D CELL**

- Image building of the Institution.
- Creation of research facilities in-house and in collaboration with other national institutes and laboratories.
- Conducting workshops/national and international seminars.
- Identification of research projects for faculty and encouraging students for such.
- Imbibing the culture to carry out innovative projects with the students beyond curriculum.
- Conducting various competitions for students on projects and seminars.
- Training younger generation teachers with innovative research projects.
- Encouraging faculty and students to attend seminars and workshops inside and outside the state.
- Encouraging faculty and students for publication of research papers in national and international journals of repute.
- Encouraging teachers and students to apply for patents.
- Bringing Research to class rooms by inviting scientists for interaction with students.

<b>File Description</b>	<b>Document</b>
Upload Additional information	<a href="#">View Document</a>
Provide Link for Additional information	<a href="#">View Document</a>

#### **3.2.2**

***Number of workshops/seminars/conferences including on Research Methodology, Intellectual Property Rights (IPR) and entrepreneurship conducted during the last five years***

**Response:** 50

**3.2.2.1 Total number of workshops/seminars/conferences including programs conducted on Research Methodology, Intellectual Property Rights (IPR) and entrepreneurship year wise during last five years**

2022-23	2021-22	2020-21	2019-20	2018-19
11	13	10	6	10

File Description	Document
Upload supporting document	<a href="#">View Document</a>
Institutional data in the prescribed format	<a href="#">View Document</a>

### 3.3 Research Publications and Awards

#### 3.3.1

**Number of research papers published per teacher in the Journals notified on UGC care list during the last five years**

**Response:** 6.19

**3.3.1.1 Number of research papers in the Journals notified on UGC CARE list year wise during the last five years**

2022-23	2021-22	2020-21	2019-20	2018-19
325	171	154	194	122

<b>File Description</b>	<b>Document</b>
Link to the uploaded papers, the first page/full paper(with author and affiliation details)on the institutional website	<a href="#">View Document</a>
Link to re-directing to journal source-cite website in case of digital journals	<a href="#">View Document</a>
Links to the papers published in journals listed in UGC CARE list or	<a href="#">View Document</a>
Institutional data in the prescribed format	<a href="#">View Document</a>
Provide Links for any other relevant document to support the claim (if any)	<a href="#">View Document</a>

### 3.3.2

**Number of books and chapters in edited volumes/books published and papers published in national/ international conference proceedings per teacher during last five years**

**Response:** 10.88

**3.3.2.1 Total number of books and chapters in edited volumes/books published and papers in national/ international conference proceedings year wise during last five years**

2022-23	2021-22	2020-21	2019-20	2018-19
272	509	320	249	348

<b>File Description</b>	<b>Document</b>
List of chapter/book along with the links redirecting to the source website	<a href="#">View Document</a>
Institutional data in the prescribed format	<a href="#">View Document</a>
Copy of the Cover page, content page and first page of the publication indicating ISBN number and year of publication for books/chapters	<a href="#">View Document</a>
Provide Links for any other relevant document to support the claim (if any)	<a href="#">View Document</a>

## 3.4 Extension Activities

### 3.4.1

### **Outcomes of Extension activities in the neighborhood community in terms of impact and sensitizing the students to social issues for their holistic development during the last five years.**

#### **Response:**

The college has tried its best for a noteworthy contribution to the society and environment by making a participation to promote college-neighborhood-community. It has given more stress on the service oriented activities making more engagements of the students for a holistic development to the students contributing to good citizenship. The NSS group of REC has taken so many initiatives involving the teaching and non-teaching staffs of the college to their best. Under the banner of NSS scheme we have adopted several villages nearby and trying to solve their problems related to uncleanliness, unhygienic, Go Green, Mobile awareness, awareness regarding the use of polythene, AIDs awareness programs etc. We have organized several medical camps like Dental check-up, regular health check-up in the rural areas as well as in the college campus. No. of times we have organized blood donation camps with collaboration with the Rotary club of Bhubaneswar, and Red Cross Society of India. As from the last few years the coastal region of the state is regularly facing cyclone nearly every year, tying up with a social organization Robin Hood Army, Bhubaneswar. The students had participated in the relief work in the cyclone effected areas and rendered all types of possible helps to the needy people. We have also organized cyclone awareness programs in the villages as well as in the slum areas of the city. Traffic awareness program is also organised on the road by the students and volunteers of Robin Hood Army, Bhubaneswar chapter in the leadership of the Dy. Commissioner of Police (Traffic)

The college has also organized several literacy programs for the village children imparting free training on computers to the students initiated by the students and managed by the staffs. Given training on sewing machine operation and promoting the rural people to be self-sufficient. To create the interest in the field of science and technology among school students.

Technical activity enhances the technical knowledge of student in the field of design, analysis, manufacturing and testing of different engineering systems. Through these activities student improve their qualities such as time management, attending Hackathon competitions, project management, costing, marketing skills, event management, communication skill etc. Similarly social activities enhance and create social awareness and responsibilities in the students. As a result of these involvements in technical activities various types of awareness are created in the society through the students. Apart from these various student chapters with different cultural and social activities are being organised to create social responsibilities among the students. Similarly we have conducted several other programs as mentioned below in the table:

- Firefighting awareness to college students & staffs
- Yoga and Meditation camp in the college by NSS
- Cancer awareness program in collaboration with a cancer fighting NGO
- Tree Plantation in the college campus
- Distributed Groceries and medicines to the needy people like Senior citizens, pregnant ladies, physically handicapped etc. during the COVID-19 pandemic lock down period with the help of State Govt. of Odisha.

<b>File Description</b>	<b>Document</b>
Upload Additional information	<a href="#">View Document</a>
Provide Link for Additional information	<a href="#">View Document</a>

### 3.4.2

#### **Awards and recognitions received for extension activities from government / government recognised bodies**

##### **Response:**

Raajdhani Engineering College has earned high praise for its dedication to both the academic and local communities through a range of programs and initiatives. The college has played an active role in collaborating with NGOs, government schools, religious friaries, and other government-affiliated organizations to work towards building a more inclusive and just society.

The students regularly participated in extension activities organized by the institution through Youth Red Cross Club (YRC) and Red Ribbon Club (RRC) in collaboration with Government agencies and NGOs. Cancer Awareness, Blood donation Camp, Mass Cleaning, Temple Cleaning, Bike Road Safety Awareness Programme, Awareness on HIV, Yoga Awareness, Dengue Awareness, First Aid Training Programme, Interactive Education Training – HIV awareness Programme, E.N.T Health Camp, Tobacco Awareness Programme, Corona Awareness Programme, Tobacco Prevention Rally are conducted periodically to serving the society and uplifting the health standards of the underprivileged sections.

An awards ceremony makes students feel that their work is valued. It shows approval and gratitude for each person's good job, and it makes people aware that good work will be rewarded. It shows others, such as the general public and other staff members, that somebody are aware of outstanding accomplishments.

The institute is awarded by Bhubaneswar Municipal corporation for Swachh Bharat Abhtyan and also Literacy campaign Programs and eradication of Alcohol in slum areas. It has received certificate of appreciation from Rotary club several times for blood donation etc.

<b>File Description</b>	<b>Document</b>
Upload Additional information	<a href="#">View Document</a>
Provide Link for Additional information	<a href="#">View Document</a>

### 3.4.3

#### ***Number of extension and outreach programs conducted by the institution through organized forums***

*including NSS/NCC with involvement of community during the last five years.*

**Response:** 47

**3.4.3.1 Number of extension and outreach Programs conducted in collaboration with industry, community, and Non- Government Organizations through NSS/ NCC etc., year wise during the last five years**

2022-23	2021-22	2020-21	2019-20	2018-19
17	9	7	6	8

File Description	Document
Photographs and any other supporting document of relevance should have proper captions and dates.	<a href="#">View Document</a>
Institutional data in the prescribed format	<a href="#">View Document</a>
Detailed report for each extension and outreach program to be made available, with specific mention of number of students participated and the details of the collaborating agency	<a href="#">View Document</a>
Provide Links for any other relevant document to support the claim (if any)	<a href="#">View Document</a>

## 3.5 Collaboration

### 3.5.1

*Number of functional MoUs/linkages with institutions/ industries in India and abroad for internship, on-the-job training, project work, student / faculty exchange and collaborative research during the last five years.*

**Response:** 54



<b>File Description</b>	<b>Document</b>
Summary of the functional MoUs/linkage/collaboration indicating start date, end date, nature of collaboration etc.	<a href="#">View Document</a>
List of year wise activities and exchange should be provided	<a href="#">View Document</a>
List and Copies of documents indicating the functional MoUs/linkage/collaborations activity-wise and year-wise	<a href="#">View Document</a>
Institutional data in the prescribed format	<a href="#">View Document</a>
Provide Links for any other relevant document to support the claim (if any)	<a href="#">View Document</a>

## Criterion 4 - Infrastructure and Learning Resources

### 4.1 Physical Facilities

#### 4.1.1

**The Institution has adequate infrastructure and other facilities for,**

- teaching – learning, viz., classrooms, laboratories, computing equipment etc
- ICT – enabled facilities such as smart class, LMS etc.

**Facilities for Cultural and sports activities, yoga centre, games (indoor and outdoor), Gymnasium, auditorium etc (Describe the adequacy of facilities in maximum of 500 words.)**

**Response:**

**Response:**

The Institution has always strived for the attainment of mission by providing the best possible infrastructure in order to introduce effective teaching-learning environment through extensive use of ICT. Teaching Learning activities – Seminar halls, classrooms, smart class, tutorial spaces, laboratories and equipment for teaching, learning and research etc. are used to improve the teaching learning activities. All the classrooms have been renovated on modern lines with comfortable and space saving furniture, Vitrified floor tiles. In most of the classrooms the students are exposed to conducive environment for study. Laboratories- All departments have state of the art equipment to create facilities that cater to the need of students, faculty members. The laboratories are used for conducting experimental work, research work, project and consultancy work. All equipment in the lab are always checked for wear and tear and replaced with new or repaired one every semester. Before the commencement of every semester facilities used to ensure the availability of required software/ equipment for the smooth conduction of the labs. Labs are equipped with sufficient hardware and licensed software to run as per program specific curriculum. The number and area of the class rooms and labs are as per the AICTE norms. Every dept. is also equipped with exclusive computing resources Language laboratory; it also provides sufficient no of computers with internet, system software, and application software and computer peripherals.

**Details of classrooms, tutorials and laboratories:**

**Classrooms:**

The institution has sufficient number of well-furnished, well ventilated, spacious classrooms for conducting theory classes which are accommodated with the nice tiered sitting arrangements to facilitate proper teacher-student interaction. Each classroom is well equipped with furniture such as desks and chairs, and teaching aids like green board/blackboard. All the class rooms of individual departments are at close proximity in order to have better access for the students. All the classrooms follow the standards of UGC, AICTE and the Council of Architecture. Each floor on the academic blocks has notice boards.

**Laboratories and workshops:**

All laboratories are well equipped and well maintained not only for carrying out curriculum-oriented practice sessions and certain research activities. Engineering Laboratories and workshops provide students with hands-on experiences. The laboratory experiences provide opportunity to students to explore and learn core engineering practices and prepare for industrial environment. In addition, a Research Centre (RC) and core committee with state-of-the-art facilities have been established for PG, PhD scholars and faculty members.

**Computing facility:**

There are 06 computer labs with around 755 computers. Sophisticated software like MATLAB, ANSYS, XILINX, Auto CAD etc. are available. The campus is well connected with 24 hour campus wide Wi-Fi network with internet speed of 300 Mbps. All the computing facilities are enabled with the power backups such as UPS and generators for 24x7. A Security solution is used to secure campus IT facilities.

File Description	Document
Upload Additional information	<a href="#">View Document</a>
Provide Link for Additional information	<a href="#">View Document</a>

**4.1.2**

*Percentage of expenditure for infrastructure development and augmentation excluding salary during the last five years*

**Response:** 32.91

**4.1.2.1 Expenditure for infrastructure development and augmentation, excluding salary year wise during last five years (INR in lakhs)**

2022-23	2021-22	2020-21	2019-20	2018-19
444.911	377.9	306.703	382.532	745.386

File Description	Document
Institutional data in the prescribed format	<a href="#">View Document</a>
Audited income and expenditure statement of the institution to be signed by CA for and counter signed by the competent authority (relevant expenditure claimed for infrastructure augmentation should be clearly highlighted)	<a href="#">View Document</a>
Provide Links for any other relevant document to support the claim (if any)	<a href="#">View Document</a>

## 4.2 Library as a Learning Resource

### 4.2.1

*Library is automated with digital facilities using Integrated Library Management System (ILMS), adequate subscriptions to e-resources and journals are made. The library is optimally used by the faculty and students*

**Response:**

**Response:**

The management has a contributing approach towards the development and enhancement of the infrastructure facilities of the institution. The campus has technology-enabled classrooms with Wi-Fi connectivity and power back up by generator etc. Dedicated seminar halls, video conference halls and auditorium with audio visual facilities are also available. The institute has a dedicated digital Library equipped with computers for use by faculty members and student. In addition to the above, the institute has a central library which hosts a number of national and international journals with spacious reading room. NPTEL and other content are made available through respective departments. Every dept. is also equipped with exclusive departmental library. Annual budget is allocated for enhancement and up gradation of infrastructure facilities. The college has provided separate room TO IQAC cell, ED cell for conducting different activities. A placement cell, headed by a Placement Officer, is available on campus. Wi-Fi hot spots cover the entire campus.

**Details of ICT – enabled facilities such as smart class, LMS**

**Technology enabled learning rooms:**

Each department is provided with e-classrooms having seating capacity of 75 and public addressing system to facilitate active learning through LCD projector, Wi-Fi enabled internet connectivity etc.

**Seminar Halls:**

The institute has well designed seminar halls to conduct various events such as conferences, workshops, symposia, guest lectures and cultural activities etc. for students and faculty with seating capacity of average 200 and are fully air-conditioned. They are equipped with LCD projectors, LAN, Wi-Fi Facility and sufficient power backup with Generator and UPS.

**Library (LMS):**

The library has 44900+ volumes of books, 11600+ e-journals and 42000+ e-books. It has access to Scopus, DELNET discovery portal & LIBSYS database. It also has access to free resources provided through the National Digital Library of India, Video and web courses developed by IITs under NPTEL. The library has 02 computers to support the users to search and read documents. Printing, reprography and document scanning services are available.

**Details of Sports and other cultural facilities:**

The institution has adequate physical facilities which are augmented from time to time for conducting curricular, co-curricular and extracurricular activities efficiently. Regarding sports and games, REC is equipped with the required facilities for facilitating the students to actively take up and practise the indoor game and the outdoor which is provided by professional coaching. Sports activities, Yoga training, and Gym facilities are well maintained in shaping the students to be healthy, mentally and physically. The students are very much encouraged to participate in cultural fest.

**Details of additional infrastructures and institutional facilities:**

The Generators with a capacity of 500 KVA and 250 KVA, 24-hour internet in the campus with a band width of 300 Mbps, Medical Aid along with pharmacy facility, Transport facility, NSS, RO Plant, Hygienic Central Canteen, Canteen for boys hostel and girls hostel, ATM Service, Reprography, Sewage Treatment, Hostel and Mess are well retained.

File Description	Document
Upload Additional information	<a href="#">View Document</a>
Provide Link for Additional information	<a href="#">View Document</a>

**4.3 IT Infrastructure****4.3.1**

**Institution frequently updates its IT facilities and provides sufficient bandwidth for internet connection**

*Describe IT facilities including Wi-Fi with date and nature of updation, available internet bandwidth within a maximum of 500 words*

**Response:**

**Response:**

The IT facilities available in our college can be summarized as follows, LAN Facility There are 38 data network switches (Giga byte), 18 POE network switches for access points, CCTV cameras. 110 Mbps of internet connectivity is shared across the campus, where 100 Mbps is shared for the students.

**Server configurations in data center**

There 02 servers with Xeon E-5 version-2, 16 GB RAM, 1.0 TB hard drive, which are served as Domain Controller (DC), Additional Domain Controller, student biometric server, faculty biometric server and application servers.

LAN Facility

There are 38 data network switches (Giga byte), 18 POE network switches for access points, CCTV cameras. 300Mbps of internet connectivity is shared across the campus, where 100 Mbps is shared for the students.

**Server configurations in data center**

There 02 servers with Xeon E-5 version-2, 16 GB RAM, 1.0 TB hard drive, which are served as Domain Controller (DC), Additional Domain Controller, student biometric server, faculty biometric server and application

Back up device- 2TB for critical server back up

755 desktops are provided to all department labs with 250 configurations of Pentium dual core i3 10 generation 8GB, 1TB, hard disk with LAN connectivity. 200 desktops with configurations of core i3 8GB, 512SSD and 100 desktops of dual core 250GB, 2GB hard disks are available to carry out academic and administrative work.

**Software**

Windows 2008 server and windows 2011 multi point server available. We also use open source operating systems such as Fedora, Ubuntu and Cent OS. , STAAD Pro, Auto CAD, Turbo-C++,python, Oracle/my SQL, ORCAD, EDWIN XP, MATLAB, Xilinx, TANNER, Etap, Ansys, IBM SPSS which are either open access or licensed software. College is completely equipped with surveillance cameras for effective monitoring and security purpose

**Printers**

15 Laser jet printers, 08 Xerox centres and 05 scanners are provided across the campus for academic and administrative purposes.

### Updates and up gradation

Updates are maintained regularly through WSUS (Windows Server Update Service) and anti viruses are updated through cloud portal. Ram has upgraded in 67 computers in 1GB to 2 GB.

### Wi-Fi

24 Extendable Wi-Fi access points are placed in various places like Library, Corridors, Labs, Hostels, Canteen and Outdoor. Wi-Fi access is provided to all the students which is monitored and controlled by Linux server at the IT department for secure content access.

SI No	Items	2018-19	2019-20	2020-21	2021-22	2022-23
1	No.of Computer	612	625	632	658	658
2	Bandwidth	200 Mbps	200 Mbps	200 Mbps	300 Mbps	300 Mbps
3	Desktop Configuration	Dual core	I 3	I3	I3	I5
4	Accessories (printers,Xerox etc.)	15	16	16	22	25

File Description	Document
Upload Additional information	<a href="#">View Document</a>
Provide Link for Additional information	<a href="#">View Document</a>

### 4.3.2

#### Student – Computer ratio (Data for the latest completed academic year)

**Response:** 4.03

#### 4.3.2.1 Number of computers available for students usage during the latest completed academic year:

**Response:** 658

File Description	Document
Purchased Bills/Copies highlighting the number of computers purchased	<a href="#">View Document</a>
Extracts stock register/ highlighting the computers issued to respective departments for student's usage.	<a href="#">View Document</a>
Provide Links for any other relevant document to support the claim (if any)	<a href="#">View Document</a>

#### 4.4 Maintenance of Campus Infrastructure

##### 4.4.1

*Percentage expenditure incurred on maintenance of physical facilities and academic support facilities excluding salary component, during the last five years (INR in Lakhs)*

**Response:** 40.74

**4.4.1.1 Expenditure incurred on maintenance of infrastructure (physical facilities and academic support facilities) excluding salary component year wise during the last five years (INR in lakhs)**

2022-23	2021-22	2020-21	2019-20	2018-19
650.057	617.011	563.119	587.613	376.305

File Description	Document
Institutional data in the prescribed format	<a href="#">View Document</a>
Audited income and expenditure statement of the institution to be signed by CA for and counter signed by the competent authority (relevant expenditure claimed for maintenance of infrastructure should be clearly highlighted)	<a href="#">View Document</a>
Provide Links for any other relevant document to support the claim (if any)	<a href="#">View Document</a>



## Criterion 5 - Student Support and Progression

### 5.1 Student Support

#### 5.1.1

*Percentage of students benefited by scholarships and freeships provided by the institution, government and non-government bodies, industries, individuals, philanthropists during the last five years*

**Response:** 78.72

**5.1.1.1 Number of students benefited by scholarships and freeships provided by the institution, Government and non-government bodies, industries, individuals, philanthropists during the last five years**

2022-23	2021-22	2020-21	2019-20	2018-19
2178	2037	1857	1733	1750

#### File Description

#### Document

Year-wise list of beneficiary students in each scheme duly signed by the competent authority.

[View Document](#)

Upload Sanction letter of scholarship and free ships (along with English translated version if it is in regional language).

[View Document](#)

Upload policy document of the HEI for award of scholarship and freeships.

[View Document](#)

Institutional data in the prescribed format

[View Document](#)

Provide Links for any other relevant document to support the claim (if any)

[View Document](#)

#### 5.1.2

*Following capacity development and skills enhancement activities are organised for improving students' capability*

1. Soft skills
2. Language and communication skills
3. Life skills (Yoga, physical fitness, health and hygiene)
4. ICT/computing skills

**Response:** A. All of the above

File Description	Document
Report with photographs on Programmes /activities conducted to enhance soft skills, Language and communication skills, and Life skills (Yoga, physical fitness, health and hygiene, self-employment and entrepreneurial skills)	<a href="#">View Document</a>
Report with photographs on ICT/computing skills enhancement programs	<a href="#">View Document</a>
Institutional data in the prescribed format	<a href="#">View Document</a>
Provide Links for any other relevant document to support the claim (if any)	<a href="#">View Document</a>

### 5.1.3

**Percentage of students benefitted by guidance for competitive examinations and career counseling offered by the Institution during the last five years**

**Response:** 52.32

**5.1.3.1 Number of students benefitted by guidance for competitive examinations and career counselling offered by the institution year wise during last five years**

2022-23	2021-22	2020-21	2019-20	2018-19
1317	1286	1233	1176	1338

File Description	Document
Upload supporting document	<a href="#">View Document</a>
Institutional data in the prescribed format	<a href="#">View Document</a>

### 5.1.4

***The institution adopts the following for redressal of student grievances including sexual harassment and ragging cases***

- 1.Implementation of guidelines of statutory/regulatory bodies**
- 2.Organisation wide awareness and undertakings on policies with zero tolerance**
- 3.Mechanisms for submission of online/offline students' grievances**
- 4.Timely redressal of the grievances through appropriate committees**

**Response:** A. All of the above

File Description	Document
Proof w.r.t Organisation wide awareness and undertakings on policies with zero tolerance	<a href="#">View Document</a>
Proof related to Mechanisms for submission of online/offline students' grievances	<a href="#">View Document</a>
Proof for Implementation of guidelines of statutory/regulatory bodies	<a href="#">View Document</a>
Details of statutory/regulatory Committees (to be notified in institutional website also)	<a href="#">View Document</a>
Annual report of the committee motioning the activities and number of grievances redressed to prove timely redressal of the grievances	<a href="#">View Document</a>
Provide Links for any other relevant document to support the claim (if any)	<a href="#">View Document</a>

## 5.2 Student Progression

### 5.2.1

**Percentage of placement of outgoing students and students progressing to higher education during the last five years**

**Response:** 73.98

**5.2.1.1 Number of outgoing students placed and / or progressed to higher education year wise during the last five years**

2022-23	2021-22	2020-21	2019-20	2018-19
583	520	504	425	470

**5.2.1.2 Number of outgoing students year wise during the last five years**

2022-23	2021-22	2020-21	2019-20	2018-19
783	711	680	606	602

File Description	Document
Number and List of students placed along with placement details such as name of the company, compensation, etc and links to Placement order(the above list should be available on institutional website)	<a href="#">View Document</a>
List of students progressing for Higher Education, with details of program and institution that they are/have enrolled along with links to proof of continuation in higher education.(the above list should be available on institutional website)	<a href="#">View Document</a>
Institutional data in the prescribed format	<a href="#">View Document</a>
Provide Links for any other relevant document to support the claim (if any)	<a href="#">View Document</a>

### 5.2.2

*Percentage of students qualifying in state/national/ international level examinations during the last five years*

**Response:** 11.25

**5.2.2.1 Number of students qualifying in state/ national/ international level examinations year wise during last five years (eg: IIT/JAM/NET/SLET/GATE/GMAT/GPAT/CLAT/CAT/ GRE/TOEFL/ IELTS/Civil Services/State government examinations etc.)**

2022-23	2021-22	2020-21	2019-20	2018-19
20	23	16	19	21

File Description	Document
List of students qualified year wise under each category and links to Qualifying Certificates of the students taking the examination	<a href="#">View Document</a>
Institutional data in the prescribed format	<a href="#">View Document</a>
Provide Links for any other relevant document to support the claim (if any)	<a href="#">View Document</a>

## 5.3 Student Participation and Activities

**5.3.1**

**Number of awards/medals for outstanding performance in sports/ cultural activities at University / state/ national / international level (award for a team event should be counted as one) during the last five years**

**Response: 54**

**5.3.1.1 Number of awards/medals for outstanding performance in sports/cultural activities at national/international level (award for a team event should be counted as one) year wise during the last five years**

2022-23	2021-22	2020-21	2019-20	2018-19
20	8	3	8	15

**File Description****Document**

Upload supporting document

[View Document](#)

list and links to e-copies of award letters and certificates

[View Document](#)

Institutional data in the prescribed format

[View Document](#)

Provide Links for any other relevant document to support the claim (if any)

[View Document](#)

**5.3.2**

**Average number of sports and cultural programs in which students of the Institution participated during last five years (organised by the institution/other institutions)**

**Response: 21**

**5.3.2.1 Number of sports and cultural programs in which students of the Institution participated year wise during last five years**

2022-23	2021-22	2020-21	2019-20	2018-19
28	15	14	21	27

File Description	Document
Upload supporting document	<a href="#">View Document</a>
Institutional data in the prescribed format	<a href="#">View Document</a>

## 5.4 Alumni Engagement

### 5.4.1

**There is a registered Alumni Association that contributes significantly to the development of the institution through financial and/or other support services**

**Response:**

The REC Alumni Association (RAA), which was founded in 2011, aims to establish and preserve a lifetime relationship between the Institute and its more than 6,000 alumni. Alumni consistently return to the school to offer a variety of contributions. They frequently mentor the current students and share their experiences in the classroom, in sporting and cultural events, or even in the workplace (by preparing them for corporate recruitment or educating them about career prospects in their respective fields). The REC Alumni Association (RAA) is a formally authorized organization. Members of the RAA include bonafide REC graduates as well as official staff members who have served for more than three years. Through various seminars, workshops, and other events, RAA transforms knowledge and is also actively involved in social activities. Each year, chapter-specific alumni meetings are held, and the annual alumni meet takes place in the third or fourth week of December. As on date student members are contributing Rs.500/- (Rupees Five Hundred Only) as lifetime membership fees and all the expenses are made from such contributions only. Few alumni also contribute in addition to their life time membership fees. Alumni President, Secretary and other members meet on a regular basis to conduct executive body meetings for activating different programs of RAA. It conducts regular interactions with junior students for personality development and technical skill development.

**Main Objective of RAA:**

1. Alumni Career and Networking Services
2. Life-long Learning
3. Student-Alumni Contact
4. Events and Reunions
5. Geographic Alumni Chapters

**Other Objectives:**

1. To promote and encourage close relations between the college and its alumni.
2. To develop in the alumni, an interest in the affairs and well-being of the college.
3. To provide and disseminate information regarding their Alma Matter, Faculties and students, to the alumni.
4. To initiate and develop programs that will benefit the alumni.
5. To help get funds for development of the college.
6. To help the college in its pursuit for academic excellence.
7. To guide and assist alumni who have recently completed their courses to obtain employment in schools/colleges and engage in productive pursuits useful to society.
8. To organize reunion activities of the Alumni.

File Description	Document
Upload Additional information	<a href="#">View Document</a>
Provide Link for Additional information	<a href="#">View Document</a>

## Criterion 6 - Governance, Leadership and Management

### 6.1 Institutional Vision and Leadership

#### 6.1.1

*The institutional governance and leadership are in accordance with the vision and mission of the Institution and it is visible in various institutional practices such as NEP implementation, sustained institutional growth, decentralization, participation in the institutional governance and in their short term and long term Institutional Perspective Plan.*

#### **Response:**

REC imparts quality education to the students with the following defined vision, mission and quality policy:

**Vision:** IQAC aims to work towards quality sustenance and enhancement of the academic and administrative performance of the institution to become a global leader in technical education through Creativity and Innovation.

#### **Mission:**

- To develop a system for the consistent improvement in the overall performance of students and staff of the institution
- To promote innovative pedagogic practices to enhance learning effectiveness
- To nurture a learner-centric environment for students and staff through advanced academic programmes and pedagogic activities

**Quality Policy:** Strive for global professional excellence in pursuit of key-stakeholders.

**Governance:** The Management accords top priority for decentralizing and participatory mode of governance giving autonomy to all stakeholders in the administration. The Governing-Body delegates authority to the Secretary& Correspondent, the Director and the Principal. The Director shares the authority through the Principal with Deans, HODs, Coordinators of various cells/committees and Administrative Officer. IQAC plays a key role in preparation of the strategic plan by consolidating the goals and objectives of every department and cells/committees.

**Perspective-Plan:** The Management is assisted by the Governing-Body in planning and execution of various domains. The action plans are formulated in line with Vision and Mission for effective implementation. Meetings with stakeholders are conducted periodically to receive their feedback for implementing necessary action plans for Institutional progress.

**Administrative-Autonomy:** It is decentralized as shown below for better governance.

**IQAC-Autonomy:** IQAC Coordinator has the autonomy to modify, implement, channelize and systematize the efforts and measures towards academic excellence.



**Financial-Autonomy:** Financial committee reviews the funding pattern, provides guidelines and strategies for mobilizing resources to support the implementation of the Institutions strategic plan, and the fulfilment of the vision and mission.

**Student-Autonomy:** Students are assigned posts like class representatives, cell coordinators and representatives of various events. They are given freedom to put forth requirements in respective meetings.

**Participation of Faculty Members:** Selected faculty members are nominated as members of Governing-Body, Academic-Council, and other academic related cells/committees/clubs/ professional-associations at departmental-level for monitoring continuous improvement.

**NEP-Implementation:**

- Awareness programmes on NEP.
- NEP implementation in the curriculum w.e.f.2022.
- Effective use of ICT in TLP.
- Faculty participation in FDPs and various training programs.
- Organization of various cultural and sports activities, to inculcate Indian values.
- Students' progress is measured by the attainment of COs, POs and PSOs.

**Short-Term Perspective-Plan**

- 1.Enhancement in paper publication by 25% every year.
- 2.Target at-least one Government sponsored R&D project.
- 3.Strengthen the performance of R&D Cell in all areas.
- 4.Enhancement in placements by 25% every year.

**Long-Term Perspective Plan**

- 1.Achieve 100% Placements.
- 2.Contribution in nation building through full-fledged functioning of R&D Cell.
- 3.Strive to achieve NIRF rank below 100.
- 4.Deemed to be University status.
- 5.Fully Residential Campus.

File Description	Document
Upload Additional information	<a href="#">View Document</a>
Provide Link for Additional information	<a href="#">View Document</a>

## 6.2 Strategy Development and Deployment

### 6.2.1

*The institutional perspective plan is effectively deployed and functioning of the institutional bodies is effective and efficient as visible from policies, administrative setup, appointment, service rules, and procedures, etc*

#### Response:

The Teaching and Learning process includes Implementation of outcome-based education, academic research, guest lecturers. To make learning more effective we have the choice-based credit system and grading system of examinations as per the university norms. The following strategies have been adopted for improvement of teaching and learning process:

- 1. Organizations of Remedial classes-** Slow & Advanced learners are divided & trained separately. Mentoring, tutoring, counselling, remedial classes, and sponsorships are provided to students from disadvantaged sections, those who are differently-abled and those with special needs.
- 2. Feedback System-**Regular feedback is taken on teaching & analysed through online in college management system (CMS). The college conducts a student appraisal of teachers, and takes a parent feedback to evaluate the teaching learning process at the institutional level and suggest measures for improvement.
- 3. Continuous improvement of resources-** Innovative teaching pedagogies are implemented for different category of students in areas like field trips and lab exercises and peer-to-peer teaching. The guiding standard behind workshops is to ensure that, students can link theory with practice, apply their knowledge and develop new skills.
- 4. Provision of e-classrooms-** We ensure a perfect blend of classroom teaching & ICT enabled teaching so that the students are motivated all the times. Ergonomically designed classrooms with networking facility are available
- 5. Academic Review meeting** -Every Thursday, all the faculty members assemble and discuss different aspects of the teaching & learning process, starting from curriculum to pedagogy, best practices, & latest trends in knowledge and industry. Each course module plan is presented & discussed. Quality improvement in teaching and learning is designed and deployed with an aim of preparing the students for becoming competent and professional engineers in their respective branches.
- 6. Conduct of pre-placement training classes and campus connect programs-**One training placement cell is in college which can conduct the training of students from the 1st semester onwards. They can

conduct the placement also.

**7. Structured course files and lab manuals on all courses-** Total syllabus followed the rules of BPUT academic calendar. First college prepared workload of faculty and distributed among the faculty. Then according to the workload timetable prepared by the timetable management. The faculties are prepared the lesson plan and upload it into the college management system (CMS).

**8. Development of student support material-** Subject wise Lecture notes and study materials are prepared by the faculties and upload it into the college management system (CMS).

**9. Conduct of GATE and different competitive coaching classes –** College provides different coaching classes for different competitive courses itself in the college campus.

**10. Industry interaction-** To impart hands on exposure of real work environment in the industries and to keep pace with modern technologies, the institution has formed an Industry Institute Interaction Committee which works closely with the industries and carries out the activities like Industrial Tours, Summer internship, Guest lectures by the experts from industry.

File Description	Document
Upload Additional information	<a href="#">View Document</a>
Institutional perspective Plan and deployment documents on the website	<a href="#">View Document</a>
Provide Link for Additional information	<a href="#">View Document</a>

### 6.2.2

*Institution implements e-governance in its operations*

- 1. Administration**
- 2. Finance and Accounts**
- 3. Student Admission and Support**
- 4. Examination**

**Response:** A. All of the above

File Description	Document
Screen shots of user interfaces of each module reflecting the name of the HEI	<a href="#">View Document</a>
Institutional expenditure statements for the budget heads of e-governance implementation ERP Document	<a href="#">View Document</a>
Annual e-governance report approved by the Governing Council/ Board of Management/ Syndicate Policy document on e-governance	<a href="#">View Document</a>
Provide Links for any other relevant document to support the claim (if any)	<a href="#">View Document</a>

### 6.3 Faculty Empowerment Strategies

#### 6.3.1

**The institution has performance appraisal system, effective welfare measures for teaching and non-teaching staff and avenues for career development/progression**

**Response:**

Welfare measures taken towards the staff reflects on the output and selfless contribution towards tremendous growth of any Institution. In our Institution Staff welfare is given foremost importance. In connection with this, Existing welfare measure for teaching and non-teaching staff are itemised below:

1. Faculties are provided with appreciation after completing PhD.
2. Recognition for good work based on Performance Based Appraisal System (PBAS) performance and outstanding contribution. The college have different measures for measuring the performance of a faculty and provide the appropriate appraisal accordingly.
3. Duty Leave, medical Leave, Casual leave is provided to the faculties for various purpose. The institution also has special leave that is granted to faculties on non-negotiable days to apply the leave, for example voting day.
4. Maternity leave for female faculty and non-teaching staff. A leave of 90 days is extended to the one availing maternity period. Maternity leave may also be granted in case of miscarriage that does not exceed six weeks.
5. Faculties are provided with TA and DA for presenting technical papers in national and international conference.
6. Faculties are provided with honorarium under the scheme of employee referral program which include financial rewards.
7. ATM facility is provided for all inside the campus.
8. Accommodation facilities in quarters are provided for teaching and non-teaching staff
9. Staffs are provided with free internet in the college campus.
10. All faculties are provided to issue and have free access to online magazines, journals and books in library.

11. Faculties are sponsored to attend seminar/conference/ Workshop in every academic year and he/she may also be paid with full/partial registration fee.
12. Teaching and non-teaching members are provided with free transport facility.
13. Free medical checkup for 24 hours (24x7) inside the campus is provided for all.

File Description	Document
Upload Additional information	<a href="#">View Document</a>
Provide Link for Additional information	<a href="#">View Document</a>

### 6.3.2

#### Percentage of teachers provided with financial support to attend conferences/workshops and towards membership fee of professional bodies during the last five years

**Response:** 76.9

#### 6.3.2.1 Number of teachers provided with financial support to attend conferences/workshops and towards membership fee of professional bodies year wise during the last five years

2022-23	2021-22	2020-21	2019-20	2018-19
136	114	107	109	60

File Description	Document
Policy document on providing financial support to teachers	<a href="#">View Document</a>
Institutional data in the prescribed format	<a href="#">View Document</a>
Copy of letter/s indicating financial assistance to teachers and list of teachers receiving financial support year-wise under each head.	<a href="#">View Document</a>
Audited statement of account highlighting the financial support to teachers to attend conferences / workshop s and towards membership fee for professional bodies	<a href="#">View Document</a>
Provide Links for any other relevant document to support the claim (if any)	<a href="#">View Document</a>

### 6.3.3

**Percentage of teaching and non-teaching staff participating in Faculty development Programmes (FDP), Management Development Programmes (MDPs) professional development /administrative training programs during the last five years**

**Response:** 72.35

**6.3.3.1 Total number of teaching and non-teaching staff participating in Faculty development Programmes (FDP), Management Development Programmes (MDPs) professional development /administrative training programs during the last five years**

2022-23	2021-22	2020-21	2019-20	2018-19
135	124	115	114	106

**6.3.3.2 Number of non-teaching staff year wise during the last five years**

2022-23	2021-22	2020-21	2019-20	2018-19
31	29	26	26	25

File Description	Document
Refresher course/Faculty Orientation or other programmes as per UGC/AICTE stipulated periods, as participated by teachers year-wise.	<a href="#">View Document</a>
Institutional data in the prescribed format	<a href="#">View Document</a>
Copy of the certificates of the program attended by teachers.	<a href="#">View Document</a>
Annual reports highlighting the programmes undertaken by the teachers	<a href="#">View Document</a>
Provide Links for any other relevant document to support the claim (if any)	<a href="#">View Document</a>

## 6.4 Financial Management and Resource Mobilization

### 6.4.1

**Institution has strategies for mobilization and optimal utilization of resources and funds from various sources (government/ nongovernment organizations) and it conducts financial audits regularly (internal and external)**

**Response:****Resource Mobilization Policy of the institute:**

Finance is the engine of growth of any institute. Being a self-financing institute, the major source of REC is tuition fee collected from the students. Apart from this, the institute also generate funds from projects sponsored by government agencies, industry and consultancy services. Institute also receive grants from AICTE, UGC, BPUT , SCTEVT , Utkal university and etc. to organize seminars, FDP, MDP etc.

**Institution conducts internal and external financial audits regularly**

REC, Bhubaneswar believes in transparency in all the aspects of its financial matters. It conducts both internal and external financial audits in regular manner. It has a fulltime Treasurer and Accounts Department since inception to ensure maintenance of annual accounts and audits.

The proposal on budget allocation is prepared by the Head of the Institution, by considering the recommendations made by the heads of all the departments and submits to the management. The allocated budget will be examined by the accounts department whether expenses are as per the budget approved by the management. The budget of the year includes recurring expenses such as maintenance cost, electricity, internet charges, salary, stationery, other consumable charges etc., and non – recurring expenses like furniture, lab equipment purchases, and other development expenses.

**Internal Audit:** Internal Audit is being conducted in each month from 25th to end of the month by Internal Auditors with an objective to review the routine activities and evaluate the financial efficiency of the organization.

**Process of internal auditing**

The internal auditing committee regularly reviews all of the invoices and vouchers. All of the expense records were correctly maintained by the accounts department. The institution attaches the greatest importance to the keeping of accurate accounts. When the fiscal year comes to an end, a legal audit is performed. The audit report is examined by management.

The efficient use of financial resources is planned at the start of every fiscal year. Purchase orders for laboratory equipment, instructional aides, furnishings, facilities, and payment of maintenance bills are handled by the accounts department, along with tuition fee collection, wage distribution, tax payment, and loan distribution.

**External Audit:** External Audit is also being done by a chartered Firm of the institute after completion of the financial year for the Institute and the same have been submitted after the end of every year. External audit is undertaken to evaluate and examine the financial statement of the organization.

**Process of external auditing**

According to government regulations, external auditing is usually performed on an annual basis. Following the auditor's confirmation, all transactions are properly authorized and presented to management for additional examination. Any discrepancy discovered during the audit process will be examined right away, together with any necessary supporting documentation, within the set time frames.

File Description	Document
Upload Additional information	<a href="#">View Document</a>
Provide Link for Additional information	<a href="#">View Document</a>

## 6.5 Internal Quality Assurance System

### 6.5.1

**Internal Quality Assurance Cell (IQAC) has contributed significantly for institutionalizing the quality assurance strategies and processes. It reviews teaching learning process, structures & methodologies of operations and learning outcomes at periodic intervals and records the incremental improvement in various activities**

#### Response:

#### About IQAC:-

To maintain the institution's post-accreditation quality, every recognized school is required to set up an Internal Quality Assurance Cell (IQAC) in accordance with National Assessment and Accreditation Council (NAAC) requirements. An essential component of Raajdhani Engineering College's quality culture, the IQAC strives to achieve quality objectives. Raajdhani Engineering College's IQAC serves as the focal point for organizing quality-related initiatives including implementing and sharing best practices. Its main goal is to create a system that will consciously, consistently, and catalytically raise college students' overall performance.

#### Objectives of IQAC:-

The institution wants to use teaching, promoting, and sharing a comprehensive education to assist girls in developing a sense of independence and responsibility as important members of society. With this objective in mind, the IQAC has concentrated on Mental Well-Being workshops and programs, especially for students.

#### Functions of IQAC:-

Interactive sessions led by professionals at IQAC help young adults address common worries and fears. These sessions help students communicate their fears and anxieties, enabling them to identify areas of concern. The support of resource individuals helps students overcome challenges, develop their best traits, and accept academic and nonacademic achievements and losses with grace. These sessions uplift children's emotions and mental wellbeing, impacting the academic calendar.



**1 .Teaching- Learning reforms:**

- **Implementation of learning reforms by IQAC:-**

REC's IQAC regularly reviews the well-designed approach in the teaching-learning process, utilizing Biju Pattnaik University of Technology's academic calendar. The Departmental Advisory Board and Performance Assessment Committee (PAC) examine course coverage, extra classes, ICT resources, classroom discipline, and more. Innovative learning strategies, such as peer teaching, experiential learning, guest lectures, and ICT adoption, are also implemented. Regular feedback from students and stakeholders is collected through online systems, meetings, mentoring activities, and suggestion boxes, ensuring 100% student satisfaction in the teaching-learning process.

- **Faculty empowerment**

It is recommended that faculty members take NPTEL courses and recommend publications, virtual labs, e-journals, and other MOOCs. Through faculty development programs offered at their own college and other colleges, faculty training, counselling, industry internships, research grants, membership in various societies, support for publications and conferences, PhD studies, and other means, all faculty members are empowered.

**2. Annual Academic Audit:**

6

In accordance with our IQAC's mission statement, which aims to ensure a quality culture focused on all-around excellence in technical education as well as the enhancement, updating, and continual improvement of academics, we undertake an internal and external academic audit each year. Each year, Biju Pattnaik University of Technology, the affiliating university, performs an academic audit. Renewing affiliation is based on the audit report.

The internal academic audit emphasizes creating lesson plans, maintaining an online faculty log book, tracking syllabus coverage, adhering to the academic calendar, monitoring student attendance, and developing a quality culture among faculty members. It also includes reverse engineering studies, value-added courses, skill training, department libraries, ICT facilities, expert lectures, evaluation of student projects, external experts, co-curricular activities, GATE performance, student feedback, publications, faculty involvement, and review of attainment of CO, PO, and PSO.

<b>File Description</b>	<b>Document</b>
Upload Additional information	<a href="#">View Document</a>
Provide Link for Additional information	<a href="#">View Document</a>

**6.5.2****Quality assurance initiatives of the institution include:**

- 1.Regular meeting of Internal Quality Assurance Cell (IQAC); quality improvement initiatives identified and implemented**
- 2.Academic and Administrative Audit (AAA) and follow-up action taken**
- 3.Collaborative quality initiatives with other institution(s)**
- 4.Participation in NIRF and other recognized rankings**
- 5.Any other quality audit/accreditation recognized by state, national or international agencies such as NAAC, NBA etc.**

**Response:** A. Any 4 or more of the above

<b>File Description</b>	<b>Document</b>
Quality audit reports/certificate as applicable and valid for the assessment period.	<a href="#">View Document</a>
NIRF report, AAA report and details on follow up actions	<a href="#">View Document</a>
List of Collaborative quality initiatives with other institution(s) along with brochures and geo-tagged photos with caption and date.	<a href="#">View Document</a>
Provide Links for any other relevant document to support the claim (if any)	<a href="#">View Document</a>
Link to Minute of IQAC meetings, hosted on HEI website	<a href="#">View Document</a>

## Criterion 7 - Institutional Values and Best Practices

### 7.1 Institutional Values and Social Responsibilities

#### 7.1.1

**Institution has initiated the Gender Audit and measures for the promotion of gender equity during the last five years.**

*Describe the gender equity & sensitization in curricular and co-curricular activities, facilities for women on campus etc., within 500 words*

**Response:**

- To promote and nurture gender equity, our institution established Women Empowerment Cell.
- All the students are encouraged to participate in various Technical Workshops, Seminars and Smart India Hackathon sans any gender discrimination.
- REC Management, with the vision to ensure the progress of overall society with the active participation of women in the noble profession of imparting of knowledge and skill acquisition.
- Enough number of female faculty members are maintained who play key roles in major positions of various club and various invaluable activities.
- Women Empowerment Cell aims to empower girl students and faculty to enhance their understanding of issues related to women and to make the college campus a safe place for girls and women.
- The cell brings advancement, development and empowerment of women through Guest Lecture Programs, Seminars, Awareness Programs and other welfare activities since its formation.
- A separate woman in-house Counselor is available in the college to help the students to resolve their issues and help them to realize their academic dream in a safe and secure environment.
- Yoga and Meditation awareness programmes, targeted specifically at women are performed in the campus premises to encourage a healthy life for women in and outside of the campus. A healthy body houses a healthy mind.
- Seminar on Women Research promotion schemes encourage women to take up research with enthusiasm. There are numerous benefits provided to lady faculty members like financial benefits, leaves and accommodation at recognized institution etc.
- Gender sensitization program helps facilitate an equal connection between colleagues of opposite gender. It also helps them understand the difference between intentions in touch.
- “Beti Bachao, Beti Padhao” is a personal campaign by the Indian government to educate women in order to achieve complete autonomy in decision-making, finance management and fighting against discrimination.
- Sexual Harassment Awareness is an integral part of every society. Women need to be aware of the support they receive in case of any sexual mischief, eve-teasing or harassment which happens against them.

File Description	Document
Upload Additional information	<a href="#">View Document</a>
Provide Link for Additional information	<a href="#">View Document</a>

**7.1.2**

**The Institution has facilities and initiatives for**

- 1. Alternate sources of energy and energy conservation measures**
- 2. Management of the various types of degradable and nondegradable waste**
- 3. Water conservation**
- 4. Green campus initiatives**
- 5. Disabled-friendly, barrier free environment**

**Response:** A. 4 or All of the above

File Description	Document
Policy document on the green campus/plastic free campus.	<a href="#">View Document</a>
Geo-tagged photographs/videos of the facilities.	<a href="#">View Document</a>
Circulars and report of activities for the implementation of the initiatives document	<a href="#">View Document</a>
Bills for the purchase of equipment's for the facilities created under this metric	<a href="#">View Document</a>
Provide Links for any other relevant document to support the claim (if any)	<a href="#">View Document</a>

**7.1.3**

**Quality audits on environment and energy regularly undertaken by the Institution. The institutional environment and energy initiatives are confirmed through the following**

- 1. Green audit / Environment audit**
- 2. Energy audit**
- 3. Clean and green campus initiatives**
- 4. Beyond the campus environmental promotion activities**

**Response:** A. All of the above

File Description	Document
Report on Environmental Promotional activities conducted beyond the campus with geo tagged photographs with caption and date	<a href="#">View Document</a>
Policy document on environment and energy usage Certificate from the auditing agency	<a href="#">View Document</a>
Green audit/environmental audit report from recognized bodies	<a href="#">View Document</a>
Certificates of the awards received from recognized agency (if any).	<a href="#">View Document</a>
Provide Links for any other relevant document to support the claim (if any)	<a href="#">View Document</a>

#### 7.1.4

**Describe the Institutional efforts/initiatives in providing an inclusive environment i.e., tolerance and harmony towards cultural, regional, linguistic, communal socioeconomic and Sensitization of students and employees to the constitutional obligations: values, rights, duties and responsibilities of citizens (Within 500 words)**

##### **Response:**

India is blessed with the people who are endowed with the kind heart to be the perfect symbol of tolerance and flexibility. As diverse people reside in India as a single abode sans discriminations guiding the universe how to live and let live other fellow human beings as well other living organisms. It is a well-known fact that the students understand and assimilates the essence of events and functions of different kinds after their significance is enunciated through college programs.

Celebrating events and festivals in our college becomes a vital part of learning and building a strong cultural belief. These celebrations bring the students closer to each other's traditions and cultural beliefs and develop respect and understanding for each other's customs and traditions. There are three types of celebrations, namely seasonal, national and religious.

##### **The objectives of celebrating these festivals are:**

National festivals will create a unifying bond and infuses the patriotic spirits among the students helping them grow and mature into the better citizens.

Religious festivals preach the students about the values and ethics to be adhered to in order to live peacefully.

International festivals will help the students realize the practice of brotherhood among all kinds of people from the different parts of the world which will ensure the world free of conflicts, enmity and wars.

**Independence Day:** Every one of the residents of this nation need to praise the Independence Day to show our fortitude towards the country. It will likewise show the regard we have to the political dissidents who gave their lives for Freedom. Independence Day festivity likewise rouses the youthful age to serve the country.

**National Education Day:** National Education Day is celebrated in India on November 11th every year. This date was chosen to commemorate the birth anniversary of Maulana Abul Kalam Azad, who was a prominent freedom fighter, a leading political figure, and the first Education Minister of independent India. He played a crucial role in the development of education in India, advocating for universal education and educational reforms.

**National Voter's Day:** We celebrate National Voter's Day on 25th January. The main intention was to create awareness about rights and duties of the eligible voters in our democratic system.

**Gandhi Jayanti Celebration:** This day is celebrated as the "International Day of Non-violence" in worldwide. The main objective of celebrating this day is to guide the whole human race to be humble and simple letting people live peacefully through the principles of nonviolence and many a leaders strived to make the world a heaven in the earth by following Gandhian Principles.

**World Wildlife Day:** World Wildlife Day is celebrated annually on March 3rd to raise awareness about the importance of wildlife conservation and to promote the protection of endangered species and their habitats. It provides an opportunity to highlight the critical role that wildlife plays in maintaining ecological balance and sustaining the planet's biodiversity.

File Description	Document
Upload Additional information	<a href="#">View Document</a>
Provide Link for Additional information	<a href="#">View Document</a>

## 7.2 Best Practices

### 7.2.1

**Describe two best practices successfully implemented by the Institution as per NAAC format provided in the Manual**

**Response:**

**Best Practice-I**

**Name of the Practice:** Clean and Green Campus, Clean and green world

**Objectives of the Practice**

In order to achieve zero waste inside the campus, we promote clean and environmental friendly

atmosphere

### **The Context**

The Clean and Green campus fosters sustainability, environmental responsibility, and the overall well-being of the Institution. By prioritizing responsible resource management, the Institution contributes to broader environmental conservation efforts, implements eco-friendly practices, reduce carbon footprint, and conserve resources to maintain a clean and green campus.

### **The Practice**

**Clean Campus:** The Institution shines with cleanliness, promoting a healthy and inviting environment for all students and staff. The Institution addresses the daily influx of organic waste and leaves through a robust Solid Waste Management system.

**Student Project:** Smart E-Dustbin automatically opens the lid to detect people (who want to throw our thrash). It detects the level of trash inside the dustbin. Additionally it can alert the user when the bin reaches capacity, ensuring timely collection and preventing overflow.

**Green Campus:** With its lush, verdant landscape and eco-centric practices the Institution is a testament to the commitment to preserve the planet. Rain Harvesting is facilitated in the campus by providing proper pipelines and perforated concrete pathways to collect the rainwater. Collected rainwater is diverted into the soak pits for ground water recharging.

**Integration of solar panels:** Raajdhani Engineering College demonstrates a commitment to renewable energy. This not only reduces carbon footprint but also slashes electricity bills significantly. It promotes a great green campus initiative.

**Green Campus Initiatives:** Restricted Entry of Automobiles - Vehicle entry is restricted inside the campus to minimize carbon footprint. Paperless circulars: Paper damages the environment in many ways.

### **Evidence of Success**

It has been found that the alumni of the institute are efficient and effective in their challenging projects. Students' absenteeism is minimized because of the soothing and clean class room atmosphere as this is being achieved due to the peaceful ambiance of the campus. The nurturing of the man-managerial skills among the students through sports events and regular sports hours create an avenue for the friction-free personal life and career progress. By adaptation of the conservation methods, students are equipped with the knowledge of using the electric energy effectively with recent technologies.

### **Problem Encountered**

We faced difficulties in sensitizing a very few students to dispose the waste by using dustbins. The institute always encounters hurdles in encouraging the female students to participate in sporting

activities.

## **BEST PRACTICE - II**

### **Title of the Practice: Nurturing Community Development with National Service Scheme (NSS)**

#### **Objectives of the Practice:**

- It is to sensitize the students about the importance of serving the society through their self-less service in the creation of awareness among the illiterate and poor people.
- It is to educate the public through students' active involvement in spreading awareness among general public
- It is to help the students in finding out practical solutions to individual and community problems.
- **The Context**
- The NSS Unit of the College under the effective leadership of the NSS Program Officer is actively engaged in a variety of activities throughout the academic year.
- The NSS unit had started its activities in the beginning of the academic session with the full support of our NSS volunteers under the leadership of program officer. The interested students as a whole were motivated to involve themselves deeply in social activities that eventually make them resourceful and socially conscious.
- NSS Volunteers learn how to work with rural community people, generating awareness about blood donation, hygiene and prevention of various diseases.
- NSS volunteers conducted a wide range of activities like cleanliness program, special camp, surveys, observance of important days and awareness campaign.
- The overall aim of our Institute through NSS activities is to strive to ensure the knowledge society.

#### **The Practice**

- Blood Donation Camps:
- COVID-19 awareness:
- Health Camps:
- Literacy Programs
- Environmental Awareness Campaigns:
- Swachh Bharat Abhiyan:
- Skill Development Workshops:
- Community Development Projects:
- Disaster Management:
- Awareness Campaigns on Social Issues:
- Adoption of Villages:
- Education Initiatives:
- Skill Development Workshops:
- Environmental Conservation:
- Women Empowerment:
- Livelihood Enhancement:
- Child Welfare Programs:



- Disaster Relief and Preparedness:
- Human Rights Advocacy:
- Community Development Projects:
- Health Awareness Campaigns:
- Nutrition Programs:
- Old Age Support:
- Social Inclusion Initiatives:

### Evidence of Success

- The participated students appeared more sensitized to their surroundings and are motivated to participate in other social activities, like blood donation camps, medical camps covid vaccination drives etc. conducted by college.
- The main outcome of the National Service Scheme is that it helps the students to gain a democratic attitude along with the confidence to become leaders.
- The students learn the social problems faced by villagers and have an understanding their part that they play in the society.
- This Scheme helps the students to gain the strength to handle emergency or challenging situations with calmness.
- It develops a sense of responsibility and identifying problems faced by society.
- The students joining this scheme develop many behavioral interactive skills.
- Development of social and civic responsibility in the volunteers.
- Volunteers acquire leadership qualities and democratic attitudes.
- Development of competence in volunteers which is required for group activities and sharing of responsibilities.

### Problems Encountered

- One of the major problems of the NSS is that the goals and objectives of the NSS are numerous and College as well as people have high expectations from the NSS volunteers and activities.
- Due to the superstitious beliefs prevalent among illiterate and also educated, we faced difficulty in reaching out to many people because of the well-entrenched social practices.
- At the same time, NSS volunteers are unable to reach all the targeted audiences.

File Description	Document
Best practices as hosted on the Institutional website	<a href="#">View Document</a>
Any other relevant information	<a href="#">View Document</a>

## 7.3 Institutional Distinctiveness

### 7.3.1

**Portray the performance of the Institution in one area distinctive to its priority and thrust within 1000 words**

**Response:**

**7.3.1 Portray the performance of the Institution in one area distinctive to its priority and thrust within 1000 words**

## **Vedic Education system**

Raajdhani Engineering College envisions to become an institution of Academic Excellence in technical education, innovative research, and entrepreneurship. There are so many things an institution needs to take care of if they have to achieve their goal. It needs both on and off-campus guidance to students. The teachers need to be connected on a more personal level in order to make students better human beings rather than students.

We vow to educate students through academic courses and provide knowledge of social and industrial needs. In order to enhance the quality of education and research further, we collaborate with leading academic and scientific institutions across the globe. A sense of social responsibility needs to be instilled in students which motivates them to become competent entrepreneurs.

The values of ancient Indian education system still stand the test of time. It is effective in the holistic growth of students. This all-round development will create better citizens for our country and better engineers for the global market. We believe in it ardently and consider its infusion with modern education system as our institutional distinctiveness.

### **Gurukul Parampara**

Raajdhani Engineering College fosters the values of ancient Vedic education system for holistic growth of students. The “**Gurukul Parampara**” instills deeper connection between teachers and students through the “**Proctor System**”. A deeper connection helps in deeper understanding of topics of knowledge as well as society. The students discuss their problems or lacunas in front of their proctors like they do with their parents.

It helps mentors understand the problems students are facing in real-time inside the campus. Teachers identify the root of the problem and resolve it with due involvement of Principal or other higher authorities. We believe in speedy resolution of problems which instills more trust in the management system.

Each teacher is assigned around 30 students as a proctor and they take care of all responsibilities associated with the growth of the students. They keep track of the payments made, conversations with parents and complains about the student received from other faculty members. They are the first psychological analyzers who talk to their parents for better understanding of problems.

### **Off-Campus Interaction**

Values play a very important role in individual growth. To instill values in students, REC encourages Off-Campus Interaction programs where teachers voluntarily involve themselves in teaching the students

how to be better in person. They teach Individual growth, Work ethics, Problem dealing mechanisms and support the students emotionally. After years of practicing this as our institutional value, examining bodies understood the importance of value education and introduced it as a subject in the curriculum of Engineers in the very first year.

Our teachers meet students in off-hours of the institution to resolve their doubts or just to spend time. It gives students from other states a sense of belonging and homesick students feels at home. There are countless benefits of off-campus interaction. Because of power hierarchy, most students remain conserved and don't express their true self in front of teachers or friends. It is extremely hard to maintain a fake persona in public most of the time. This gives the proctor an insight into the thought process of the student.

### **Breaching the Generation gap**

Raajdhani Engineering College believes in “**Breaching the generation gap**”. All our departments are a perfect balance on the tier system scale. Limited number of extremely experienced faculty and more zealous young lecturers help maintain the energy-knowledge-respect balance in the institution. HODs are extremely friendly and helpful. They ensure active participation of department teachers in cultural events, birthdays and ceremonies.

Senior faculty introduce faculties to lab equipment on a regular basis, ensuring smooth working of the equipment. It is termed **GATE (Getting Acquainted to The Equipment)** and is a highly interactive experience. Bonding over common fields of interest creates the strongest bonds. Our Civil and Mechanical branches test machines and equipment regularly to keep in touch with their love for the practicalities of engineering. It also helps maintain the machines for the use of young and budding engineers.

### **GATE (Getting Acquainted to The Equipment)**

### **Gender Neutral Ambience**

Gender Neutral Ambience is one of the best things at Raajdhani Engineering College. And, it does not stop at impartial treatment of students alone. Its extension towards faculty members getting paid the same amount of salary rooting from their experience irrespective of their gender is impressive. The institute also has a Women's Cell which ensures a safe working environment for lady faculty members as well as students. They also organize various programs for the propagation of Women Empowerment and equality.

### **Fostering a growing mindset**

To top it all off, the institution encourages faculty members to seek better opportunities and career paths. This constructive attitude towards growth of faculty makes them feel like a part of this ever-growing family. They are invited during seminars and presentations as special speakers and guests. Felicitation of faculty members after receiving Doctorate is a ritual at Raajdhani Engineering College. This boosts the morale of existing faculty members and is a way to show their gratitude for being a part of the institution.

<b>File Description</b>	<b>Document</b>
Appropriate web in the Institutional website	<a href="#">View Document</a>
Any other relevant information	<a href="#">View Document</a>

## 5. CONCLUSION

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### **Additional Information :**

Raajdhani Engineering College (REC), Bhubaneswar was established in the year 2006 by Samriddhi Educational Trust, Odisha, with a group of highly talented professionals in the field of Education, Industry, Engineering and Technology over the years. The college is functioning at Bhubaneswar near Mancheswar Railway Station in a sprawling campus of 10.36 acres. REC is Approved by AICTE New Delhi, Affiliated to BPUT and SCTEVT Government of Odisha, Accredited by NAAC, Recognized by Department of Scientific & Industrial Research (DSIR), Govt. of India as SIRO, ISTE & IE Chapter and Student Chapter, Institutional Member of the IE & ISTE and Vigyan Prasara Network of Science Clubs, Recognized by IEEE. It provides conducive environment for learning with accessible teachers and engaged students who participate together in bringing out the best. Here students take advantage of opportunities as new field and bring up new innovations. The institute is well known for adopting the participative mechanism in both academic and non-academic activities. All the stakeholders of the institute have been participated in different activities and contribute their efforts for the wellbeing of the institute.

The institute is highly appreciated by local communities not only for the quality education but also for its socio-cultural activities. The institute is committed to its social responsibility, that's why the entire campus is blooming with lavish greenery. The institute have a well-structured NSS unit through which different social activities are conducted in nearby residential areas

The students are in continuous touch with the faculties through different online platforms. The institute organizes different seminars, FDPs through webinars which directly upgrading the teachers and students. Beyond geographical boundaries and age, the institute aims to provide an academically rich environment with diversified courses to its future students. The institute always encourage its faculty members to enhance their academic qualifications as a result the number of PhD degree holders are remarkably increase during last few years. Like teachers, students are also encouraged for doing the research and project works. To encourage the research activities, incentives are provided to both students and teachers who publish their papers in reputed journals.

### **Concluding Remarks :**

Raajdhani Engineering College (REC) with existence of more than 15 years has scaled rapid growth both in terms of quality and quantity. It provides quality education in both engineering and management streams. An ever-consistent student teacher ratio is maintained between the number of teachers and that of students. The institute has a well-structured mentoring mechanism which helps to build a personal relationship with both students and parents. A steadily disciplined but friendly liaison is maintained with students. The thrust in academic excellence and holistic growth of the students remain the basic focus of the institute. The institute promises to itself and to the all-round development of the students by offering quality education delivered through experimental and participative learning mechanism. It also creates opportunities for quality research work, real life projects, innovation and entrepreneurships. The research initiatives, industry-academia interface, extension and outreach programmes by the institute have promoted research culture and establishment of good rapport with the community and industries. Special care has taken to enhance the communication skills, the level of soft skills by internal faculties as well as invited external resource persons. Considering the need during recruitment and placement process, Students are encouraged to participate in different training sessions,

webinars and workshops, been organised in and outside of institutions. Students are being sent for internship in industries, which later become spring boards for the students to reach higher levels in training and knowledge and make them employable. Placements for the students have been very good and several of our alumni who have taken their rightful places in the society are directly contributing towards the development of nation. The IQAC cell of the institute never ceases an opportunity to enhance the quality of teaching learning process. . It continuously adopts best practices and does away with unproductive, obsolete practices.