# SELF STUDY REPORT

## FOR

## 1ˢᵗ CYCLE OF ACCREDITATION

## AGNEL CHARITIES FR. C. RODRIGUES INSTITUTE OF TECHNOLOGY

AGNEL TECHNICAL EDUCATION COMPLEX, SECTOR-9A, VASHI, NAVI MUMBAI
400703
www.fcrit.ac.in

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Submitted To

**NATIONAL ASSESSMENT AND ACCREDITATION COUNCIL**

**BANGALORE**

**December 2019**

# 1. EXECUTIVE SUMMARY

## 1.1 INTRODUCTION

Agnel Charities' Fr. Conceicao Rodrigues Institute of Technology (FCRIT) was established in the year 1994 as an extension of the pioneering efforts of the Agnel Ashram Fathers in the arena of Technical Education with the relentless pursuit of excellence as its guiding force. FCRIT is a Christian minority and self-financed Institute affiliated to the University of Mumbai and is centrally located in Vashi-Navi Mumbai, Maharashtra. FCRIT is approved by the AICTE, New Delhi. The campus is spread over on 6.8 acres of land and FCRIT offers following courses: (A) Undergraduate: BE in (i) Computer, (ii) Mechanical, (iii) Electronics & Telecommunication, (iv) Electrical and (v) IT; (B) Post-graduate: ME in (i) Machine Design, (ii) Power Electronics & Drives, and (iii) Electronics & Telecommunication; and (C) Doctoral programs: Ph.D. in (i) Mechanical, (ii) Electrical Engineering, and (iii) Electronics & Telecommunication.

Within a short span of time FCRIT has established itself as a leading engineering college in Mumbai University. Though its reputation rests mainly on the high quality, value-based technical education that it imparts, it has to its credit a verdant, well-maintained campus and extensive facilities. Its location in the vicinity of the holy places of various religious denominations underscores its secular credentials and its philosophy of "Vasudhaiva Kuttumbakam".

FCRIT is committed to attaining excellence in imparting quality technical education in conformation with current and future needs of industry. It produces globally competent Engineers imbibed with social & ethical values. FCRIT helps fresh entrants to develop into not only a well-rounded but also well-grounded citizens by providing them with a holistic environment.

Highly motivated, enthusiastic, experienced and qualified from reputed Institutes, and dedicated faculty is the backbone of FCRIT. Teachers have received grants for research and modernization of laboratories from Royal Academy of Engineering (UK), Board of Research in Nuclear Sciences (BRNS), AICTE, Mumbai University, etc. The Government of Maharashtra awarded FCRIT an 'A' grade in its first assessment. All the Departments of the Institute has successfully completed the process of NBA Accreditation & Reaccreditation. Our institute has been ranked among top 200 engineering colleges in the MHRD approved National Institute Ranking Framework (NIRF) in the year 2017.

**Vision**

To evolve and flourish as a progressive centre for modern technical education, stirring creativity in every student leading to self-sustainable professionals, through holistic development; nurtured by strength and legitimate pride of Indian values and ethics.

**Mission**

1. To provide industry oriented quality education.

**2. To provide holistic environment for overall personal development.**

**3. To foster relationship with other institute of repute, alumni and industry.**

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

**Institutional Strength**

**Management:**

- **Committed towards building future citizens who are infused with a strong sense of professionalism and ethical values.**
- **Adequate allocation of budget for smooth functioning of academic and administrative activities at Institute level.**
- **Transparent and de-centralized administration.**

**Faculty & Staff Members:**

- **Qualified (Doctorates (19.56%), pursuing PhD (20%), dedicated, sincere, enthusiastic, experienced and dynamic teaching and non-teaching staff.**
- **Well planned pedagogy for effective teaching-learning processes.**
- **Effective execution of lecture plan and academic calendar.**
- **Effective enforcement of discipline and rules.**
- **Skill and knowledge upgradation on regular basis for teaching staff.**
- **Very good retention of faculty members.**
- **Good student-to-faculty ratio.**
- **Faculty representation in BoS and participation for Curriculum Design, Development & implementation under Mumbai University.**
- **Good number of faculty research publications in reputed International journals & Conferences.**
- **Rendering consultancy services for enhancing industry-institute interaction and revenue.**
- **More than 67% of faculty are women.**

**Students and Alumni:**

- **Advanced learners have demonstrated potential through quality projects, winning competitions at various levels, and clearing various competitive examinations for higher education and professional career.**
- **Effective student counselling.**
- **Student's project quality is good resulting in quality publications.**
- **Excellent results, remarkable placement, and good enrolment for higher studies.**
- **Alumni spread across the globe with considerable number of them are now entrepreneurs.**
- **Alumni doing very well in their professional career and many among them are now occupying good positions.**

**Curriculum & Infrastructure:**

- **Periodic review and revision of curriculum at University level in accordance with industrial**

**needs.**

- **Well-established examination and evaluation processes for both In-Semester Examination (ISE) & End-Semester Examination (ESE).**
- **Adequate and well-equipped labs with good ambience.**
- **Dedicated and well equipped Research and Project labs.**
- **Adequate Campus amenities and Wi-Fi along with ICT Facilities.**
- **Good library facility with adequate volumes and titles along with journals.**
- **Sports facilities matching National/International standards.**
- **Good residential facilities for boys, girls, and staff.**

**Stake Holders:**

- **Well satisfied stake-holders (parents, alumni, industry, and students).**
- **Regular interaction with stakeholders during 'Department Advisory Board', 'Industry Advisory Board', etc.**
- **Regular interaction with parents during 'Parent-Teacher Interaction' meets.**

**Institutional Weakness**

**Faculty & Staff Members:**

- **More faculty members need to pursue Ph.D.**
- **Need to focus on core externally funded research projects.**
- **Limited industry linkage.**

**Students & Alumni:**

- **Need to increase quality placements.**
- **Enhance awareness among the students so that many of them can select option of becoming entrepreneur.**
- **Need to increase alumni interaction and strengthen alumni association.**
- **Enhance social interaction and outreach activities.**

**Curriculum:**

- **As the institute is affiliated to the University of Mumbai we need to follow University approved curriculum hence no flexibility in offering courses to the students.**

**Institutional Opportunity**

- **To obtain an autonomous status for the Institute to overcome above weaknesses.**
- **Scope for improvement in teacher's qualification upgradation to PhD, basic infrastructure for quality research work and externally sponsored research projects, & consultancies.**
- **To enter in to more MoU's for increasing industry-institute interaction.**
- **To improve alumni support in academic and research activities.**
- **To improve support system for competitive examination.**

- **Improvement in quality placement.**

**Institutional Challenge**

- **Attracting good students in an era of mushrooming of Engineering colleges is a challenge and we have to work doubly hard to keep up to the standard of excellence!**
- **Managing academic and research activities within a limited financial resources is a challenge.**
- **University Affiliated institute, Rigidity of academic structure and curriculum.**

# 1.3 CRITERIA WISE SUMMARY

**Curricular Aspects**

Agnel Charities' Fr. C. Rodrigues Institute of Technology (FCRIT) is affiliated to the University of Mumbai and it follows the curriculum prescribed by it. The curriculum is revised by the University after every four years. From the academic year 2016-17 the University has implemented Choice based Credit and Grading System (CBCGS) which makes optional courses at department and institute level available to the students. Many senior faculty members of FCRIT are involved in design and development of curriculum either as Chairman Board of Studies (BoS) or as Member BoS or as invitee. The University ensures that the curriculum developed is appropriate, is need-based, and suits the professional requirements of industries by inducting subject-experts and various stakeholders in the BoS.

The institute has well-defined process to plan and execute activities for effective implementation of the curriculum delivery. Since academic year 2014-15 the Institute has been implementing Outcome Based Education (OBE). Course Outcomes (CO), Program Outcomes (PO), and Program Specific Outcomes (PSO) are defined and their attainments are calculated.

The curriculum is supplemented through value addition, enrichment, and skill development courses which are conducted by internal or external faculty and it helps in enhancing employability of students. The Institute promotes effective industry-institute interaction through various workshops, expert talks, internships, online courses and academic projects. To assess and improve the academic requirement of students, feedback is collected from various stakeholders like students, alumni, employer, teachers and parents and accordingly corrective measures are taken.

**Teaching-learning and Evaluation**

The sanctioned intake for the first year of UG and PG courses at FCRIT is 360 and 54, respectively. Eighty percent of the sanctioned intake are admitted through Centralized Admission Process (CAP) of Admission Regulating Authority constituted by the Directorate of Technical Education (DTE), Maharashtra, and remaining 20% are admitted through Institute level quota. Being a Minority Institute, 51% seats are reserved for Christian community in the CAP. Remaining 29% CAP seats are for open category and 70% of open category seats are reserved for students belonging to 'Home University' while remaining 30% are for 'Other than Home University'. FCRIT is eligible for admission of additional seats under various government schemes including: Prime Minister's Scholarship Scheme (PMSS), Government of India Quota, and Tuition Fee Waiver Scheme (TFWS) for economically weaker section.

This admission process results in formation of classes consisting of students from different backgrounds and abilities. Based on performance in academics, etc. the advanced and slow learners are identified for further action.

Academic calendar is prepared at the institute and department level before commencement of the semester. For calculation of CO attainment levels, weightage for in-semester and end-semester evaluation is 60% and 40%, respectively.

For effective learning by students', teachers adapt various innovative teaching-learning methodologies. Teachers are encouraged to use ICT tools including smart-board, LCD projector, Moodle, etc. Emphasis is given to target all the levels of Bloom's taxonomy while teaching and evaluating the students. Average passing percentage of final year students is 98.97%. More than 85% of the students graduate from the program in a stipulated period of program duration. Every student is assigned one mentor. In addition, a professional counselor is available in the Institute for any personal help.

FCRIT has healthy student-to-staff ratio of 16.4 and staff retention is very good. Total staff strength is 93 and 19.56% of them are Ph.D. qualified. Average teaching experience of staff is 15.65 years and 20% of staff are recipient of award or had received recognition at national/international level. Around 36% teachers had graduated from outside Maharashtra.

Research, Innovations and Extension

FCRIT has number of policies in existence for enhancing activities related to "Research", "Innovation", and "Extension". Since inception of the Institute the policy for sponsoring teachers for qualification upgradation (M.E./M.Tech. and Ph.D.) is existing and it has helped the Institute in creating conducive environment for research and innovation culture among teachers and students.

All the Departments have an independent 'Research' laboratory. Every year, in addition to regular budget for laboratory upgradation across all the Departments for around Rs. 75.0 lacs, there is a separate budget provision for Rs. 12.0 lacs to encourage research activities. Teachers are encouraged to apply for various major/minor research grants to various agencies and to carry out consultancy work as per their commitment in their individual 5-year road-map. Teachers are given due recognition for their achievements by felicitating them and providing incentives as per policy guidelines. Recently, the Institute has started giving financial assistance for patent filing by faculty.

To inculcate research and innovation among students they are encouraged to actively participate in national and international level project, technical-paper presentations competitions, internships, etc. Their achievements are recognized by giving award for the best project, by giving partial financial support for participating in competitions, etc. FCRIT has a separate Incubation centre, named as Centre for Incubation and Business Acceleration (CIBA). It is supported by the Department of Science & Technology under the Startup India Action Plan.

Our trust "Agnel Charities" is well recognized in the Society for its 'Extension' services to serve the underprivileged. Fr. Agnel Balbhawan located in Vashi campus is a home for around one hundred poor and destitute children. FCRIT carries forward extension services through various students' forums including Agnel Social Cell (ASC) and Sustainable Ethical Environmental Development (SEED) council, etc. The ASC is an initiative to provide a platform for students to help others and to bring about a

positive change in the society. Since its inception, the cell has carried out activities for orphans, under privileged children, senior citizens, the mentally challenged, the physically challenged, and others. From SH-2019 an approved NSS center and Unnat Bharat Abhiyan platforms are operational .

## Infrastructure and Learning Resources

Availability of well-equipped, adequately budgeted, and well maintained physical, ICT, and other support infrastructure is a must for the overall development of staff and students.

The academic and administrative activities of FCRIT are conducted in Main building (Carpet area: 4565.8 sq. m.) and in Annex building (Carpet area: 10043.55 sq. m.). Classrooms are equipped with internet, LCD projectors, Laptops or PC, Smart Board, etc. The Institute has fifty Laboratories with internet connectivity. Total 658 PCs are available for the students. All faculty cabins are equipped with PC and internet connection.

The Central library is having carpet area of 775.26 sq. m. Average annual expenditure for purchase of books and journals during the last five years is Rs. 15.28 lacs. Library has centralized AC and is fully automated through KOHA Library management system.

Agnel Charities' trust has established shared facilities for sports and cultural events with overall area of 42,199 sq. m. for outdoor sports and 2400 sq. m. for indoor sports. An open space of 537.8 sq. m. is available in the campus for conducting cultural activities.

Server room is upgraded in 2017 with latest High configuration servers. All PCs in the campus are connected to the central server. O365 Mail-services are used by Faculty and students for communication. Security policies were enhanced through software-based PF-Sense firewall in 2014, which includes Web Filtering, Anti-Spam, and Content Filtering.

In addition to this, other facilities like common rooms, hostel, health care center, etc. are available on the campus.

There are well established systems and procedures with adequate budget provision for maintaining and utilizing physical, academic and support facilities.

## Student Support and Progression

It is Vision of FCRIT that various activities conducted under 'Support System' should help students for their 'Holistic Development' and to become 'Self-sustainable Professionals'. Emphasis is given for experiential learning by students while conducting capability enhancement, vocational education training, and development activities.

Bright students and economically weak students are encouraged to apply for various government and non-government scholarships and free-ships. Every year on an average 223 students are benefited under various schemes. All the students are encouraged to work after college hours and they are provided the required support for the same.

Institute and Department level activity calendar includes slots for conducting various support activities. Under the umbrella of professional society student chapters and Students' Council, various co-curricular and extra-curricular activities are conducted under the guidance of teacher in-charge. On an average 32 number of sports and cultural activities/competitions are organized at the institution level per year by the student council.

Grievance cell, anti-ragging committee, etc. are established consisting of students' representative and faculty members. Display boards regarding 'ragging' are displayed throughout the campus.

On an average every year 65% of students are benefited by guidance for competetive examinations & career councelling. In the past five years seven students received awards/medals for outstanding performance in sports/cultural activities at national / international level. Every year around 61% of the students are placed through campus placement.

FCRIT Alumni Association (FRAMES) was established in 2008 and is registered under society registration act 1860. Every year Alumni Meet is conducted. FRAMES financially support in sponsoring prizes worth Rs. 40000.0 during Biennial International Conference on Nascent Technologies in Engineering (ICNTE) organized by our Institute. Till now FCRIT has received in-kind support worth Rs. 5.6 lacs from alumni in terms of guest lecture, project evaluation, etc. In general, feedback from the employer about our alumni is very much encouraging.


Governance, Leadership and Management

FCRIT has transparent, dynamic, proactive, de-centralized, all-inclusive, top-down and bottom-up policy making process, and supportive governance system. The Governing Council of the Institute guides in achieving the Vision and Mission of the Institute and it has the ultimate authority in approving proposed policies.

The Managing Director and the Principal play key leadership roles at Institute level and they represent College Development Committee (CDC) as well. Planning and execution of policy decisions at Department level is mainly responsibility of Head of the Department. Deans, controller of examination, placement in-charge, and office administrative staff play important role in planning and execution of polices relevant to them. All the teachers are involved in managing various activities at Institute and Department level. Internal Quality Assurance Cell (IQAC) (earlier named as Institute Quality Assurance Committee) play critical role in further enhancing quality aspects in academics and administration.

As a part of 'Perspective Strategy Development and Deployment' process, roadmaps are prepared and executed at Institute/Department/individual teachers level. Grievance redressal mechanism and other committees are available in the Institute as per the norms.

Commercial/in-house software systems are available for effective e-governance in various areas. Various welfare measures including: (a) children education in Agnel Charities run school or college at concessional tuition fees, (b) gratuity, PF, group insurance, (c) incentive mechanism, (d) sponsorship for higher studies, (e) limited quarters at subsidized rates, etc., for teaching and non-teaching staff are available in the Institute. Institute follows performance appraisal system for staff which is same as 'Academic Performance Indicator (API)' by UGC.

Our trust is known for transparent and clean financial process and system. There are well established processes right from sanction of budget to expenditure.

**Institutional Values and Best Practices**

Every year on regular basis FCRIT conducts various programs and activities on pressing issues such as environmental consciousness and sustainability, inclusiveness and professional ethics, employability, etc. which creates awareness among students thus helping them to cope with the demands of the rapidly changing workplace.

In our campus around 15% of the annual power requirement is met by solar energy. In the 'Annex' building rain-water harvesting system is available. There are four operational plants for processing waste water and cleaned water is used for gardening. Under the umbrella of 'Agnel Social Cell' (ASC), 'Sustainable Environmental Ethical Development (SEED)' council, etc. various social awareness programs themed on the burning national issues are conducted and in the year 2018-19 around 225 kg of e-waste was collected and handed over to the company Eco-Rox for re-cycling purpose.

At FCRIT both the genders enjoy equal freedom to express their thoughts and exercise their rights. Around 67% of the total faculty members are female. Admissions are controlled by DTE and only 1-seat is allocated for physically challenged student. The college infrastructure provides lifts and ramps at appropriate locations in all buildings, extra time and writer is given to such students during examinations as per the University norms.

FCRIT follows many best practices which are evolved internally leading to improvements in functioning of academic, administrative or organizational aspects. Some of the examples of the best practices include 'Institutional support for qualification enhancement and skill upgradation', 'Integration of IT based Solution for Continuous Evaluation of Students', '', '', etc.

# 2. PROFILE

## 2.1 BASIC INFORMATION

| Name and Address of the College | |
|---|---|
| Name | AGNEL CHARITIES FR. C. RODRIGUES INSTITUTE OF TECHNOLOGY |
| Address | Agnel Technical Education Complex, Sector-9A, Vashi, Navi Mumbai |
| City | Navi Mumbai |
| State | Maharashtra |
| Pin | 400703 |
| Website | www.fcrit.ac.in |

| Contacts for Communication | | | | | |
|---|---|---|---|---|---|
| Designation | Name | Telephone with STD Code | Mobile | Fax | Email |
| Principal | S.M.Khot | 022-27771000 | 8108504063 | - | principal@fcrit.ac.in |
| Professor | Milind Shah | 022-27662949 | 9869109792 | 022-27660619 | milind.shah@fcrit.ac.in |

| 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 minroity institution | Yes<br>Minority letter.pdf |
| If Yes, Specify minority status | |
| Religious | Christian Minority |
| Linguistic | |
| Any Other | |

| **Establishment Details** | |
|---|---|
| Date of establishment of the college | 01-01-1994 |

| **University to which the college is affiliated/ or which governs the college (if it is a constituent college)** | | |
|---|---|---|
| **State** | **University name** | **Document** |
| Maharashtra | University of Mumbai | View Document |

| **Details of UGC recognition** | | |
|---|---|---|
| **Under Section** | **Date** | **View Document** |
| 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 | View Document | 01-07-2019 | 12 | |

| **Details of autonomy** | |
|---|---|
| Does the affiliating university Act provide for conferment of autonomy (as recognized by the UGC), on its affiliated colleges? | No |

| 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 |

| Location and Area of Campus | | | | |
| --- | --- | --- | --- | --- |
| Campus Type | Address | Location* | Campus Area in Acres | Built up Area in sq.mts. |
| Main campus area | Agnel Technical Education Complex, Sector-9A, Vashi, Navi Mumbai | Urban | 6.84 | 26010.86 |

# 2.2 ACADEMIC INFORMATION

| Details of Programmes Offered by the College (Give Data for Current Academic year) | | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| Programme Level | Name of Programme/Course | Duration in Months | Entry Qualification | Medium of Instruction | Sanctioned Strength | No.of Students Admitted |
| UG | BE,Computer Engineering | 48 | HSC CET JEE | English | 60 | 60 |
| UG | BE,Mechanical Engineering | 48 | HSC CET JEE | English | 120 | 118 |
| UG | BE,Electronics And Telecommunication Engineering | 48 | HSC CET JEE | English | 60 | 57 |
| UG | BE,Information Technology | 48 | HSC CET JEE | English | 60 | 60 |
| UG | BE,Electrical Engineering | 48 | HSC CET JEE | English | 60 | 54 |
| PG | ME,Mechanical | 24 | BE BTech GATE | English | 18 | 4 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Engineering | | | | | |
| PG | ME,Electronics And Telecommunication Engineering | 24 | BE BTech GATE | English | 18 | 1 |
| PG | ME,Electrical Engineering | 24 | BE BTech GATE | English | 18 | 2 |
| Doctoral (Ph.D) | PhD or DPhil,Mechanical Engineering | 60 | ME MTech PET | English | 16 | 3 |
| Doctoral (Ph.D) | PhD or DPhil,Electronics And Telecommunication Engineering | 60 | ME MTech PET | English | 12 | 3 |
| Doctoral (Ph.D) | PhD or DPhil,Electrical Engineering | 60 | ME MTech PET | English | 4 | 2 |

## Position Details of Faculty & Staff in the College

| | Teaching Faculty | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Professor** | | | | **Associate Professor** | | | | **Assistant Professor** | | | |
| | Male | Female | Others | Total | Male | Female | Others | Total | Male | Female | Others | Total |
| Sanctioned by the UGC /University State Government | | | | 8 | | | | 13 | | | | 56 |
| Recruited | 6 | 2 | 0 | 8 | 3 | 7 | 0 | 10 | 6 | 50 | 0 | 56 |
| Yet to Recruit | | | | 0 | | | | 3 | | | | 0 |
| Sanctioned by the Management/Society or Other Authorized Bodies | | | | 0 | | | | 0 | | | | 18 |
| Recruited | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 10 | 0 | 18 |
| Yet to Recruit | | | | 0 | | | | 0 | | | | 0 |

| Non-Teaching Staff | | | | |
|---|---|---|---|---|
| | **Male** | **Female** | **Others** | **Total** |
| Sanctioned by the UGC /University State Government | | | | 31 |
| Recruited | 18 | 13 | 0 | 31 |
| Yet to Recruit | | | | 0 |
| Sanctioned by the Management/Society or Other Authorized Bodies | | | | 0 |
| Recruited | 0 | 0 | 0 | 0 |
| Yet to Recruit | | | | 0 |

| Technical Staff | | | | |
|---|---|---|---|---|
| | **Male** | **Female** | **Others** | **Total** |
| Sanctioned by the UGC /University State Government | | | | 32 |
| Recruited | 30 | 2 | 0 | 32 |
| Yet to Recruit | | | | 0 |
| Sanctioned by the Management/Society or Other Authorized Bodies | | | | 0 |
| Recruited | 0 | 0 | 0 | 0 |
| Yet to Recruit | | | | 0 |

**Qualification Details of the Teaching Staff**

| Permanent Teachers | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Highest Qualification | Professor | | | Associate Professor | | | Assistant Professor | | |
| | Male | Female | Others | Male | Female | Others | Male | Female | Others | Total |
| D.sc/D.Litt. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ph.D. | 4 | 2 | 0 | 2 | 1 | 0 | 1 | 7 | 0 | 17 |
| M.Phil. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PG | 0 | 0 | 0 | 1 | 6 | 0 | 9 | 51 | 0 | 67 |

| Temporary Teachers | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Highest Qualification | Professor | | | Associate Professor | | | Assistant Professor | | |
| | Male | Female | Others | Male | Female | Others | Male | Female | Others | Total |
| D.sc/D.Litt. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ph.D. | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| M.Phil. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PG | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 2 | 0 | 6 |

| Part Time Teachers | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Highest Qualification | Professor | | | Associate Professor | | | Assistant Professor | | |
| | Male | Female | Others | Male | Female | Others | Male | Female | Others | Total |
| D.sc/D.Litt. | 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 | 1 | 0 | 1 |

| Details of Visting/Guest Faculties | | | | |
|---|---|---|---|---|
| **Number of Visiting/Guest Faculty engaged with the college?** | **Male** | **Female** | **Others** | **Total** |
| | 4 | 0 | 0 | 4 |

**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 |
|---|---|---|---|---|---|---|
| Doctoral (Ph.D) | Male | 14 | 0 | 0 | 0 | 14 |
| | Female | 16 | 0 | 0 | 0 | 16 |
| | Others | 0 | 0 | 0 | 0 | 0 |
| UG | Male | 1045 | 25 | 0 | 0 | 1070 |
| | Female | 361 | 9 | 0 | 0 | 370 |
| | Others | 0 | 0 | 0 | 0 | 0 |
| PG | Male | 19 | 0 | 0 | 0 | 19 |
| | Female | 3 | 1 | 0 | 0 | 4 |
| | Others | 0 | 0 | 0 | 0 | 0 |

**Provide the Following Details of Students admitted to the College During the last four Academic Years**

| Programme | | Year 1 | Year 2 | Year 3 | Year 4 |
|---|---|---|---|---|---|
| SC | Male | 6 | 4 | 0 | 1 |
| | Female | 1 | 2 | 3 | 2 |
| | Others | 0 | 0 | 0 | 0 |
| ST | Male | 0 | 0 | 0 | 1 |
| | Female | 0 | 0 | 0 | 0 |
| | Others | 0 | 0 | 0 | 0 |
| OBC | Male | 20 | 7 | 9 | 10 |
| | Female | 3 | 7 | 9 | 2 |
| | Others | 0 | 0 | 0 | 0 |
| General | Male | 267 | 265 | 259 | 254 |
| | Female | 81 | 74 | 92 | 114 |
| | Others | 0 | 0 | 0 | 0 |
| Others | Male | 0 | 0 | 0 | 0 |
| | Female | 0 | 0 | 0 | 0 |
| | Others | 0 | 0 | 0 | 0 |
| Total | | 378 | 359 | 372 | 384 |

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# 3. Extended Profile

## 3.1 Program

**Number of courses offered by the institution across all programs during the last five years**

**Response: 344**

| File Description | Document |
|---|---|
| Institutional Data in Prescribed Format | [View Document] |

**Number of programs offered year-wise for last five years**

| 2018-19 | 2017-18 | 2016-17 | 2015-16 | 2014-15 |
|---|---|---|---|---|
| 11 | 11 | 11 | 11 | 11 |

## 3.2 Students

**Number of students year-wise during the last five years**

| 2018-19 | 2017-18 | 2016-17 | 2015-16 | 2014-15 |
|---|---|---|---|---|
| 1522 | 1514 | 1537 | 1540 | 1569 |

| File Description | Document |
|---|---|
| Institutional Data in Prescribed Format | [View Document] |

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

| 2018-19 | 2017-18 | 2016-17 | 2015-16 | 2014-15 |
|---|---|---|---|---|
| 1 | 1 | 1 | 1 | 1 |

| File Description | Document |
|---|---|
| Institutional data in prescribed format | [View Document] |

**Number of outgoing / final year students year-wise during the last five years**

| 2018-19 | 2017-18 | 2016-17 | 2015-16 | 2014-15 |
|---|---|---|---|---|
| 386 | 372 | 366 | 372 | 342 |

| File Description | Document |
|---|---|
| Institutional Data in Prescribed Format | View Document |

## 3.3 Teachers

**Number of full time teachers year-wise during the last five years**

| 2018-19 | 2017-18 | 2016-17 | 2015-16 | 2014-15 |
|---|---|---|---|---|
| 93 | 94 | 92 | 100 | 101 |

| File Description | Document |
|---|---|
| Institutional Data in Prescribed Format | View Document |

**Number of sanctioned posts year-wise during the last five years**

| 2018-19 | 2017-18 | 2016-17 | 2015-16 | 2014-15 |
|---|---|---|---|---|
| 95 | 95 | 95 | 99 | 99 |

| File Description | Document |
|---|---|
| Institutional data in prescribed format | View Document |

## 3.4 Institution

**Total number of classrooms and seminar halls**

**Response: 24**

**Total Expenditure excluding salary year-wise during the last five years ( INR in Lakhs)**

| 2018-19 | 2017-18 | 2016-17 | 2015-16 | 2014-15 |
|---|---|---|---|---|
| 416.49 | 548.78 | 323.17 | 393.46 | 369.66 |

**Number of computers**

**Response: 658**

14-01-2020 11:46:55

# 4. Quality Indicator Framework(QIF)

## Criterion 1 - Curricular Aspects

### 1.1 Curricular Planning and Implementation

**1.1.1 The institution ensures effective curriculum delivery through a well planned and documented process**

**Response:**

Fr. C. Rodrigues Institute of Technology, Vashi is affiliated to the University of Mumbai and approved by AICTE. It has 5-UG, 3-PG, and 3-Research programs in engineering.

The institute meticulously plans and develops action plans for effective implementation of the curriculum prescribed by the university.

Various stages of effective curriculum delivery are as follows:

**1. Planning:**

**Stage-1: Course allocation**

- Course allotment is done at the end of every semester for the next semester primarily based on faculty's choice and their domain areas, at times based on the requirements of the department.

**Stage-2: Academic Calendar**

- Institute Academic calendar is prepared listing all the institute pertinent activities in alignment with University issued calendar. The departments prepare the academic calendar in adherence to the institute calendar.

**Stage-3: Teaching and Course Outcome Assessment Plan**

- A teaching plan is prepared before the commencement of the semester and measures are taken to bridge the identified gaps in the curriculum.
- The institute adopted the "**Outcome Based Education (OBE)**" model from the academic year 2014-2015. As part of the OBE model, faculty maintain a course file with a teaching and laboratory plan in adherence to the academic calendar. Students are evaluated periodically with reference to outcome attainment and related reports are part of the course file. The Course file also contains lecture notes, a question bank, performance details of the students, etc.

**2. Execution:**

**Stage-1: Teaching**

- In addition to conventional teaching methods, the majority of faculty members adopt innovative teaching techniques to get the students actively involved in the learning process. Faculty strictly

adhere to the teaching plan and any deviation in the plan is recorded.

**Stage-2: Evaluation of students**

- All internal examinations schedule is part of the academic calendar and is conducted according to the plan. Course co-ordinator sets the question paper based on the institute guidelines and submits to the Department Working Committee (DWC), in order to assure the quality of the question paper.
- The Faculty completes assessment within 10 days from the day of examination.
- Weak students are identified based on their academic performance in each course and remedial measures are taken.

**3. Monitoring of Curriculum delivery and students performance :**

**Stage-1: Teaching**

- The Head of the Departments periodically reviews the execution of the teaching plan and monitors the syllabus completion through formal and informal feedback.

**Stage-2: Attendance and Academics**

- The departments continuously monitor the Attendance and Academic progress of all the students. Special cases are dealt with Attendance Monitoring Committee at the Institute level every month.
- Academic Performance Monitoring System is used for effective and continuous monitoring of attendance and academic progress of students.

**Stage-3: Mentoring**

- Mentoring is in place at the department level to monitor students' academic and any other related issues. A Professional Counselor is accessible at the institute to heed the special cases.

**4. Audit:**

An Academic audit is conducted every semester by Department Quality Assurance Cell (DQAC) and every year by Internal Quality Assurance Cell (IQAC), to ensure effective implementation of curriculum and documentation.

| File Description | Document |
|---|---|
| Any additional information | [View Document](#) |

**1.1.2 Number of certificate/diploma program introduced during the last five years**

**Response:** 5

1.1.2.1 **Number of certificate/diploma programs  introduced  year-wise during the last five years**

| 2018-19 | 2017-18 | 2016-17 | 2015-16 | 2014-15 |
|---------|---------|---------|---------|---------|
| 1 | 2 | 1 | 1 | 0 |

| File Description | Document |
|------------------|----------|
| Minutes of relevant Academic Council/BOS meetings | View Document |
| Details of the certificate/Diploma programs | View Document |

**1.1.3 Percentage of participation of full time teachers in various bodies of the Universities/ Autonomous Colleges/ Other Colleges, such as BoS and Academic Council during the last five years**

**Response:** 11.46

1.1.3.1 Number of teachers participating in various bodies of the Institution, such as BoS and Academic Council year-wise during the last five years

| 2018-19 | 2017-18 | 2016-17 | 2015-16 | 2014-15 |
|---------|---------|---------|---------|---------|
| 2 | 3 | 2 | 2 | 2 |

| File Description | Document |
|------------------|----------|
| Details of participation of teachers in various bodies | View Document |
| Any additional information | View Document |

## 1.2 Academic Flexibility

**1.2.1 Percentage of new Courses introduced out of the total number of courses across all Programs offered during last five years**

**Response:** 31.4

1.2.1.1 How many new courses are introduced within the last five years

Response: 108

| File Description | Document |
|------------------|----------|
| Minutes of relevant Academic Council/BOS meetings. | View Document |
| Details of the new courses introduced | View Document |

**1.2.2 Percentage of programs in which Choice Based Credit System (CBCS)/Elective course system has been implemented**

**Response:** 100

1.2.2.1 Number of programmes in which CBCS/ Elective course system implemented.

Response: 11

| File Description | Document |
|---|---|
| Name of the programs in which CBCS is implemented | View Document |
| Minutes of relevant Academic Council/BOS meetings. | View Document |

**1.2.3 Average percentage of students enrolled in subject related Certificate/ Diploma programs/Add-on programs as against the total number of students during the last five years**

**Response:** 1.91

1.2.3.1 Number of students enrolled in subject related Certificate or Diploma or Add-on programs year-wise during the last five years

| 2018-19 | 2017-18 | 2016-17 | 2015-16 | 2014-15 |
|---|---|---|---|---|
| 28 | 58 | 20 | 40 | 0 |

| File Description | Document |
|---|---|
| Details of the students enrolled in Subjects related to certificate/Diploma/Add-on programs | View Document |
| Any additional information | View Document |

## 1.3 Curriculum Enrichment

**1.3.1 Institution integrates cross- cutting issues relevant to Gender, Environment and Sustainability, Human Values and Professional Ethics into the Curriculum**

**Response:**

Apart from the curriculum content, Institute plays a major role in integrating the cross-cutting issues relevant to Gender, Environment and Sustainability, Human Values and Professional Ethics by conducting various activities as follows:

**Gender:**

- The student intake clearly exhibits the fact that there is no demarcation on gender.
- Institute encourages and supports all the students irrespective of the gender to participate in various activities conducted at the institute level. Few activities are lead by girl students.
- Also, the active participation of girl students in various extra and co-curricular activities at both the national and international levels sensitizes gender equality.

**Environment and Sustainability:**

- Various courses such as Environmental Studies, Power Plant Engineering, Renewable Energy, Disaster Management & Mitigation Measures, Energy Audit and Management, Environmental Management, etc., in the curriculum, give awareness about environment and sustainability.
- All the departments conduct various activities such as expert lectures, seminars, and workshops to give a broader sense of responsibility towards the environment and sustainability.
- Institute has established the **Sustainable Environmental and Ethical Development (SEED) committee** which conducts awareness programs for environment and sustainability such as e-Waste Collection drive.
- Cleanliness activity and Tree Plantation drive conducted under Electrical Engineering Students Association (EESA).
- Agnel Social Cell (ASC) is a body initiated by students who conduct awareness programs on the environment and health for the betterment of society. National Service Scheme (NSS) center and Unnat Bharat Abhiyan are established at the Institute in the year 2019-2020.
- Institute contributes in its own way towards the environment and sustainability. Few to mention are the use of Solar energy harnessing in the campus, Rainwater harvesting, Sewage water treatment plant for reusing water for maintaining greenery, etc.

**Human Values and Professional Ethics:**

- Curriculum courses like Business Communication and Ethics, Professional Ethics and CSR, Cyber Security and Laws, Entrepreneurship Development and Management, IPR and Patenting impart knowledge on understanding and demonstrating professional and communication ethics in business.
- Students showcase inculcated professional ethics and values while undergoing project work and writing technical papers for publications.
- In addition to the above-said courses, the Institute believes that a positive attitude and discipline helps in shaping the career of future engineers. It strives to inculcate the professional ethics and values in students in line with the vision.
- To some extent, human values, punctuality, and discipline are inculcated among the students through assembly conduction which inherently includes thought for the day, news headlines and appreciations/achievements announcements ending with National Anthem. Around 90% of the students report in time to the assembly which helps in building a habit of being punctual.
- Faculty play a major role in providing a holistic approach for the overall personal development of students. They guide them as mentors not just limited to academics but also help them to tackle their personal problems, leading to a better learning atmosphere and to sustain their performance.

Various seminars are conducted by the departments to imbibe professional ethics in students.

| File Description | Document |
|---|---|
| Any Additional Information | [View Document](#) |

**1.3.2 Number of value added courses imparting transferable and life skills offered during the last five years**

**Response:** 7

1.3.2.1 Number of value-added courses imparting transferable and life skills offered during the last five years

Response: 7

| File Description | Document |
|---|---|
| Details of the value-added courses imparting transferable and life skills | [View Document](#) |
| Brochure or any other document relating to value added courses. | [View Document](#) |
| Any additional information | [View Document](#) |

**1.3.3 Percentage of students undertaking field projects / internships**

**Response:** 14.45

1.3.3.1 Number of students undertaking field projects or internships

Response: 220

| File Description | Document |
|---|---|
| List of students enrolled | [View Document](#) |
| Institutional data in prescribed format | [View Document](#) |
| Any additional information | [View Document](#) |

## 1.4 Feedback System

**1.4.1 Structured feedback received from 1) Students, 2)Teachers, 3)Employers, 4)Alumni and 5)Parents for design and review of syllabus-Semester wise/ year-wise**
**A.Any 4 of the above**

**B.Any 3 of the above**

**C. Any 2 of the above**

**D. Any 1 of the above**

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

| File Description | Document |
|---|---|
| Any additional information | [View Document](#) |
| Action taken report of the Institution on feedback report as stated in the minutes of the Governing Council, Syndicate, Board of Management | [View Document](#) |
| URL for stakeholder feedback report | [View Document](#) |

**1.4.2 Feedback processes of the institution may be classified as follows:**
**A. Feedback collected, analysed and action taken and feedback available on website**

**B. Feedback collected, analysed and action has been taken**

**C. Feedback collected and analysed**

**D. Feedback collected**

**Response:** A. Feedback collected, analysed and action taken and feedback available on website

| File Description | Document |
|---|---|
| Any additional information | [View Document](#) |
| URL for feedback report | [View Document](#) |

# Criterion 2 - Teaching-learning and Evaluation

## 2.1 Student Enrollment and Profile

**2.1.1 Average percentage of students from other States and Countries during the last five years**

**Response:** 1.93

2.1.1.1 Number of students from other states and countries year-wise during the last five years

| 2018-19 | 2017-18 | 2016-17 | 2015-16 | 2014-15 |
|---------|---------|---------|---------|---------|
| 31 | 29 | 31 | 31 | 26 |

| File Description | Document |
|------------------|----------|
| List of students (other states and countries) | [View Document](#) |
| Institutional data in prescribed format | [View Document](#) |
| Any additional information | [View Document](#) |

**2.1.2 Average Enrollment percentage (Average of last five years)**

**Response:** 90.21

2.1.2.1 Number of students admitted year-wise during the last five years

| 2018-19 | 2017-18 | 2016-17 | 2015-16 | 2014-15 |
|---------|---------|---------|---------|---------|
| 318 | 330 | 326 | 348 | 339 |

2.1.2.2 Number of sanctioned seats year-wise during the last five years

| 2018-19 | 2017-18 | 2016-17 | 2015-16 | 2014-15 |
|---------|---------|---------|---------|---------|
| 360 | 362 | 370 | 378 | 371 |

| File Description | Document |
|------------------|----------|
| Institutional data in prescribed format | [View Document](#) |
| Any additional information | [View Document](#) |

**2.1.3 Average percentage of seats filled against seats reserved for various categories as per applicable reservation policy during the last five years**

**Response:** 0

2.1.3.1 Number of actual students admitted from the reserved categories year-wise during the last five years

| 2018-19 | 2017-18 | 2016-17 | 2015-16 | 2014-15 |
|---------|---------|---------|---------|---------|
| 0       | 0       | 0       | 0       | 0       |

| File Description | Document |
|------------------|----------|
| Institutional data in prescribed format | [View Document](#) |

## 2.2 Catering to Student Diversity

**2.2.1 The institution assesses the learning levels of the students, after admission and organises special programs for advanced learners and slow learners**

**Response:**

*1. Special programmes for advanced learners*

Advanced learners are identified based on their academic performance and active involvement in co-curricular activities. Institute encourages advanced learners to participate in following activities.

- International and National level competitions (ROBOCON, HAKATHON, NSDC, SAE BAJA etc.)
- External projects at TIFR, IIT, BARC & Industries.
- Paper publication in National and International conferences.
- National and International Internship
- Scholarship from organizations like IEEE, IEI, Tata Foundation

Institute also motivates advanced learners by appreciating their achievements through felicitation and awards,

- Felicitating the rank holder's year wise, branch wise by Institute and External agencies (L&T and TCS)
- Best outgoing student award.
- Best project award by TCS.
- Announcement of all the achievements of students including external participation and award prizes during Morning Assembly.
- Publishing achievements of students in department and institute magazines.

## *2. Special programmes for slow learners*

Slow learners in a class are identified based on

* Performance in the Internal Assessment Test-1 and 2. The students who score less than 60% of marks are considered as slow learners.
* Previous semester's result. CGPI less than 6.75 are considered as a slow learner.
* Feedback of mentor and class-teachers are also taken into consideration for identification of slow learners.

In order to assist the slow learners, remedial classes are conducted.

The portion to be taught in remedial class is decided by the subject teacher. Teacher discuss very important portions for improving their understanding of subject concepts and solve university examination questions in the remedial class. The proper remedial class time table for all subjects in a semester is made and displayed on the notice board. The attendance of all such students are taken and recorded. The details of the remedial class sessions conducted are recorded in the course work file of the respective subject. The remedial class is found effective and it helps student in understanding and passing the end semester examination.

Around 20% students are availing schemes for advanced learners while as around 10% students are given additional coaching to improve their academic performance through remedial classes.

| File Description | Document |
|---|---|
| Any additional information | View Document |

## 2.2.2 Student - Full time teacher  ratio

**Response:** 16.37

| File Description | Document |
|---|---|
| Any additional information | View Document |

## 2.2.3 Percentage of differently abled students (Divyangjan) on rolls

**Response:** 0.33

2.2.3.1 Number of differently abled students on rolls

Response: 5

| File Description | Document |
|---|---|
| Institutional data in prescribed format | View Document |
| Any other document submitted by the Institution to a Government agency giving this information | View Document |

## 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**

**Response:**

**Outcome Based Education** (OBE), a student centric learning process is introduced during the academic year 2014-2015. In professional education the major focus is on knowledge, skill and attitude. Knowledge is mainly dealt through classroom teaching. Skill and attitude building are mainly targeted through conduction of laboratories, mini projects and major projects. In addition to these activities, various student forums such as CSI, IEEE, IEI, IETE, ISHRAE, SAE, ARC, AI & Deep Learning etc., play a major role in providing opportunities for students to enhance learning experience.

**Experiential Learning:**

- A lot of scope for experiential learning is provided through the revised curriculum, enhancing critical thinking and creative imagination among students.
- Various laboratory courses in the curriculum include mini/course projects. Students apply and experiment the theory concepts to develop these projects.
- Students carry out a thorough research on their area of interest that would help them to undergo a systematic approach in all the phases of developing the major project during final year.
- Few faculty develop a new experimental set-up in addition to the laboratory experiments creating interest in students to learn more.
- Apart from the curriculum content, students are given hands-on exposure through various activities at both department and institute level events.
- Students are encouraged to undertake internships that aid them to apply acquired knowledge to real work and gives an experience of working in a company environment. It helps them to master professional soft skills such as communication, time management and also boosts their self-confidence.
- Apart from the above mentioned practices, students take part in various events like Robocon, E-Yantra etc. that bring out the technical potential, promote leadership qualities and inculcate team work among the students.

**Participative Learning :**

- Students participate in various technical competitions such as Smart India Hackathon (SIH), AVISHKAR, HACKEARTH, NSDC, SAE BAJA etc. that help them to learn from the external environment.
- They take part in various Technical Paper Presentations (TPPs) and Paper Publications in reputed journals and conferences improving their technical writing and communication skills.

- Departments conduct seminars under professional society once in a semester, where eminent personalities from industry are invited to deliver talks on the latest emerging technologies.
- Students actively organize and participate in extra and co-curricular activities conducted at institute level.

- Flip Classroom methodology help in active participation of students in learning.

- Project poster presentations encourage students' creative thinking.

**Problem Solving Methodologies :**

Curriculum content of few courses of design domain deals with attempting solutions to specific problems.The process includes :

- Identifying the need
- Converting the need into a problem statement
- Identifying alternative solutions to the problem
- Selecting the final solution
- Building and testing the model
- Documentation

In addition to the design domain courses, the above mentioned process is followed in mini projects as well as major projects.

Students are encouraged to work on need based projects. Many need based projects are developed and deployed by students.

| File Description | Document |
|---|---|
| Any additional information | [View Document](#) |

**2.3.2 Percentage of teachers using ICT for effective teaching with Learning Management Systems (LMS), E-learning resources etc.**

**Response:** 100

2.3.2.1 Number of teachers using ICT

Response: 93

| File Description | Document |
|---|---|
| List of teachers (using ICT for teaching) | [View Document](#) |
| Any additional information | [View Document](#) |
| Provide link for webpage describing the " LMS/ Academic management system" | [View Document](#) |

**2.3.3 Ratio of students to mentor for academic and stress related issues**

**Response:** 20.57

2.3.3.1 Number of mentors

Response: 74

| File Description | Document |
| --- | --- |
| Any additional information | [View Document](#) |

**2.3.4 Innovation and creativity in teaching-learning**

**Response:**

Innovative pedagogy fosters the institute in its academic excellence. These practices should deal in coherence with the theoretical concepts to create interest in students towards learning. Institute encourages faculty to incorporate the modern teaching aids, technological equipment along with traditional teaching methods. In order to implement innovative practices in their teaching, faculty attend various Faculty development programs, workshops and short term training courses. They also register for e-learning courses like NPTEL, SWAYAM etc., for gaining knowledge in their domain area to bring out application oriented teaching.

Apart from regular lectures through chalk-and-talk, faculty utilize the smart classrooms and ICT enabled classrooms for delivering the course content to widen students' knowledge and grasp the ideas quickly.

In addition to the above mentioned facilities, the following innovative teaching practices are incorporated for advanced learning :

- **Learning Management System (LMS),** is in place at our institute where faculty deploy the course related documents, accessible online to students. The documents include the lecture notes, links to video lectures, assignments and quiz/MCQ tests.
- **Flip Classroom** is one of the innovative practices that is implemented for students to learn the topics in depth and apply the knowledge in solving the problems. It also helps in active participation of students in learning.
- **Video lectures** are used for demonstrating live or practical day-to-day examples involving enthusiastic participation of the students. These lectures help them in relating the examples to the theory concepts learnt from the course.
- Few courses comprise of **Mini/Course projects** as part of the curriculum. In order to carry out these projects, students use the subject knowledge and apply those concepts to develop the project resulting in an application. A demonstration of these projects at the end of the semester helps them to improve their communication skills.
- As part of **final year project**, regular interactions with the project guides and frequent assessments are scheduled that bring out the innovative instincts and inspires them to find a creative solution to complex problems. Project poster presentation is a platform provided for them to showcase their projects in a creative way.

- Students are assigned different tasks such as presentations, case studies and home assignments that inculcate **self-learning** capability.
- Innovative lab setups are implemented for few courses that involve active participation of students coming out with new and innovative ideas.
- Students are encouraged to conduct workshops and various other events during the fests that bring out managerial skills and creativity.
- Library e-resources in the form of books and journals are made available to students. They are encouraged to enrol for the e-learning course such as NPTEL.

In addition to the above mentioned practices, the following activities are in place to enhance teaching learning process :

Students are encouraged to get involved in industry sponsored projects, project competitions, internship programs, industrial visits etc. that lead to their improvement in communication, human relations, technical and management skills.

| File Description | Document |
|---|---|
| Any additional information | View Document |

## 2.4 Teacher Profile and Quality

### 2.4.1 Average percentage of full time teachers against sanctioned posts during the last five years

**Response:** 99.34

| File Description | Document |
|---|---|
| Year wise full time teachers and sanctioned posts for 5 years | View Document |
| List of the faculty members authenticated by the Head of HEI | View Document |

### 2.4.2 Average percentage of full time teachers with Ph.D. during the last five years

**Response:** 11.59

2.4.2.1 Number of full time teachers with Ph.D. year-wise during the last five years

| 2018-19 | 2017-18 | 2016-17 | 2015-16 | 2014-15 |
|---|---|---|---|---|
| 15 | 15 | 11 | 7 | 7 |

| File Description | Document |
|---|---|
| List of number of full time teachers with PhD and number of full time teachers for 5 years | [View Document](#) |
| Any additional information | [View Document](#) |

### 2.4.3 Teaching experience per full time teacher in number of years

**Response:** 15.48

2.4.3.1 Total experience of full-time teachers

Response: 1439.5

| File Description | Document |
|---|---|
| Any additional information | [View Document](#) |

### 2.4.4 Percentage of full time teachers who received awards, recognition, fellowships at State, National, International level from Government, recognised bodies during the last five years

**Response:** 19.79

2.4.4.1 Number of full time teachers receiving awards from state /national /international level from Government recognised bodies year-wise during the last five years

| 2018-19 | 2017-18 | 2016-17 | 2015-16 | 2014-15 |
|---|---|---|---|---|
| 4 | 4 | 6 | 2 | 3 |

| File Description | Document |
|---|---|
| Institutional data in prescribed format | [View Document](#) |
| e-copies of award letters (scanned or soft copy) | [View Document](#) |

### 2.4.5 Average percentage of full time teachers from other States against sanctioned posts during the last five years

**Response:** 35.63

2.4.5.1 Number of full time teachers from other states year-wise during the last five years

| 2018-19 | 2017-18 | 2016-17 | 2015-16 | 2014-15 |
|---|---|---|---|---|
| 33 | 34 | 37 | 33 | 35 |

| File Description | Document |
|---|---|
| List of full time teachers from other state and state from which qualifying degree was obtained | [View Document](#) |
| Any additional information | [View Document](#) |

## 2.5 Evaluation Process and Reforms

**2.5.1 Reforms in Continuous Internal Evaluation(CIE) system at the institutional level**

**Response:**

There has been many reforms in Continuous Internal Evaluation (CIE) system. The evaluation system has been changing based on university rules and changes in the Institute Policy. The notable reforms can be categorized into following models

- Model of CIE prior to academic year 2012-13
- Model of CIE between academic year 2012-13 to academic year 2014-15
- Model of CIE from academic year 2015-16

**Model of CIE prior to academic year 2012-13:**

Apart from mandatory university examination many other Continuous Internal Evaluations had been followed.Every week three Assignment Tests were conducted. All the course Assignment Tests were able to cover in two weeks. The tests were conducted during practical time wherein additional measures had been taken to avoid two test on one day. The Assignment Tests may cover major university theory questions, MCQ etc. In addition to this all lab assignments were conducted week wise and evaluated regularly. In few courses like project the progress seminars were conducted for evaluations. Preliminary examination was conducted at end of every semester based on university pattern.

**Model of CIE between academic year 2012-13 to academic year 2014-15:**

In the advent of introducing credit based system two Internal Assessment tests became mandatory apart from End Semester Examination from university side. In addition to these the following additional CIE were followed

- Two Assignment Tests during semester per theory course.
- Regular lab assignments every week during semester.
- Two progress seminars for project in a semester.
- Preliminary examination at the end of semester for all theory courses.

**Model of CIE from academic year 2015-16:**

The variety and frequency of CIE are maintained same as above CIE model and are reproduced as below;

- Two Internal Assessment Tests
- Two Assignment Tests during semester per theory course.
- Regular lab assignments every week during semester.
- Two progress seminars for project in a semester.
- Preliminary examination at the end of semester for all theory courses.

The major reforms during this model has been brought with reference to Outcome Based Education (OBE) model and quality of assessment. More emphasize has been provided on students evaluation with respect to course outcomes attainment.

The question paper audit has been started for improving quality of questions. Department wise committee has been formed which verifies whether questions set are based on course outcomes and level of blooms taxonomy.

For effective implementation of OBE model and monitoring students outcome attainment, Academic Performance Monitoring System(APMS) has been developed and deployed. The APMS system effectively assist in monitoring and evaluation of students centric learning outcomes.

| File Description | Document |
|---|---|
| Any additional information | [View Document](#) |

**2.5.2 Mechanism of internal assessment is transparent and robust in terms of frequency and variety**

**Response:**

**1. Transparency in *frequency and variety* of CIE**

- The frequency of Continuous Internal Evaluations are planned before beginning of every semester. Tentative schedule of CIE included in academic calendar is uploaded on website and made available to teachers and students.
- The various mandatory tools of CIE are listed as below;

| Tools | Frequency | Duration |
|---|---|---|
| Assignment tests | Twice in a semester | One week before every Internal Assessment test |
| Internal Assessment Tests | Twice in a semester | *1st IA*: 5th or 6th week from a start of a semester<br><br>*2nd IA*: 10th or 11th week from a start of semester |
| Practical | Weekly | As per Course outcome assessment Plan |
| Preliminary Examination | Once in a semester | At the end of semester |

- The various optional tools of CIE are listed below;

| Tools | Frequency | Duration |
|---|---|---|
| Assignments | Twice in a semester | As per Course outcome assessment Plan |

| MCQ | One or two times in a semester | As per Course outcome assessment Plan |
|---|---|---|
| MOCK Practicals | Once in a semester | Last week of a semester |
| Seminar/Presentations | One or two times in a semester | As per Course outcome assessment Plan |
| Mini Projects | Once in a semester | As per Course outcome assessment Plan |

- Institute strictly adhere to the continuous internal assessment plan proposed either in academic calendar or course assessment plan.

**2. Robustness in Conduction and Evaluation of CIE**

The conduction and assessment process is carried out in four stages;

- Question Paper Setting
- Conduction
- Assessment
- Result Declaration

*a. Question Paper Setting.*

- Question papers are set as per course outcome using blooms taxonomy. Course outcomes are mentioned in question papers.
- Individual faculty members set the question papers based on the common guidelines given by the department.
- The papers are submitted to Department Working Committee (DWC) through the Module coordinator for quality audit of question papers.The quality of question papers are checked by DWC on the basis of following parameters;

    i. Framing of questions according to CO.

    ii. Use of Blooms Taxonomy in framing the questions.

    iii. Framing of new questions on concepts.

*b. Conduction*

1. The Internal Assessment tests and Preliminary Examinations are conducted centrally at institute level strictly as per university examination pattern. The central conduction team is responsible for following activities;

- Preparing and displaying time table for all classes of all programs.
- Planning of seating arrangement for all students of all programs.

- Collection of final question papers from departments and making multiple sets as per requirement.
- Strict vigilance is maintained during examination to avoid unfair means practices.

2. The remaining internal evaluations are conducted at teachers level as per course assessment plan.

## c. Assessment

- Rubrics / Marking schemes for assessment are prepared and followed during evaluations, which are discussed with students.
- The evaluation is done as per the rubrics. This helps the students to understand the expected answers.
- Assessment is finished within one week of last day of examinations.
- The evaluated answer papers are shown and discussed with the students for maintaining transparency.

## d. Result Declaration

- The results are prepared and displayed within one week after the completion of last examinations.

| File Description | Document |
|---|---|
| Any additional information | [View Document](#) |

## 2.5.3 Mechanism to deal with examination related grievances is transparent, time-bound and efficient

**Response:**

1. Grievances under Continuous Internal Assessment:

- At the beginning of the semester, faculty members inform the students about the various components in the assessment process during the semester.
- The internal assessment tests schedule is prepared as per the academic calendar and communicated to the students well in advance
- The assessed answer papers are shown to the students for the verification and any grievance is redressed immediately by teachers.
- The marks obtained by the students in Internal Assessment tests after their verification are displayed on the department notice boards.
- To address the grievances related to malpractices during Internal Assessment, internal Grievance Redressal Committee is existing.

2. Grievances under End Semester Examination:

- In University of Mumbai; conduction, assessment and result declaration for first and final year examination is done by university.
- Second and third year examinations are conducted by institute on behalf of university. Time table

and question papers are sent by university. Assessment is done by internal faculty and moderation is done by approved external examiners of university. Results are processed by institute and submitted to university for approval. Once results are approved by university, then only institute shall declare the results.

a. Grievances in conduction of examination

 i.Unfair means cases during conduction of First and Final year examination

If any student indulging in unfair means case during examination is caught; Conduction team follows the proper process of registering case in terms of statement of student, junior supervisor etc. ,which is verified and endorsed by Senior Supervisor and Chief Conductor. The confiscated unfair means material and answer books are sealed in separate cover along with statements and sent to university.

University Unfair means committee will conduct hearing and undergo scrutiny of unfair means material and recommend penalty as per the university ordinance.

ii. Unfair cases during conduction of Second and Third Year examination

For second and third year examination same process is followed but documents remains with institute. Institute follows due process as per the university ordinances and unfair means committee is appointed by Head of Institute to conduct hearing and scrutinize unfair means material. Committee follows university ordinances strictly while recommending penalty and submit report of same to Head of Institute. Head of Institute communicates in writing decision to concerned student.

b. Grievances in assessment

Student can apply for photocopy of their answer books. If students found any part of answer is not assessed  and counting mistakes, he/she can apply under grievance.  If found correct, examination section either at university or institute may take appropriate measures and if required amend the results accordingly and communicate to students

In addition to these existing grievance mechanism if any student is not happy about marks obtained in End Semester Examination, he/she can apply for revaluation as per university provision.

| File Description | Document |
| --- | --- |
| Any additional information | [View Document](#) |

## 2.5.4 The institution adheres to the academic calendar for the conduct of CIE

**Response:**

The Institute academic calendar draft is prepared by Dean Academics as per the university guidelines which is placed in HODs and Deans meeting with principal, discussed in detail and approved with correction if any required before commencement of every semester .

Institute academic calendar accommodate the following major activities;

- Date of beginning and end of semester
- Schedule of co-curricular activities
- Schedule of extra-curricular activities
- Tentative period of various feedback collection
- Tentative period of Industrial visits
- Defaulters monitoring meeting schedule
- Internal Assessment tests (IA) dates
- Preliminary examination dates
- Schedule of term work submission
- Tentative period of practical/oral examination
- Schedule of various academic audits

Head of the department along with faculty members prepares an academic calendar of their departments based on institute academic calendar which includes major additional activities of department and detailed continuous internal assessment plan.

Every faculty prepares course assessment plan on the basis of academic calendar of institute and department, which includes major (Internal Assessment tests, Assignment Tests, Prelim exam) and additional internal assessments tools such as assignments, MCQ, quizzes and strictly adheres to the same.

Academic calendars are uploaded on college website. Course assessment plans are also provided to students by faculty.

Institute strictly follows the academic calendar for conduction of continuous internal assessment such as Internal Assessment Tests, Preliminary exams etc.  All departments strictly adhere their academic calendar in conducting continuous internal assessment such as Assignment Tests, MOCK practical, Project progress presentations etc. Head of departments monitors conduction of all components of continuous internal assessment and also the outcomes (results) of same on regular basis.

It has been observed that the deviation in academic calendar is just 5% due to unavoidable circumstances such as sudden declaration of holidays by Government or placement schedule for final year students.

| File Description | Document |
| --- | --- |
| Any additional information | [View Document](#) |
| Link for Additional Information | [View Document](#) |

## 2.6 Student Performance and Learning Outcomes

**2.6.1 Program outcomes, program specific outcomes and course outcomes for all programs offered by the Institution are stated and displayed on website and communicated to teachers and students**

**Response:**

*Programme outcomes:*

- The statements of the POs are adapted from the NBA SAR-Annexure I.

*Programme specific outcomes:*

- Program Specific Outcome (PSO) statements for all programs, were drafted based on guidelines from SWOT analysis by DWC (Department Working Committee) and approved by DAB (Department Advisory Board).
- The DAB consists of the representatives from all the stakeholders, such as students, parents, alumni, industries, and academia

PSOs are disseminated to the stake holders through the following channels:

1. Institute Website (https://www.fcrit.ac.in/academics/under-graduate/mechanical
2. Department Notice Board
3. Laboratory Notice board
4. HOD Cabin
5. Course Booklet Given to students at the start of semester

*Course outcomes:*

Course outcomes (COs) are stated for all courses in  clear statements of what a student should be able to demonstrate upon completion of a course with respect to knowledge and skills.

- For every Course, 'Course Objectives' and 'Course Outcome' statements are readily available in the syllabus approved by the university.
- However, if the course coordinator does not agree to the CO statements given in the Mumbai University curriculum s/he revises and writes down around six Course Outcomes (COs) for the theory and around four COs for the laboratory related courses in consultation with module coordinators
- Guidelines to frame Course outcomes are given in OBE booklet.
- Course outcomes are disseminated to the students  in following way

1. Course Booklet Given to students at the start of semester.
2. Presentation of OBE model and course outcome assessment plan by every course teacher in the first lecture.
3. Laboratory Continuous Assessment format.
4. Laboratory Notice Board.

| File Description | Document |
|---|---|
| COs for all courses (exemplars from Glossary) | View Document |
| Any additional information | View Document |

**2.6.2 Attainment of program outcomes, program specific outcomes and course outcomes are evaluated by the institution**

**Response:**

Institute has started Outcome Based Education (OBE) model from the academic year 2014-15. Institute followed National Board of Accreditation (NBA) guidelines in the process of calculating attainment of Course Outcome (CO), Program Outcome (PO), and Program Specific Outcome (PSO)

*CO attainment*

The process for finding the attainment of Course outcomes uses various tools/methods. These methods are classified into two types: Direct Evaluation (80%) and Indirect Evalutions (20%).

- Direct Evaluation *(80%)* display the student's knowledge and skills from their performance in In-semester Evaluations (60%) and End-semester Evaluations (40%).

- In-semester Evaluations (60%): The internal evaluations includes Continuous Internal Evaluations (CIE) such as class/assignment test, internal assessment tests, assignments, seminars, laboratory assignments/practicals, mini projects, preliminary examination etc. These methods provide a sampling of what students know and/or can do and provide strong evidence of student learning.

- End-semester Evaluation (40%): The external evaluations includes End Semester Examinations conducted by the University.

- Indirect Evaluations *(20%)* such as course exit survey

The attainment of the course outcomes of the courses are evaluated through the following steps:

1. Goal Set
2. Assignment of tools
3. Entry of Marks
4. Attainment calculation

1. **Goal Set**: In the beginning of the semester, Goal (Course Outcome Attainment level) is set for each course. The initial goal setting was done in the year 2015-2016 by considering the average performance levels in the university examination of previous three years.
2. **Assignment of Assessment Tools**: Each course outcome is evaluated based on minimum two assessment tools selected by faculty at the beginning of the semester.
3. **Entry of Marks against Assessment Tools**: Course Outcomes evaluation is done based on the schedule mentioned in the department calendar. Marks for each assessment tools are entered in the Academic Performance Monitoring System (APMS)
4. **Attainment Calculation**: Based on the weightages mentioned, calculations are made by the APMS software.

*PO and PSO attainment*

Attainment of each of the Program outcomes are measured by considering **direct assessment** (i.e.

Outcome Attainment of all Courses) and **indirect assessment** (i.e. Program Exit survey and Extra-Curricular Activities Survey). **80% weightage** is given for **Direct** Assessment and **20% weightage** is given for **indirect** assessment. In indirect assessment equal weightage is given to Program Exit survey and Extra-Curricular Activities.

- **Direct Assessment:**

Attainment of Course Outcome is directly considered in the PO attainment reference cell where the CO-PO mapping was done earlier. Course wise average value of attainment is taken in PO attainment.

- **Indirect Assessment**:

Program Exit Survey and Feedback on extra-curricular activities are considered as tools for indirect assessment. Program exit survey is collected from final year students and feedback on extra-curricular activities is collected from third year students of all the programs.

Attainment of PSO is calculated by Direct Assessment method only.

| File Description | Document |
|---|---|
| Any additional information | [View Document](#) |

---

**2.6.3 Average pass percentage of Students**

**Response:** 98.97

2.6.3.1 Total number of final year students who passed the examination conducted by Institution.

Response: 386

2.6.3.2 Total number of final year students who appeared for the examination conducted by the institution

Response: 390

| File Description | Document |
|---|---|
| Institutional data in prescribed format | [View Document](#) |
| Any additional information | [View Document](#) |

## 2.7 Student Satisfaction Survey

**2.7.1 Online student satisfaction survey regarding teaching learning process**

**Response:** 3.18

# Criterion 3 - Research, Innovations and Extension

## 3.1 Resource Mobilization for Research

**3.1.1 Grants for research projects sponsored by government/non government sources such as industry ,corporate houses, international bodies, endowment, chairs in the institution during the last five years (INR in Lakhs)**

**Response:** 139.92

3.1.1.1 Total Grants for research projects sponsored by the non-government sources such as industry, corporate houses, international bodies, endowments, Chairs in the institution year-wise during the last five years(INR in Lakhs)

| 2018-19 | 2017-18 | 2016-17 | 2015-16 | 2014-15 |
|---------|---------|---------|---------|---------|
| 31.24   | 23.63   | 6.5     | 53.3    | 25.25   |

| File Description | Document |
|------------------|----------|
| List of project and grant details | [View Document](#) |
| e-copies of the grant award letters for research projects sponsored by non-government | [View Document](#) |
| Any additional information | [View Document](#) |

**3.1.2 Percentage of teachers recognised as research guides at present**

**Response:** 8.6

3.1.2.1 Number of teachers recognised as research guides

Response: 8

| File Description | Document |
|------------------|----------|
| Any additional information | [View Document](#) |

**3.1.3 Number of research projects per teacher funded, by government and non-government agencies, during the last five year**

**Response:** 0.68

3.1.3.1 Number of research projects  funded by government and non-government agencies during the last five years

Response: 65

3.1.3.2 Number of full time teachers worked in the institution during the last 5 years

Response: 480

| File Description | Document |
|---|---|
| Supporting document from Funding Agency | [View Document](#) |
| Funding agency website URL | [View Document](#) |

## 3.2 Innovation Ecosystem

**3.2.1 Institution has created an ecosystem for innovations including incubation centre and other initiatives for creation and transfer of knowledge**

**Response:**

**Incubation centre**

Fr. C. Rodrigues Institute of Technology, Vashi, has a separate Incubation centre, named as Centre for Incubation and Business Acceleration (CIBA). It includes members from academic Institutions, Entrepreneurs and Industrialist. CIBA is a Technology Business Incubator catalyzed and supported by Department of Science & Technology under the Startup India Action Plan. Business incubation centres provide support to startup companies in terms of Consultation, Mentoring, Business Plan development, Business Promotion, Incubation Space, Office support, Library and Documentation, Assistance in Obtaining Finance, Legal experts and seed funding. There are 20 startups under CIBA, Vashi and many more in progress.

**Other initiatives for creation and transfer of knowledge**

The institute has remarkable research culture wherein most of the faculty members, research scholars & students are engaged in research work. Laboratories are well equipped and provide an adequate infrastructure required for research.

Institute is recognized as Research center by University of Mumbai in Mechanical Engineering, Electronics and Telecommunication Engineering and Electrical Engineering. We have eight approved research guides under Mumbai University that help in developing research projects.

The library is well equipped with the number of reference books and standard National, International Journals and e-Journals that permit an extensive literature review. Our research scholars and students have access to IIT Bombay Library through annual membership.

The institute provides a budget for research and development activity, which help in funding for research work, publications and travel for research activities. This encourages faculty to publish their research work in reputed journals and present at IEEE conferences. Faculty members are sponsored for attending conferences and workshops to enrich their knowledge. Faculty at institute are encouraged register for patents. Faculty register for their Ph.D. work in institute like IIT Bombay, VJTI Mumbai etc to ensure that environment of heterogeneous research culture is finally established at our institute.

The institute caters a large number of consultancy projects which in turn bring about research experiences and also create real time data which lead to research. A number of industry related projects are undertaken and completed in the institute both as academic curriculum projects and as projects from industry. The institute follows professional values and human ethics.

| File Description | Document |
|---|---|
| Any additional information | [View Document](#) |
| Link for Additional Information | [View Document](#) |

**3.2.2 Number of workshops/seminars conducted on Intellectual Property Rights (IPR) and Industry-Academia Innovative practices during the last five years**

**Response:** 414

3.2.2.1 Number of workshops/seminars conducted on Intellectual Property Rights (IPR) and Industry-Academia Innovative practices year-wise during the last five years

| 2018-19 | 2017-18 | 2016-17 | 2015-16 | 2014-15 |
|---|---|---|---|---|
| 130 | 125 | 90 | 46 | 23 |

| File Description | Document |
|---|---|
| List of workshops/seminars during the last 5 years | [View Document](#) |

## 3.3 Research Publications and Awards

**3.3.1 The institution has a stated Code of Ethics to check malpractices and plagiarism in Research**

**Response:** Yes

| File Description | Document |
|---|---|
| Institutional data in prescribed format | [View Document](#) |

**3.3.2 The institution provides incentives to teachers who receive state, national and international recognition/awards**

**Response:** Yes

| File Description | Document |
|---|---|
| e- copies of the letters of awards | [View Document](#) |

**3.3.3 Number of Ph.D.s awarded per teacher during the last five years**

**Response:** 0.5

3.3.3.1 How many Ph.Ds awarded within last five years

Response: 4

3.3.3.2 Number of teachers recognized as guides during the last five years

Response: 8

| File Description | Document |
|---|---|
| URL to the research page on HEI web site | View Document |
| List of PhD scholars and their details like name of the guide , title of thesis, year of award etc | View Document |
| Any additional information | View Document |

**3.3.4 Number of research papers per teacher in the Journals notified on UGC website during the last five years**

**Response:** 3.04

3.3.4.1 Number of research papers in the Journals notified on UGC website during the last five years

| 2018-19 | 2017-18 | 2016-17 | 2015-16 | 2014-15 |
|---|---|---|---|---|
| 26 | 40 | 51 | 94 | 81 |

| File Description | Document |
|---|---|
| List of research papers by title, author, department, name and year of publication | View Document |
| Any additional information | View Document |

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

**Response:** 3.85

3.3.5.1 Total number of books and chapters in edited volumes / books published, and papers in national/international conference-proceedings year-wise during the last five years

| 2018-19 | 2017-18 | 2016-17 | 2015-16 | 2014-15 |
|---------|---------|---------|---------|---------|
| 66 | 103 | 76 | 68 | 57 |

| File Description | Document |
|------------------|----------|
| List books and chapters in edited volumes / books published | [View Document](#) |
| Any additional information | [View Document](#) |

## 3.4 Extension Activities

**3.4.1 Extension activities in the neighbourhood community in terms of impact and sensitising students to social issues and holistic development during the last five years**

**Response:**

**Agnel Social Cell (ASC)**

The Institute faculty and students are involved in various community work and reach out to the deserving and the needy. This helps them to learn ethical values and understand their responsibilities and develop them as good citizens. Institute has a Cell, called Agnel Social Cell (ASC) with a group of enthusiastic students and a faculty.

ASC organizes many social activities like Tree Plantation, Citizen Responsibility Drive, Eye Check Up Drive, Visit to the Old Age Home etc. Faculty members and students visit the orphanage in the vicinity of the institute to provide support and interact with them. Besides, they have also dealt with issues like stigma attached with HIV and AIDS, stray dogs, misconceptions regarding blood and organ donation etc.

ASC emphasizes upon the holistic development of an individual. Faculty and students actively participate in Swachh Bharat Abhiyaan in campus and around Vashi city.

Humanitarian aid is contributed during natural calamities like flooding and earthquake in many parts of India.

Another motive on which the cell works, is to provide practical skills for reducing stress and worry from everyday life with an aim to nurture the experience of love, peace, joy and enthusiasm in our lives by introducing yoga and meditation and open the doors to spirituality.

A felicitation ceremony named as 'Recognizing the Unrecognized' was organized for peons, cleaners, security at the gates and the hostel workers to thank for their duties towards the college.

'Art of living' offered an interactive and enriching experience, helping students boost their confidence, work on their short-comings, understanding the importance of hard-work, finding the right path, inculcating good morals and developing a positive approach towards life. ASC also conduct informative

learning sessions, brain storming meetings, professional development workshops, interaction with students from neighbourhood colleges.

**Literary and Debate Club**

The Literary and Debate Club was initiated in order to give our students an open platform to express their ideas in the most creative and innovative form possible. Students learn the use of the spoken and written word, in a creative way, to promote a social cause effectively and create awareness about a lot of social problems faced by society in general. The Literary and Debate Club has under its onus the Agnel Intercollegiate Debate, Agnel's Samvaad and the Arts and Dramatic Circle.

**Student council**

The student council is a body which represents the entire student community and undertakes the organization of various events and fests in the institute. Apart from regularly organising annual events like the independence day, republic day and Teachers' day, the Student Council along with a host of other students organises an intra-collegiate fest (FACES) and an inter collegiate techno fest (Eta Max).

**Sustainable, Ethical and Environmental development council (SEED)**

The Sustainable, Ethical and Environmental development council (SEED), established in February 2018 by Department of Electronics and Telecommunication Engineering, has the objective to create awareness among students about environmental and ethical issues in the society and enlighten them about their responsibility in the eradicating these problems.

| File Description | Document |
|---|---|
| Any additional information | [View Document](#) |

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**3.4.2 Number of awards and recognition received for extension activities from Government /recognised bodies during the last five years**

**Response:** 1

3.4.2.1 Total number of awards and recognition received for extension activities from Government /recognised bodies year-wise during the last five years

| 2018-19 | 2017-18 | 2016-17 | 2015-16 | 2014-15 |
|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 0 |

| File Description | Document |
| --- | --- |
| Number of awards for extension activities in last 5 years | [View Document](#) |
| e-copy of the award letters | [View Document](#) |

### 3.4.3 Number of extension and outreach Programs conducted in collaboration with Industry, Community and Non- Government Organizations through NSS/ NCC/ Red Cross/ YRC etc., during the last five years

**Response:** 49

3.4.3.1 Number of extension and outreach Programs conducted in collaboration with Industry, Community and Non- Government Organizations through NSS/ NCC/ Red Cross/ YRC etc., year-wise during the last five years

| 2018-19 | 2017-18 | 2016-17 | 2015-16 | 2014-15 |
| --- | --- | --- | --- | --- |
| 11 | 16 | 8 | 8 | 6 |

| File Description | Document |
| --- | --- |
| Reports of the event organized | [View Document](#) |
| Number of extension and outreach programs conducted with industry,community etc for the last five years | [View Document](#) |

### 3.4.4 Average percentage of students participating in extension activities with Government Organisations,  Non-Government Organisations and programs such as Swachh Bharat, Aids Awareness, Gender Issue, etc. during the last five years

**Response:** 26.72

3.4.4.1 Total number of students participating in extension activities with Government Organisations, Non-Government Organisations and programs such as Swachh Bharat, Aids Awareness, Gender Issue, etc. year-wise during the last five years

| 2018-19 | 2017-18 | 2016-17 | 2015-16 | 2014-15 |
| --- | --- | --- | --- | --- |
| 565 | 791 | 166 | 399 | 118 |

| File Description | Document |
| --- | --- |
| Report of the event | View Document |
| Average percentage of students participating in extension activities with Govt or NGO etc | View Document |

## 3.5 Collaboration

**3.5.1 Number of linkages for faculty exchange, student exchange, internship, field trip, on-the-job training, research, etc during the last five years**

**Response:** 471

3.5.1.1 Number of linkages for faculty exchange, student exchange, internship, field trip, on-the-job training, research, etc year-wise during the last five years

| 2018-19 | 2017-18 | 2016-17 | 2015-16 | 2014-15 |
| --- | --- | --- | --- | --- |
| 146 | 109 | 100 | 78 | 38 |

| File Description | Document |
| --- | --- |
| Number of Collaborative activities for research, faculty etc | View Document |
| Copies of collaboration | View Document |
| Any additional information | View Document |

**3.5.2 Number of functional MoUs with institutions of National/ International importance, Other Institutions, Industries, Corporate houses etc., during the last five years (only functional MoUs with ongoing activities to be considered)**

**Response:** 19

3.5.2.1 Number of functional MoUs with institutions of national, international importance, other universities, industries, corporate houses etc. year-wise during the last five years (only functional MoUs with ongoing activities to be considered)

| 2018-19 | 2017-18 | 2016-17 | 2015-16 | 2014-15 |
| --- | --- | --- | --- | --- |
| 5 | 12 | 1 | 0 | 1 |

| File Description | Document |
| --- | --- |
| e-copies of the MoUs with institution/ industry/ corporate house | View Document |
| Details of functional MoUs with institutions of national, international importance,other universities etc during the last five years | View Document |
| Any additional information | View Document |

# Criterion 4 - Infrastructure and Learning Resources

## 4.1 Physical Facilities

**4.1.1 The institution has adequate facilities for teaching- learning. viz., classrooms, laboratories, computing equipment, etc.**

**Response:**

Fr. C. Rodrigues Institute of Technology, Vashi campus was established in the year 1994 and is spread over 6.84 acres' land. The available carpet area for Main building is 4565.8 sq. m. and for Annex building is 10043.55 sq. m. Total carpet area for exclusive use of FCRIT is **14,609.42 sq. m**.

**Main building accommodates**:

Department of Information Technology, Department of Humanities and Basic Sciences, and Central library are located in the Main building. Also, Administrative offices for Managing Directors, Asst. Managing Director, Principal, Procurator, Conference room, Accounts Section, Counselling cell, Training and Placement cell, etc. are available in the Main building.

**The Annex building accommodates**:

General workshop and Machine shop, Department of Mechanical engineering, Electrical engineering, Electronics and Telecommunication engineering, Computer engineering, Centre for Incubation and Business Acceleration (CIBA), Seminar hall, auditorium, exam cell, Central server system, Boys & Girls common room, are accommodated in the Annex building.

**Central Library:**

The central library is located in the Main building. It has two floors covering **775.26 sq. m.**

**Class Rooms:**

The Institute has **21 UG classrooms, 04 UG tutorial rooms, 06 PG class rooms, & 3 seminar halls**, which are well furnished, well ventilated, and spacious for conducting theory classes/tutorials/seminars. The area of each class rooms in Annex building is **80 sq. m.** (AICTE norm is **66 sq. m.**). Each Classroom has a seating capacity of **80 students** and **16 classrooms** are equipped with **LAN** enabled internet connectivity and are provided with LCD projectors and Laptops/PC. Five class rooms are having smart board facility.

**Laboratories:**

The Institute has **fifty Laboratories**. All laboratories in the institute are well equipped and well maintained. Total investment in all the lab in the past three FYs (2015 to 2018) **was Rs.2.08 crores.** The college has an exclusive Language Lab to cater to the enrichment of communication skills. The institute has 5 research laboratories. Few equipments of the laboratories are sponsored/funded by industry, university, AICTE, BRNS, etc. Each department is provided with sufficient number of PCs, printers and scanners. All faculty cabins are equipped with PC and internet connection.

Total, there are 658 computers with internet facility (speed 50 Mbps) and Wi-Fi facility in lobby and corridors, 33 legal application software's, 6 legal system software's, and 42 printers are available for the students.

**Seminar Hall & Auditorium:**

The institute has **three Seminar halls and one auditorium**; all are **ICT enabled**.

**Smart Classroom**:

Smart classroom facilities are available in five classrooms with lecture recording and preparing e-Content for the course content delivery.

**ICT facilities:**

The Institute has in-house developed software's for Academic Performance Monitoring System (APMS), Placement portal, Library access (KOHA) , LMS (MOODLE), etc. Academic Spoken Tutorial, NPTEL Videos, Webinars etc. are available which help in enriching teaching-learning process. New Software licenses and packages are purchased and upgraded as per requirement.

| File Description | Document |
|---|---|
| Any additional information | [View Document](#) |
| Link for Additional Information | [View Document](#) |

**4.1.2 The institution has adequate facilities for sports, games (indoor, outdoor),gymnasium, yoga centre etc., and cultural activities**

**Response:**

The Institute is committed to create a balanced experience of academics, cultural and sports activities for the overall personality development of students.  Our trust has established facilities for sports and cultural events. These facilities are shared by all the institutes coming under trust. Overall area of **42,199 sq. m.** is available for outdoor sports while total **2400 sq. m.** area is available for indoor sports. An open space of **537.8 sq. m.** is available in the campus for conducting cultural activities. Most of the students participate in sports and cultural activities during Institute Techno-cultural events organized during every semester while few individuals practice it regularly and participate in competitions at regional/state/national/ international level.

**Sports Activities:**

The Institute encourages students to participate in sports activities. A playground for outdoor games like cricket, volleyball, tennis, kho-kho, kabaddi and basketball are available. **Agnel Badminton Academy** is set up on the 7th floor of the Annex building with 4 badminton courts. These courts are of international standards with imported **European flooring** and **Japanese lighting** as approved by **Badminton World**

**Federation** (BWF). On designated days and time, these courts are open to all and can be pre-booked for play on the portal https://bit.ly/badmintongurukul. There is also coaching facility available. For the coaching - Agnel Badminton Academy has tied up with Badminton Gurukul, which is an initiative of renowned coach **Shri. Pullela Gopichand**. Same facility is converted into an auditorium as and when needed. Many students have participated in various inter university, inter college and Inter departmental tournaments and bring honors like medals, trophies and certificates for themselves and Institute. Institute organizes yoga and pranayama classes for the faculty and students by the yoga experts in campus.

Table 4.1.2.a Available Sports Facilities.

| Sr.No | Facilities Available | Details of facilities Available |
|---|---|---|
| 1 | Indoor/Outdoor Facilities | It has table tennis, Shooting range, Chess board room, Gymnastic hall, skating ring, Athletic Astroturf, Hockey ground, football Astroturf, twin basketball court,4 indoor badminton AC courts, Volleyball court. |
| 2 | Swimming Pool | It has pool of size 525 Sq.m. |
| 3 | Badminton court | The court has been taken up by Gopichand Academy. |
| 4 | Yoga and Pranayama | AC hall available |

**Cultural Activities:**

The Institute encourages the students to participate in various cultural activities and excel in their fields of interest. Institute conducts various cultural activities every semester under various festivals named "ETAMAX" and "FACES". Street Play competitions are held in college festivals to create awareness about social issues. Students participate in regional level, inter collegiate dance competition, street play competition, debate competition, etc. Students participate in traditional day exhibiting the diverse cultures from which they originate.

Table 4.1.2.b Facilities for cultural events.

| Sr,No | Facilities Available | Details of Facilities Available |
|---|---|---|
| 1 | Foyer, Lawn | An open ground facility is available for conducting cultural festival. |
| 2 | Seminar hall/Auditorium | A closed auditorium is available having seating capacity of 650. Additional three seminar halls are available with a capacity of 200. |

| File Description | Document |
|---|---|
| Any additional information | [View Document](#) |
| Link for Additional Information | [View Document](#) |

**4.1.3 Percentage of classrooms and seminar halls with ICT - enabled facilities such as smart class, LMS, etc**

**Response:** 100

4.1.3.1 Number of classrooms and seminar halls with ICT facilities

Response: 24

| File Description | Document |
| --- | --- |
| Number of classrooms and seminar halls with ICT enabled facilities | View Document |
| any additional information | View Document |
| Link for additional information which is optional | View Document |

**4.1.4 Average percentage of budget allocation, excluding salary for infrastructure augmentation during the last five years.**

**Response:** 28.44

4.1.4.1 Budget allocation for infrastructure augmentation, excluding salary year-wise during the last five years (INR in Lakhs)

| 2018-19 | 2017-18 | 2016-17 | 2015-16 | 2014-15 |
| --- | --- | --- | --- | --- |
| 90.79 | 128.94 | 206.79 | 72.43 | 53.71 |

| File Description | Document |
| --- | --- |
| Details of budget allocation, excluding salary during the last five years | View Document |
| Audited utilization statements | View Document |
| Any additional information | View Document |

## 4.2 Library as a Learning Resource

**4.2.1 Library is automated using Integrated Library Management System  (ILMS)**

**Response:**

**Response:** Yes

**Name of software: Library Management System**

**Library Management System is customized on KOHA platform (Version-18.11.02.000).**

The Library is providing access to Online Public Access Catalogue (OPAC)(**library.fcrit.ac.in**).

Through OPAC

- Students and faculty can make search by author, title, subject within and outside the campus.
- Students and faculty can access e-books within campus
- Students and faculty can access IEEE Journal within campus.

For the years from 2013-2014 to 2016-2017 there was an In-house software Library Resource Management Software (LRMS) with the version VB6 SQL Server. ILMS was introduced in 2017.

**Nature of automation (Fully or Partially): Fully Automated**

Library is fully automated through Library Management System. Transaction of books is based on barcoded on student's I-cards/books. Barcode scanners are available at the circulation section to Issue and return the books. Cataloguing of books and report generation is done through the system.

**Description of the Library:**

FCRIT Central Library is located in the Main building on 1st and 2nd floor. The total area of the central library is **775.26 sq.m.** Central Library is serving its facilities to all students, staff and faculties of degree, and diploma. **Reading Hall, Circulation Section, Baggage Counter, Multimedia Section, Reprographic Section and Librarian's Cabin are available on the 1st floor.** While **Reference Section, Journal/Magazine Section, newspaper Section as well as Reading Hall** are located on the 2nd floor.

**Central Library timing is 8.45 AM to 11.00 PM** and it remains closed on holidays, Sundays, and 2nd and 4th Saturdays. Students can issue 3 books for one-week duration. Faculty can issue 7 books for 6 months' duration. **Central Library** has centralized AC facility. It has seating capacity of two hundred and fifty.

**Total collection** of the central library is **45298 out of which FCRIT (degree) collection itself is 24638 (21356 in Central library and 3282 in Department library**) books which includes textbooks and reference books. We subscribe print journals and magazines and e-journals **(IEEE and ASME)** and e-books **(Springer e-book).**

We have an **Institutional membership with IIT Bombay Library** for accessing resources of the IIT library.

We have schemes for membership of Alumni/Ex-students.

**Details of library holding (FCRIT):**

**1. Central Library + Department Library**

| Items | Number |
|---|---|
| Book Titles | 6733 + 1445 (Department Library) = 8175 |
| Volumes | 21356 + 3282 (Department Library) = 24638 |
| National Journals | 40 |
| International Journals | 12 |
| National Magazines | 10 |
| Springer e-book | 1890 |
| ASME e-journal | 30 |
| IEEE-IEL e-journal | 505 |

## 2. Department Library

| Items | | Number |
|---|---|---|
| Books | | 3282 |
| Titles | | 1445 |
| Thesis: | Ph.D. Thesis | 13 |
| | M.E Dissertations | 139 |

## 3. Number of books added during last six years.

| Year | Title | Volume |
|---|---|---|
| 2013-14 | 351 | 853 |
| 2014-15 | 105 | 554 |
| 2015-16 | 161 | 792 |
| 2016-17 | 105 | 451 |
| 2017-18 | 8 | 43 |
| 2018-19 | 61 | 222 |
| **Total** | **791** | **2915** |

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**Initiatives to render library services**

- Central Library is providing text books and reference books to students as per prescribed syllabus. Apart from text books and reference books, library is having collection of Motivational Books/Competitive-Examination/Encyclopedia/Dictionaries/Communication-Skills/Religious Books, etc.
- **Dewey Decimal Classification** for books arrangement implemented.
- 10-Multimedia PCs with internet connectivity are available for students to access e-resources of the library.

| File Description | Document |
|---|---|
| Any additional information | [View Document](#) |
| Link for Additional Information | [View Document](#) |

**4.2.2 Collection of rare books, manuscripts, special reports or any other knowledge resources for library enrichment**

**Response:**

The Institution has the practice of collecting and maintaining rare books, manuscripts, special reports or any other knowledge resources to benefit students and faculty for their knowledge enhancement, research and exploring new things apart from the standard books.

**Rare books:**

The Central library is enriched with good numbers of rare books (either early edition and not available now or limited edition or handbook or very costly book). Various rare books can be downloaded from Rare Book Society of India (RBSI) (https://www.rarebooksocietyofindia.org/home.php). The other e-Book collections are made available and accessible to the students and faculty as reference material for enrichment of their knowledge. Separate racks are provided for rare books in a library.

Manuscripts: Manuscripts in hard copy are available in the Central/Department library for students and faculty use.

**Other knowledge resource:**

The Central library is enriched with books on developing analytical skills, soft skills management, business communication, entrepreneur skills, placement, higher study and competitive exam preparation books are available in a library. Many technical hand-books are available for acquiring A-to-Z information related to specific technical topic. Journals, magazines, and newspapers are made available in the library to enrich the Technical Knowledge, Current Affairs, and General Knowledge. IS Codes Separate racks are provided of IS Codes as reference material to the students to peruse and apply their contents for project work and furtherance of knowledge.

| File Description | Document |
|---|---|
| Any additional information | [View Document](#) |

**4.2.3 Does the institution have the following:**

    1. e-journals
    2. e-ShodhSindhu
    3. Shodhganga Membership
    4. e-books
    5. Databases

**A. Any 4 of the above**

**B. Any 3 of the above**

**C. Any 2 of the above**

**D. Any 1 of the above**

**Response:** B. Any 3 of the above

| File Description | Document |
|---|---|
| Details of subscriptions like e-journals,e-ShodhSindhu,Shodhganga Membership etc | [View Document](#) |
| Any additional information | [View Document](#) |

**4.2.4 Average annual expenditure for purchase of books and journals during the last five years (INR in Lakhs)**

**Response:** 11.58

4.2.4.1 Annual expenditure for purchase of books and journals year-wise during the last five years (INR in Lakhs)

| 2018-19 | 2017-18 | 2016-17 | 2015-16 | 2014-15 |
|---|---|---|---|---|
| 4.33 | 8.784 | 12.99 | 18.06 | 13.757 |

| File Description | Document |
|---|---|
| Details of annual expenditure for purchase of books and journals during the last five years | [View Document](#) |
| Audited statements of accounts | [View Document](#) |
| Any additional information | [View Document](#) |

### 4.2.5 Availability of remote access to e-resources of the library

**Response:** Yes

| File Description | Document |
|---|---|
| Any additional information | [View Document](#) |

### 4.2.6 Percentage per day usage of library by teachers and students

**Response:** 5.88

4.2.6.1 Average number of teachers and students using library per day over last one year

Response: 95

| File Description | Document |
|---|---|
| Any additional information | [View Document](#) |

## 4.3 IT Infrastructure

### 4.3.1 Institution frequently updates its IT facilities including Wi-Fi

**Response:**

**LAN facility & Hardware Details: Server, Router, Switches**

Institute has a campus-wide networking provided to all the buildings through structured cabling and particularly with Wi-Fi facility. We have established client-server architecture in the year 2010 with sixteen Layer 2 manageable switches and Router, Active directory server, Proxy server, O365 mail service and Application server. Laboratory wise Virtual LANs (VLAN) are created. The continuous scaling up depending upon usage is done by increasing numbers of manageable switches and VLANs. As on date, there are thirty-six manageable switches, two layer 3 switches. all switches in the laboratory and staff PC's are connected to the server with link-bundling to get maximum throughput and redundancy in the network. Server room is upgraded in 2017 with latest High configuration servers. Hyper-V and Vmware are used in the server side for hosting application services and web servers. O365 Mail-services are used by Faculty and students for internal communication.

At locations such as laboratories, office, faculty cabin, library, etc., connectivity is through structured cabling for better link availability. However, Wi-Fi facility is provided in places where flexibility is required such as hostel, staff quarters, seminar hall, and common area of each floor in both the building. Reliance Jio Wi-Fi is also available in campus.

**Wi-Fi facility:**

Wi-Fi facility in some regions inside campus started in the year 2006. Point to Point (P2P) connectivity is provided from the server room to hostel and staff quarters within campus using two P2P and twelve access points. This facility is upgraded due to demand and establishment of new infrastructure (eg. Seminal hall etc.). As on date total fifty -five Wi-Fi and seven P2P access points are used in the campus. Wi-Fi facility is provided in both the building with AD authentication required.

**Internet Connectivity:**

All the other places, where Wi-Fi is not available, there wired internet access is made available. The Institute continuously keeps upgrading the internet bandwidth according to the requirement of online examinations for placement, workshop, campus placement training, Practice of MOOCs, Virtual Lab, NPTEL Online Courses and webinar needs. Currently, till 2017 the internet bandwidth available was 30 Mbps while from 2017 onward it is upgraded to 50 Mbps (bandwidth of leased line connection) the institute is using 100 Mbps internet bandwidth managed through the router for proper utilization as per the requirements. As per necessity a dedicated line is provided to facilitate an uninterrupted communication.

**Firewall**:

Initially, internet facility was provided through the Proxy server (software based). Security policies were enhanced through software-based PF-Sense firewall in 2014, which includes Web Filtering, Anti-Spam, and Content Filtering. This firewall is integrated with active Directory server for authentication and Internet access is given then to the active directory authenticated users.

**Licensed Software:**

Institute keeps upgrading the software packages and purchases software as per requirements. Institute has licenses for Operating System such as Microsoft Campus agreement license and Microsoft Perpetual licenses and 33 legal application software. All other terminals are loaded with freeware operating system. Open source application software is also abundantly used.

| File Description | Document |
|---|---|
| Any additional information | [View Document](#) |
| Link for Additional Information | [View Document](#) |

**4.3.2 Student - Computer ratio**

**Response:** 2.31

| File Description | Document |
|---|---|
| Any additional information | View Document |

## 4.3.3 Available bandwidth of internet connection in the Institution (Lease line)
**>=50 MBPS**

**35-50 MBPS**

**20-35 MBPS**

**5-20 MBPS**

**Response:** >=50 MBPS

| File Description | Document |
|---|---|
| Any additional information | View Document |

## 4.3.4 Facilities for e-content development such as Media Centre, Recording facility, Lecture Capturing System (LCS)

**Response:** Yes

| File Description | Document |
|---|---|
| Facilities for e-content development such as Media Centre, Recording facility,LCS | View Document |
| Link to photographs | View Document |

# 4.4 Maintenance of Campus Infrastructure

## 4.4.1 Average Expenditure incurred on maintenance of physical facilities and academic support facilities excluding salary component, as a percentage during the last five years

**Response:** 72.55

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

| 2018-19 | 2017-18 | 2016-17 | 2015-16 | 2014-15 |
|---|---|---|---|---|
| 315.20 | 311.04 | 251.41 | 270.94 | 309.53 |

| File Description | Document |
|---|---|
| Details about assigned budget and expenditure on physical facilities and academic facilities | [View Document](#) |
| Audited statements of accounts. | [View Document](#) |
| Any additional information | [View Document](#) |

**4.4.2 There are established systems and procedures for maintaining and utilizing physical, academic and support facilities - laboratory, library, sports complex, computers, classrooms etc.**

**Response:**

The institution has structured system for maintenance and utilization of infrastructure to facilitate effective teaching - learning along with co-curricular and extracurricular activities to ensure overall development of the students. Various committees are constituted to monitor the maintenance of physical, academic and support facilities given below.

**Academic and support facilities**

**Laboratory:**

Every laboratory is taken care by Laboratory I/C (teaching faculty member) and assigned laboratory assistant. At the end of every semester equipment stock verification and equipment working reports are prepared by laboratory assistant under supervision of laboratory I/C. There is provision in the approved budget for maintenance of equipments. During the maintenance, if anything is required to be procured need to be raised through requisition. Following is the summary related to procedures followed for maintenance of equipments:

1.Records of equipment's are maintained in stock registers as per the process.

2.Equipments / appliances are maintained properly and serviced periodically as required.

3.Equipments are calibrated.

4.Preventive maintenance is carried in-house by the department.

5.Some of the maintenance activities are carried out through annual maintenance contract (AMC).

6.Overall record of repair and maintenance is kept.

7.Major Break down maintenance, if any, is carried out by suppliers of the equipment or external agencies are deployed.

8.Equipment's that are not in working condition and not repairable are written off from the stock.

**Classrooms:**

The classrooms of all the departments are maintained at department level. Electrical maintenance, audio systems, PC and LCD projectors are regularly monitored and maintained. Smart Classroom: The smart classes are maintained regularly by monitoring equipments, escan antivirus and the addition or deletion of software on the machines. The class rooms are utilized in accordance with the time-table prepared for each academic semester.

**Computers:**

The institute has more than the prescribed norms of the computers with internet connections and utility softwares distributed in different locations. The softwares are renewed regularly as per the need. The Campus has an intranet for internal communication which is maintained by the same committee who maintains the server, structured cabling & fiber optics and internet connection. They are assisted by laboratory assistants. The institute website updating and LMS Server maintenance is handled by a system admin regularly.

**Moodle** (Modular Object-Oriented Dynamic Learning Environment) is the most widely used free open-source learning management system in the world today. Moodle **Learning Management System** (LMS) serves hundreds of millions of educators and learning and development professionals to create and deliver online learning. We have recently customized Moodle- platform i.e. LMS in our college to welcome and upgrade new era in teaching-learning process and also to bridge the technology gap between students and teachers. All notes, test papers, assignments are being updated in this portal and are just a login away from the students. They can avail this service from anywhere and thus will help the students to improve their academic performance. The maintenance of LMS system is carried out by the teacher I/C.

**Library:**

Library is monitored and maintained by the librarian along with its members.

**Cafeteria:**

FCRIT is in process of constructing new canteen facilities for our students. Current cafeteria facilities are spacious and well ventilated providing refreshments to students all throughout the day. It also provides breakfast/lunch/dinner facilities to hostel students.

**Placement Portal:**

The placement portal facilitates the students to update their academic record after the announcement of the end-semester results. The placement coordinator can provide this data to the industries who visit the campus for placements. The Training & Placement Cell (TPC) will display the eligibility criteria by the companies and the portal automatically sends the SMS to the eligible students. The result at various stages of selection process (e.g., aptitude test, group discussions, interview, etc.) will be updated on the portal thus helping the departments to get an idea about at which stage students are not performing well. The development of this portal, its upgradation as per the needs, and maintenance is carried out by the teacher I/C.

**APMS Portal:**

Academic performance Monitoring System (APMS) is regularly maintained by the computer department

faculty. This in-house developed portal enables staff members to update student's attendance, academic records like assignments, tests, project marks regularly and based on entered marks it computes CO-PO-PSO attainment levels thus helping effective implementation of Outcome Based Education (OBE) model. Various feedbacks from students are also obtained through this portal. It helps HOD's to monitor attendance record and academic performance of the students. The development of this portal, its upgradation as per the needs, and maintenance is carried out by the teacher I/C.

**Library Portal:**

This portal enables the students remote access of available books in the central library. The portal will update the number of copies available with the library. The development of this portal, its upgradation as per the needs, and maintenance is carried out by the teacher I/C.

**Support facilities, Security, etc.:**

The Sports facilities are maintained by the sports in-charge. The landscaping in the form of gardening is maintained by a gardener. Institution Security is looked after by a security In-Charge. The institute has several CCTV cameras installed at various premises which are regularly monitored and maintained by the system administer.

The institute has contract for regular cleaning & maintenance with a third party for housekeeping wherein their sweepers and a supervisor maintain cleanliness of Main and Annex building. Well maintained toilets (including for physically challenged persons) are made available for male and female students and staff. The water filter and cooler facility is also provided at each floors of both buildings at both ends. The rainwater harvesting facility facilitates water requirement for gardening purpose. The generators, maintained by the team lead by Dr. Sushil Thale (Dean of R & D), are provided in the campus to take care of any electricity failures for the smooth functioning of the academic activities. The institute also has a ramp facility for the handicapped student's smooth entry and exit.

| File Description | Document |
|---|---|
| Any additional information | [View Document](#) |
| Link for Additional Information | [View Document](#) |

# Criterion 5 - Student Support and Progression

## 5.1 Student Support

### 5.1.1 Average percentage of students benefited by scholarships and freeships provided by the Government during the last five years

**Response:** 14.44

5.1.1.1 Number of students benefited by scholarships and freeships provided by the Government year-wise during the last five years

| 2018-19 | 2017-18 | 2016-17 | 2015-16 | 2014-15 |
|---------|---------|---------|---------|---------|
| 171     | 179     | 223     | 234     | 305     |

| File Description | Document |
|------------------|----------|
| Upload self attested letter with the list of students sanctioned scholarships | [View Document](#) |
| Average percentage of students benefited by scholarships and freeships provided by the Government during the last five years | [View Document](#) |
| Any additional information | [View Document](#) |

### 5.1.2 Average percentage of students benefited by scholarships, freeships, etc. provided by the institution besides government schemes during the last five years

**Response:** 1.24

5.1.2.1 Total number of students benefited by scholarships, freeships, etc provided by the institution besides government schemes year-wise during the last five years

| 2018-19 | 2017-18 | 2016-17 | 2015-16 | 2014-15 |
|---------|---------|---------|---------|---------|
| 19      | 25      | 17      | 13      | 21      |

| File Description | Document |
|------------------|----------|
| Any additional information | [View Document](#) |

### 5.1.3 Number of capability enhancement and development schemes –

1. **For competitive examinations**
2. **Career counselling**
3. **Soft skill development**
4. **Remedial coaching**
5. **Language lab**
6. **Bridge courses**
7. **Yoga and meditation**
8. **Personal Counselling**

**A. 7 or more of the above**

**B. Any 6 of the above**

**C. Any 5 of the above**

**D. Any 4 of the above**

**Response:** A. 7 or more of the above

| File Description | Document |
|---|---|
| Details of capability enhancement and development schemes | [View Document]() |
| Any additional information | [View Document]() |

**5.1.4 Average percentage of student benefited by guidance for competitive examinations and career counselling offered by the institution during the last five years**

**Response:** 65.1

5.1.4.1  Number of students benefited by guidance for competitive examinations and career counselling offered by the institution year-wise during the last five years

| 2018-19 | 2017-18 | 2016-17 | 2015-16 | 2014-15 |
|---|---|---|---|---|
| 932 | 1204 | 1042 | 723 | 1098 |

| File Description | Document |
|---|---|
| Number of students benefited by guidance for competitive examinations and career counselling during the last five years | [View Document]() |
| Any additional information | [View Document]() |

**5.1.5 Average percentage of students benefited by Vocational Education and Training (VET) during the last five years**

**Response:** 8.57

5.1.5.1 Number of students attending VET year-wise during the last five years

| 2018-19 | 2017-18 | 2016-17 | 2015-16 | 2014-15 |
|---------|---------|---------|---------|---------|
| 221 | 145 | 141 | 112 | 36 |

| File Description | Document |
|------------------|----------|
| Details of the students benifitted by VET | View Document |
| Any additional information | View Document |

**5.1.6 The institution has a transparent mechanism for timely redressal of student grievances including sexual harassment and ragging cases**

**Response:** Yes

| File Description | Document |
|------------------|----------|
| Minutes of the meetings of student redressal committee, prevention of sexual harassment committee and Anti Ragging committee | View Document |
| Details of student grievances including sexual harassment and ragging cases | View Document |
| Any additional information | View Document |

## 5.2 Student Progression

**5.2.1 Average percentage of placement of outgoing students during the last five years**

**Response:** 61.05

5.2.1.1 Number of outgoing students placed year-wise during the last five years

| 2018-19 | 2017-18 | 2016-17 | 2015-16 | 2014-15 |
|---------|---------|---------|---------|---------|
| 233 | 236 | 222 | 222 | 209 |

| File Description | Document |
|---|---|
| Self attested list of students placed | View Document |
| Details of student placement during the last five years | View Document |
| Any additional information | View Document |

**5.2.2 Percentage of student progression to higher education (previous graduating batch)**

**Response:** 7.51

5.2.2.1 Number of outgoing students progressing to higher education

Response: 29

| File Description | Document |
|---|---|
| Upload supporting data for student/alumni | View Document |
| Details of student progression to higher education | View Document |
| Any additional information | View Document |

**5.2.3 Average percentage of students qualifying in State/ National/ International level examinations during the last five years (eg: NET/ SLET/ GATE/ GMAT/ CAT/ GRE/ TOEFL/ Civil Services/State government examinations)**

**Response:** 98.4

5.2.3.1 Number of students qualifying in state/ national/ international level examinations (eg: NET/ SLET/ GATE/ GMAT/ CAT/ GRE/ TOEFL/ Civil services/ State government examinations) year-wise during the last five years

| 2018-19 | 2017-18 | 2016-17 | 2015-16 | 2014-15 |
|---|---|---|---|---|
| 64 | 41 | 38 | 32 | 30 |

5.2.3.2 Number of students who have appeared for the exams year-wise during the last five years

| 2018-19 | 2017-18 | 2016-17 | 2015-16 | 2014-15 |
|---|---|---|---|---|
| 66 | 42 | 39 | 32 | 30 |

| File Description | Document |
|---|---|
| Upload supporting data for the same | [View Document](#) |
| Number of students qualifying in state/ national/ international level examinations during the last five years | [View Document](#) |

## 5.3 Student Participation and Activities

**5.3.1 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) during the last five years.**

**Response:** 7

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

| 2018-19 | 2017-18 | 2016-17 | 2015-16 | 2014-15 |
|---|---|---|---|---|
| 1 | 2 | 2 | 2 | 0 |

| File Description | Document |
|---|---|
| Number of awards/medals for outstanding performance in sports/cultural activities at national/international level during the last five years | [View Document](#) |
| e-copies of award letters and certificates | [View Document](#) |
| Any additional information | [View Document](#) |

**5.3.2 Presence of an active Student Council & representation of students on academic & administrative bodies/committees of the institution**

**Response:**

The Student Council consists of third year students. The Council has four core posts for the election: General Secretary (GS), Sports Secretary (SS), Cultural Secretary (CS), and the Ladies Representative (LR). The interested candidates fill the nomination forms in the prescribed format and submit it along with a copy of the mark sheet. After scrutiny, the nomination list is displayed on the notice board. Election for these candidates is conducted two days after the display of the list. Counting of the votes is done after successful and fair voting, in the presence of the Class representatives, Faculty in Charge of the Student Council, the Former Student Council and the Heads of the Departments.

The Election process is first conducted for the posts of Ladies Representative, Sports and Cultural Secretary. The Election of the General Secretary follows this. The eligibility criteria for standing in elections for the various posts are intimated well in advance to the entire student community.

**GS:** The General Secretary's job is most time consuming and important one as s/he is the one who binds people from different branches together and makes them work as one team. General Secretary acts as the team leader possessing all the qualities a leader should have. As mentioned there are various distributed domains each has a head and a deputy.

**LR:** S/he helps in organizing the activities for girls & motivates them to participate in the events conducted in the institute. Also sees to it that all grievances and suggestion put forth by the female students is properly represented in front of the management.

**SS:** The sports secretary, along with the faculty coordinator, organizes mock tournaments; practice sessions at institute level and coordinate participation of our students for sports events.

**CS**: The cultural secretary with the help of faculty coordinator organizes various cultural activities & competitions such as 'FACES' and 'ETAMAX' the annual cultural events, 'Teacher's day' and 'MARATHI MANDAL', Independence day, Republic Day, Felicitation and Convocation Programs.

**GS and LR are also part of College Development committee.**

Students of our institute belong to various institute level clubs and organize activities like Intercollegiate debates (SAMVAAD), TEDx FCRIT and participate in MUNs. A very active editorial body also develops the bi annual college Enewsletter.

**Magazine secretary:** The magazine team under the leadership of magazine secretary publishes a multilingual college magazine 'MANTHAN' with various departmental newsletters. Collecting the material, editing, designing and publishing are carried out by students for magazine.

**Students' role in Academic and Administrative bodies:**

**Departmental Advisory Board:**

Students are part of departmental advisory board where they can place their feedback related to teaching-learning method, gap identification syllabus, academics and infrastructure

**Departmental Associations**:

Students are members of departmental associations professional bodies like ETSA,MESA, CSI, EESA,SAE,ISHRAE.

**Training and Placement committee**

The student representatives help Training & Placement Officer to organize various placement activities.We have student participation in Agnel Robotics Club(ARC)

| File Description | Document |
|---|---|
| Any additional information | [View Document](#) |
| Link for Additional Information | [View Document](#) |

**5.3.3 Average number of sports and cultural activities/ competitions organised at the institution level per year**

**Response:** 32.2

5.3.3.1 Number of sports and cultural activities / competitions organised at the institution level year-wise during the last five years

| 2018-19 | 2017-18 | 2016-17 | 2015-16 | 2014-15 |
|---|---|---|---|---|
| 32 | 32 | 30 | 31 | 36 |

| File Description | Document |
|---|---|
| Report of the event | [View Document](#) |
| Number of sports and cultural activities / competitions organised per year | [View Document](#) |

## 5.4 Alumni Engagement

**5.4.1 The Alumni Association/Chapters (registered and functional) contributes significantly to the development of the institution through financial and non financial means during the last five years**

**Response:**

The concept of alumni association evolved with the aim of building a bridge between college life and professional life, for achieving the goal of industry -institute interaction. This caused the formation of Alumni Association @ Fr. CRIT ALUMNI ASSOCIATION (FRAMES). which was registered under society registration act 1860 on 9th July 2008. The Alumni are a proactive support to the institution. FRAMES contributes largely in various academic bodies, student support as well as in the mobilization of resources – both financial and non-financial.

Been an integral part of the Development Committee, it significantly contributes to the development of the institute in the ways listed below:

- **Advisory Board**: Contribution of alumni association have played an important role in building the credibility of our institute. The institute involves the alumni in its educational and research activities, whenever possible, by inviting them to participate on its advisory boards, for taking

expert lectures, as guest speakers, for assistance in placement related activities etc.

- **Guest Lectures**: Various guest lectures conducted by our Alumni students for the current students, gives an insight of the outside industrial world. The modes of lectures would be both online and physical presence.
- **ICNTE Contribution:** Association sponsors prize for sports activities and also for technical events during college fests. Besides this association sponsors Young Researcher Award during International conference ICNTE organized by institute. Also arranges placement related talk by eminent personalities.

FRAMES organizes annual general body meeting and alumni meet every year in the first week of January. The Benefits of Alumni Meet are:

- Placement Assistance
- Industrial visits Assistance
- Higher studies Assistance for M.S and Ph. D programs in India and abroad.
- Donation of equipment/books to the institute
- Alma Connect

Fr. C. Rodrigues Institute of Technology (FCRIT), Alma Connect platform aims to enhance connectivity between the alumni and current students. This amazing initiative has resulted in 1605 members (includes Faculty, Alumni Students and current students) who have the facility to share their experiences and ideas. Alma Connect also has the option of providing the location of each member thus leaving no Agnelite alone. Job procurement has been further streamlined through the "Job referral" feature of this platform. Registration on the platform can be done using https://fcrit.almaconnect.com/

- Achievements

Many Alumni are working for companies like Amazon, Siemens, TCS, Infosys, Ingram and many more. Few alumni students are Entrepreneurs. Alumni who are working in different organizations share their professional experience with the students enhancing teaching learning process which helps students for a transition from campus to corporate. Been part of the departmental advisory board**,** they have active participation in the development activities of the department. They suggest changes in the course content and new courses to be introduced in various programmes. The institute takes regular feedback from alumni in various issues which help in overall development of the students. Sharing their professional experience makes students aware of recent trends/ technologies and tools used in the Industry.

| File Description | Document |
| --- | --- |
| Any additional information | [View Document](#) |
| Link for Additional Information | [View Document](#) |

**5.4.2 Alumni contribution during the last five years(INR in Lakhs)**
**? 5 Lakhs**

**4 Lakhs - 5 Lakhs**

**3 Lakhs - 4 Lakhs**

**1 Lakh - 3 Lakhs**

**Response:** <1 Lakh

| File Description | Document |
|---|---|
| Any additional information | View Document |
| Alumni association audited statements | View Document |

**5.4.3 Number of Alumni Association / Chapters  meetings held during the last five years**

**Response:** 17

5.4.3.1 Number of Alumni Association /Chapters meetings held year-wise during the last five years

| 2018-19 | 2017-18 | 2016-17 | 2015-16 | 2014-15 |
|---|---|---|---|---|
| 4 | 4 | 3 | 3 | 3 |

| File Description | Document |
|---|---|
| Number of Alumni Association / Chapters meetings conducted during the last five years | View Document |
| Any additional information | View Document |
| Report of the event | View Document |

# Criterion 6 - Governance, Leadership and Management

## 6.1 Institutional Vision and Leadership

**6.1.1 The governance of the institution is reflective of an effective leadership in tune with the vision and mission of the institution**

**Response:**

**Vision and Mission of the Institute:**

**Vision**

To evolve and flourish as a progressive centre for modern technical education, stirring creativity in every student leading to self-sustainable professionals, through holistic development; nurtured by strength and legitimate pride of Indian values and ethics.

**Mission**

- To provide industry oriented quality education.
- To provide holistic environment for overall personal development.
- To foster relationship with other institute of repute, alumni and industries.

The Institute vision and mission clearly defines that it works towards the overall progress of student by enhancing the creativity and critical thinking which helps them to understand the societal needs and work towards sustainable solution. The institute works under well-defined administrative structure. The governing council of the institute has ultimate authority and governing council guides in achieving the vision and mission of the institute. The Principal initiates new policy framework for better governance. The draft policy framework is discussed with MD and placed in governing council meeting for the approval. The governing council may approve it or suggest some changes. Governing council may also suggest some initiatives which are converted into policy framework.

The Principal is the leader of administrative system of the institution, who with the approval of governing council may create various posts for effective administration of the institute. Apart from the heads of department few posts are created at the institute level such as the Dean of academics, the Dean of student affairs, the Dean of research and development, the Dean of post-graduation studies, the Dean of faculty, Faculty in charge of Training and Placement and Controller of Examination. The Principal conducts regular meetings with HODs and Deans to discuss the smooth functioning of academics, research activities in college, development of students and faculty etc. The Principal in co-ordination with Deans and HODs ensures effective implementation of academic activities.

For the effective implementation of various initiatives following committees are established,

- **IQAC:** Quality assurance at the institute level.
- **CDC:** Planning and monitoring of various activities.
- **DAB:** Policy initiatives, its planning and implementation of OBE.
- **DWC/DPC:** Any new initiatives and its policy frame work at the departmental level.
- **DQAC:** Academic quality assurance at the departmental level.

- **IAB:** Interaction with industry representative and feedback from them.

The broader framework is provided by the institute after the approval taken from governing council. All the administrators will devise process and practices within the framework provided to meet the institute's vision and mission.

Various coordinators are appointed at institute/department level such as,

Institute Level Coordinators are as follows,

- **Examination Cell Coordinator:** Assisting in conduction, assessment and result declaration.
- **Alumni Coordinator:** Coordinating and organizing alumni meet.
- **Techno-Cultural Activities Coordinator:** Guiding students in planning and conducting technical/cultural activities

Department Level Coordinators are as follows,

- **Project Coordinator:** Planning and monitoring of project activities.
- **Placement Coordinator:** Assist faculty in charge for T&P activities.
- **Time-Table Coordinator:** Time table preparation considering the availability of faculty and venue.
- **Class Teachers:** Monitoring and guiding students for better performance.

| File Description | Document |
|---|---|
| Any additional information | View Document |
| Link for Additional Information | View Document |

### 6.1.2 The institution practices decentralization and participative management

**Response:**

The Institute practices decentralization and participative management culture. The Principal, Deans, HODs, and staff members are involved in defining policies, framing guidelines and rules/regulations pertaining to various activities of institute. All the departments have authority to take decision on academic matters such as timetable, subject allocation, Industrial visit, guest lectures from alumni, Internships, conducting workshops, etc. The HODs plan and execute academic activities of their programs and assign specific responsibilities to individuals or committees as required.

The institute conducts various activities, out of which one demonstrative case study is the Biennial International Conference on Nascent Technologies in Engineering (ICNTE). The administrative set up of ICNTE is an example for decentralization and participative management. For ICNTE, the core committee consists of Principal, Conference Chair, Conference Cochairs and HODs of all the departments as Track Chairs. The subcommittees are appointed a year early, which are as below:

- Publicity

- Financial and Technical Sponsorship

- Technical Program

- Accounts

- Venue

- Registration and Secretarial Assistance

- Hospitality

- Awards

- IEEE Correspondence and Publication

The ICNTE web portal has been created to facilitate decentralization and effective participative management by all the committees. The web portal provides administrator (Conference chair) login and track administrator (HODs) login who in turn decentralize the entire work of the conference.

The publicity committee sends the conference brochure to various Institutes with an email that explains paper submission process in the web portal. Thus, the researchers can submit their papers through their respective login and can monitor the status of their papers until the final decision.

The Financial and Technical Sponsorship committee independently makes use of information displayed on the website to get financial and technical sponsorships.

The Technical Program committee (TPC) sends the emails to the prospective reviewers asks them to create logins in the web portal. The entire database of the submitted papers and reviewers is created in the web portal. After a certain date, TPC assigns papers to the appropriate reviewers. Once the review process is over, the TPC members convey decisions to the authors and make sure that the authors, whose papers are accepted, resubmit papers after incorporating reviewers' suggestions. Thus, a new database of the authors whose papers are accepted for the conference is created.

The accounts committee accesses the above database independently after a certain date. This committee contact authors and ensure the payment of the Registration fee through the online portal that can be accessed through the website itself. Once the committee confirms receipt of the registration fee from the authors, a final list of the authors who would be presenting the papers in Conference is created.

Venue committee, Registration and Secretarial Assistance committee, and Hospitality committee access this database independently. The Venue committee prepares the venues as per the database. The Registration and Secretarial Assistance committee makes use of this database for registration on the day of conference, and accordingly preparing the participation certificates. Based on this database, the Hospitality committee arranges breakfast and lunch for the authors.

| File Description | Document |
|---|---|
| Any additional information | View Document |
| Link for Additional Information | View Document |

## 6.2 Strategy Development and Deployment

**6.2.1 Perspective/Strategic plan and Deployment documents are available in the institution**

**Response:**

Engineering education is of vital importance to people everywhere and is central to enhanced living standards, healthier lives, and more sustainable environments. To keep up with the fast pace of technological change, the FCRIT's graduates become lifelong learners who recognize the need to refine their skills and to "reinvent themselves" as needed to pursue new areas of research, design, and problem solving. FCRIT strives to establish as leading engineering institute to produce employable graduates through autonomous status. Strategy plan is prepared to become autonomous institute within five years to deliver quality education.

Autonomy helps to accelerate the attainment of above mentioned goals, which are in consistence with our vision. Therefore, institute has prepared a strategic plan to become autonomous, which involves various initiatives such as,

- Upgradation of faculty qualification and skills.
- Upgradation of infrastructure.
- Collaboration with various industries and reputed institutes.
- NBA Accreditation for all the UG Programs.
- NAAC accreditation of the Institute.
- Permanent affiliation of the institute with Mumbai University.
- Registration under UGC act.

Out of these few are either achieved or in process of completion. The permanent affiliation application is submitted in August 2019 as per existing provision of Maharashtra University Act. Application for autonomy will be submitted only after registration under section 2F and 12B of UGC act.

**Strategic plan:** To upgrade the qualification of Faculty members.

Institute has a policy of sponsoring the faculty members for ME/M.Tech and Ph.D. program to enhance their qualifications. Details of sponsorship for ME/M.Tech and Ph.D are shown in table below.

The sponsorship policy of the institute: Faculty members are sponsored for 2 years from each department for M.E/M.Tech as per the seniority and they have to enter into a mutual bond with the institute for 3 years of service after graduation. The care has been taken to avoid any shortage of faculty in the department by allowing only two to three faculty at a time for sponsorship. All faculty members are sponsored for masters with full salary during the sponsorship period and had to follow the rules in the bond, they executed, with the institute.

Faculty members are sponsored for Ph.D program with full salary and they have to enter into a mutual bond with the institute for 5 years of service after graduation. Two to three faculty members are sponsored, at a time, from each department for smooth functioning of the academic activities. Institute also supports those faculty members who are willing to do the post-doctoral work.

| No. of staff got Sponsorship for ME/M.Tech. | No. of staff completed ME Under Sponsorship | No. of staff got Sponsorship for PhD | No. of staff completed PhD Under Sponsorship |
|---|---|---|---|
| 55 | 46+7* | 31 | 10+4* |

*Left the institute.*

Presently all faculty members, except two senior most members, are ME/M.Tech/MS graduates and this plan is effectively implemented and continuing for Ph.D. program so that in due course of time majority of our faculty members will be Ph. D degree holders.

| File Description | Document |
|---|---|
| Any additional information | View Document |
| Strategic Plan and deployment documents on the website | View Document |

**6.2.2 Organizational structure of the institution including governing body, administrative setup, and functions of various bodies, service rules, procedures, recruitment, promotional policies as well as grievance redressal mechanism**

**Response:**

Strategy development is an important aspect and the same is developed through a strong administrative setup. Principal, Head of the Departments, Deans and Controller of Examination have adequate participation in making decisions and executing academic and administrative processes under their purview.

The Governing Council of the institute gives final approval to policies approved by CDC which are proposed by the resolutions passed in meetings of Principal, Deans and HODs. The proposed policies are either approved as it is or with some modifications. Sometimes the Governing Council administers implementation of some policies. Governing Council members' names and their affiliation are published on the web site www.fcrit.ac.in.

The general academic and administrative set up is headed by the Principal and take necessary actions in day to day activities of the institute in consultation with the HODs and Deans.

There are various bodies/committees to monitor the activities in the institute. They are

- ○ **Department wise committees/boards.**

- Department Working Committee
- Department Advisory Board
- Industrial Advisory Board
- Department Quality Assurance Cell

  ○ **General Academic committees**

- Library committee.
- Admission committee.
- Unfair means committee.
- Internal Quality Assurance Cell

  ○ Grievances redressal and Anti-ragging committees.

Department Working Committee monitor the routine functioning of the department.

The DAB consists of the representatives from all the stakeholders. The Institute takes the feedback and suggestions given by DAB in framing or modifying the policies.

Department has taken initiative to interact with the industry by forming Industrial Advisory Board (IAB). IAB helps the department to initiate activities related to latest industrial development and requirement.

Academic Audit of the programme is conducted every semester by Department Quality Assurance Cell (DQAC). It includes the verification of academic activities.

In addition to above mentioned administrative set up and committees, every department has in-charges/coordinators to different curricular, co-curricular and extracurricular activities.

They are

- Class teachers
- Time Table coordinator
- Project coordinator
- Exam cell coordinator.
- Coordinator for different professional student chapter/ association.
- Coordinator for FACES (Institute Sports and cultural festival).
- Coordinator for Eta-Max (Techno cultural festival).
- Alumni coordinator.

Library committee takes care of the matters related to purchase of new books, subscription to national and international journals and any problem regarding the regular functioning of Library.

The admission committee looks into the admission process of students to different programs as per the directives of the DTE who is the admission regulatory authority.

The institute has an unfair means committee constituted as per the directives of University of Mumbai and takes care of any unfair means activity reported during the examinations.

For maintaining the quality of education institute have Internal Quality Assurance Cell (IQAC). The structure of IQAC is as per NAAC proposed structure.

Three-member committee from IQAC will visit each department every year. IQAC will randomly check course audit and department audit documents.

Grievance redressal and Anti-ragging committee functions as per the regulatory body framework. So far no issues have been reported related to women harassment.

| File Description | Document |
|---|---|
| Any additional information | [View Document](#) |
| Link for Additional Information | [View Document](#) |

### 6.2.3 Implementation of e-governance in areas of operation

1. Planning and Development
2. Administration
3. Finance and Accounts
4. Student Admission and Support
5. Examination

**A. All 5 of the above**

**B. Any 4 of the above**

**C. Any 3 of the above**

**D. Any 2 of the above**

**Response:** A. All 5 of the above

| File Description | Document |
|---|---|
| Screen shots of user interfaces | [View Document](#) |
| ERP Document | [View Document](#) |
| Details of implementation of e-governance in areas of operation Planning and Development,Administration etc | [View Document](#) |
| Any additional information | [View Document](#) |

### 6.2.4 Effectiveness of various bodies/cells/committees is evident through minutes of meetings and

**implementation of their resolutions**

**Response:**

Various committees have been constituted to look into different aspects of the college administration, development and student and staff affairs. These committees meet periodically or whenever required, based upon the situation, for the smooth conduction of academic, co-curricular or extra-curricular activities. For the improvement in quality publications, it was decided in Deans and HOD's meeting with Principal that faculty members should publish their research articles in refereed journals/ reputed conferences like Conferences organized by IITs, NITs, Professional societies etc. This has motivated faculty members to publish their papers in good Journal/ Conferences which is evident from publications of faculty members in last two years.

Improvement in the quality of publication is evident from the following data as per decision taken in HODs meeting dated 26 September 2016.

It can be clearly seen that from 2016 onwards quality publications either in conference or reputed journals has been increasing

## Publication in Conferences

| Year | Conferences organized by professional bodies/ Premier institutes | Other Conferences |
|------|------|------|
| 2018 | 37 | 39 |
| 2017 | 30 | 92 |
| 2016 | 3 | 47 |
| 2015 | 5 | 58 |
| 2014 | 2 | 41 |

## Publications in Journal

| Year | Reputed Journals | Paid Journals |
|------|------|------|
| 2018 | 17 | 28 |
| 2017 | 11 | 29 |
| 2016 | 15 | 47 |
| 2015 | 6 | 79 |
| 2014 | 4 | 68 |

| File Description | Document |
|---|---|
| Any additional information | **View Document** |
| Link for Additional Information | **View Document** |

## 6.3 Faculty Empowerment Strategies

**6.3.1 The institution has effective welfare measures for teaching and non-teaching staff**

**Response:**

- Institute admission provided for staff members children in our school managed by trust with concession in fees from 25% to 100% based on cadre.
- Concession in fees for higher education is also given those who have taken admission as per norms set by government of Maharashtra in the institute managed by the trust.
- The institute has a policy of sponsoring faculty members for higher studies with full pay.
- Faculty members are given registration fee 5000/- and third-AC, to and fro rail-fare to attend the short-term training programs and conferences in India. However, full registration fee and one-way air-fare given to the faculty members traveling abroad for attending the conferences.
- All the staff members are covered in a Group Personal Accident policy (TATA AIG General Insurance Company Ltd., Policy No. GPA000677504). The policy covers accidental death (Rs. 1 lakh), permanent total/partial disability (Rs. 1 lakh), and medical expenses (up to Rs. 20,000/-)
- The gratuity is implemented under LIC scheme to the eligible staff members. In addition to gratuity an accidental death rider through LIC is under force. Under this rider, if such a staff member dies in an accident when he/she is in service; an additional amount of Rs. 10,000/- is paid to his/her family over and above the payable gratuity amount.
- The interest-free loans are given to the needy staff members. These loans are recovered through the convenient installments from their salary on monthly basis.
- A well-equipped medical health center with on-call doctor is available in the institute.
- Uniform is provided to the peons.
- Limited in-campus accommodation is provided to the staff members on concessional rents.
- To encourage and motivate faculty members to carry out research, management provides R&D fund of Rs. 2 Lakh to each department on yearly basis.
- Xmas party is arranged every year for staff members.
- Special leaves are given for post doctoral/ internship/ critical illness with full salary.
- Maternity Leave given to eligible candidate.
- As an incentive, the professional memberships/ Journal subscriptions of faculty members are financially supported up to Rs.7000/- for their outstanding contribution to the development of the department, such as publishing journal paper, filing patents, receiving the prestigious award, receiving research grant carrying out consultancy activity, and writing books.

| File Description | Document |
|---|---|
| Any additional information | **View Document** |

**6.3.2 Average percentage of teachers provided with financial support to attend conferences/workshops and towards membership fee of professional bodies during the last five years**

**Response:** 41.78

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

| 2018-19 | 2017-18 | 2016-17 | 2015-16 | 2014-15 |
|---------|---------|---------|---------|---------|
| 54      | 38      | 42      | 43      | 22      |

| File Description | Document |
|------------------|----------|
| Details of teachers provided with financial support to attend conferences,workshops etc during the last five years | [View Document](#) |
| Any additional information | [View Document](#) |

**6.3.3 Average number of professional development /administrative training programs organized by the institution for teaching and non teaching staff during the last five years**

**Response:** 8.6

6.3.3.1 Total number of professional development / administrative training programs organized by the Institution for teaching and non teaching staff year-wise during the last five years

| 2018-19 | 2017-18 | 2016-17 | 2015-16 | 2014-15 |
|---------|---------|---------|---------|---------|
| 10      | 14      | 8       | 6       | 5       |

| File Description | Document |
|------------------|----------|
| Details of professional development / administrative training programs organized by the Institution for teaching and non teaching staff | [View Document](#) |
| Any additional information | [View Document](#) |

**6.3.4 Average percentage of teachers attending professional development programs viz., Orientation Program, Refresher Course, Short Term Course, Faculty Development Program during the last five years**

**Response:** 60.91

6.3.4.1 Total number of teachers attending professional development programs, viz., Orientation Program, Refresher Course, Short Term Course, Faculty Development Programs year-wise during the last five years

| 2018-19 | 2017-18 | 2016-17 | 2015-16 | 2014-15 |
|---------|---------|---------|---------|---------|
| 77      | 64      | 47      | 61      | 42      |

| File Description | Document |
|---|---|
| Details of teachers attending professional development programs during the last five years | [View Document](#) |
| Any additional information | [View Document](#) |

**6.3.5 Institution has Performance Appraisal System for teaching and non-teaching staff**

**Response:**

Institute follows a well-defined and framed model of performance appraisal system namely Academic Performance Indicator (API) by UGC.

It is based on mainly three categories

**Category I: Teaching, learning, and evaluation related activities**

1. Lectures, seminars, tutorials, practicals, contact hours undertaken as percentage of lectures allocated
2. Lectures or other teaching duties in excess of the prescribed load
3. Preparation and imparting of knowledge/instructions as per curriculam: syllabus enrichment by providing additional resources to students
4. Use of participatory and innovative teaching-learning methodologies, updating of subject content, course improment etc.
5. Examination duties (Invigiltation, questiona paper setting, Evaluation/assessment of answer sheets) as per allotment.

**Category II: Co-curricular, extension and professional development activities**

1. Student related co-curricular, extension, and field based activities
2. Contribution to corporate life and management of the department and institution through participation in academic and administrative committees and responsibilites
3. Professional development activities

**Category III: Research and academic Contribution**

1. Research papers published in refereed journals, non-refreed but recognized and reputable journals and periodical, media having ISBN/ISSN numbers, full papers in conference proceedings.
2. Research publication, book and Book Chapter.
3. Ongoing and Completed Research projects and consultancies
4. Research Guidance
5. Training courses and conferences/seminar/workshop

Apart from above categories, the following other performance appraisal criteria based on students' performance and feedback is also considered.

i. Performance of Attendance of students

ii. Performance of Result

iii. Students Assessment based on overall effectiveness of teaching

All the above criteria are assessed by Head of Department and Principal based on the evidences provided and feedback collected from students. The copy of the same is given to Managing Director for further review.

| File Description | Document |
|---|---|
| Any additional information | [View Document](#) |

## 6.4 Financial Management and Resource Mobilization

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

**Response:**

Our trust, Agnel charities, is known for transparent and clean financial processes and systems. There is a well-known process for sanction of budget to expenditure. Our trust runs many institutions across India and each institution has its own Governing Council, College Development Committee as per the statutory requirements. In addition to these each campus has a local committee comprising of Managing Director, Management representatives and Institute heads. This committee plays a role in recommending the budget and expenditure to the Governing Council for approval. As institute follows the proper process for expenditure, wherein the bill/vouchers recommended by the head of the departments are approved by the Principal and Managing Director. All bills/vouchers verified by internal accounts staff on a routine basis. A proper record of all the expenses is maintained by the accounts department.

 An external auditor appointed by the trust executes the statutory audit. The statutory financial audit is conducted in two sessions, one in the month of December/January and second in the month of April for the remaining period. Finalization of the account is completed in May/June and audited statements are prepared in June/July duly signed by Managing Director, and chartered accountant. No major objections are found in the audit by the statutory auditors and minor audit suggestions are compiled as per the procedure.

**6.4.2 Funds / Grants received from non-government bodies, individuals, Philanthropists during the last five years (not covered in Criterion III) (INR in Lakhs)**

**Response:** 26.64

6.4.2.1 Total Grants received from non-government bodies, individuals, philanthropists year-wise during the last five years (INR in Lakhs)

| 2018-19 | 2017-18 | 2016-17 | 2015-16 | 2014-15 |
|---------|---------|---------|---------|---------|
| 9.14    | 4.09    | 3.87    | 2.28    | 7.26    |

| File Description | Document |
|------------------|----------|
| Details of Funds / Grants received from non-government bodies during the last five years | [View Document](#) |
| Any additional information | [View Document](#) |
| Annual statements of accounts | [View Document](#) |

**6.4.3 Institutional strategies for mobilisation of funds and the optimal utilisation of resources**

**Response:**

The college has a well-formulated financial policy which ensures effective mobilization and optimal utilization of finances for academic, administrative and development purpose. Institute has made the necessary provision for efficient and effective use of available funds for each academic year.

The primary fund required for the development of the institute along with the day to day expenditures comes from tuition fees and development fees paid by the students. Other funds for the institute is generated through industrial consultation, research fund from government organization and universities. However, when there is a shortage of funds or requirements of building physical infrastructure, Agnel Charities' trust supports the institute. The Principal and the Head of Departments discuss the requirement and decide the priorities while allocating available financial resources for various purposes. The recommendations made by the head of the institute are normally approved by the Managing Director and local committee, which is submitted to the governing council for final approval.

In addition to the above mentioned resources for various activities undertaken by students are also supported by sponsorships through well-wishers, professional societies, industries, etc.

## 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**

**Response:**

Department Working Committee (DWC), Department Quality Assurance Cell (DQAC) and Institute Quality Assurance Cell (Reconstituted as Internal Quality Assurance Cell as per NAAC guidelines) (IQAC) are formed to institutionalize the quality assurance strategies and processes. Two such practices are explained below.

**Practice 1 - Course Audit**

The objective of Course Audit is to ensure the quality of academic content and delivery in teaching learning process.

To enhance quality of teaching-learning process, IQAC has implemented Academic course audit and laid down the guidelines for evaluation of the course for the audit.

For the course audit, each faculty member prepares a course file which includes documents related to curriculum, teaching plan, course outcome assessment etc. to bring effectiveness in planning and delivery of course. Faculty members themselves fill pre-approved audit form, based on planning and delivery of course which in turn is verified by DWC at the end of every semester.

On the basis of remarks by Audit members of DWC, faculty takes the corrective measures immediately or during next cycle as the case may be.

Subsequently DQAC, wherein one external expert from the same program is part of committee, conducts course audit as part of Academic audit to verify the processes implemented for effective teaching learning.

The audit helps in bringing seriousness among faculty members in planning and timely completion of syllabus. It also encourages faculty members to use various reference books and research papers due to documentation process. Various lecture delivery mechanisms such as flip classroom, use of smart boards, seminar, presentation, field visit etc. have been effectively incorporated by the faculty members in their teaching. The audit motivates faculty member to take content beyond syllabus. The course audit team members communicate the necessary improvements in the course delivery, if required.

**Practice 2 - Ensuring quality of question papers**

The objective of this practice is to improve quality of question papers. Quality of question paper is monitored by the Department Working Committee (DWC).

Individual faculty members set the question papers for the subjects they are teaching based on the common guidelines given. The papers are submitted to DWC through the Module coordinator to assess quality of question paper. The quality of question paper is checked on the basis of,

1. Framing of questions according to CO.
2. Use of Blooms Taxonomy for framing the questions.
3. Framing challenging/new questions.

Question paper quality for the above mentioned points are checked and commented. The respective staff members then submit the revised and original question paper to the module coordinator. Copies of both the question papers are kept in the record.

This process helps in improving quality of question papers.

Thus IQAC ensures implementation of uniform policy across all departments. This helps in institutionalizing processes.

| File Description | Document |
|---|---|
| Any additional information | [View Document](#) |

### 6.5.2 The institution reviews its teaching learning process, structures & methodologies of operations and learning outcomes at periodic intervals through IQAC set up as per norms

**Response:**

The institute continuously reviews teaching learning processes and brings the reforms as and when required. Two such reforms and its review process are mentioned below.

**Example 1 - Review of Course Teaching Plan**

The objective of implementing course teaching plan is to ensure effective completion of the syllabus in regular manner within the prescribed time frame.

Prior to 2016, the Course teaching plan was prepared by respective faculty member in the form of Bar chart, in which he/she has to mark the content of the syllabus (Module wise) for each week. Faculty had to update the status of completion every week, which was verified by HOD through student input also. However, in Bar chart system it was observed that there is a drawback of not having provision of lecture wise teaching plan and also number of lectures required for each module.

To overcome this drawback, the process was reformed and Lecture-wise Teaching Plan was introduced from the first half of 2017.

In the current system, the faculty member meticulously plans the content to be taken during each lecture, as per academic calendar. The academic calendar is provided to faculty member one week prior to the commencement of the semester. The teaching plan includes information related to planned date, content to be covered, references, methodology, CO mapping for each lecture. The teaching plan is updated every week, which is simultaneously verified by Head of the department through student input.

This document becomes the base for refining and minimizing the deviation (if any), in terms of content delivery and duration, for preparation of teaching plan for the next cycle. It helps faculty members to keep record of references used lecture wise. It also helps in identifying proper mode of delivery mechanism for a particular topic. The present system assures timely completion of syllabus and helps in improving teaching learning process.

**Example 2 - Learning outcome assessment and monitoring**

From the beginning the focus was on continuous assessment wherein regular tutorial and weekly assignment tests were conducted.

The institute implemented outcome based education from 2014-15 across all departments.

In the beginning, writing proper course outcome statement was challenging, but in due course of time, faculty members became comfortable to write proper course outcome by following certain processes. To assess course outcome, proper mechanism has been established in terms of setting question paper, scheduling the assignment test, selecting the assessment tools and preparing rubrics for evaluation.

The evaluation of the course outcome was done manually by each faculty member, which was a bit time consuming and non uniform across the teachers. To bring the uniformaty in attainment calculations and to save time, a comprehensive package was developed and implemented in 2015, which was named as APMS i.e. Academic Performance Monitoring System. The system generates various reports such as course and program outcome attainment summary, on the basis of marks entered, course exit surveys.

The present system assures effective implementation of outcome based education.

| File Description | Document |
|---|---|
| Any additional information | [View Document](#) |

**6.5.3 Average number of quality initiatives by IQAC for promoting quality culture per year**

**Response:** 1

6.5.3.1 Number of quality initiatives by IQAC for promoting quality year-wise for the last five years

| 2018-19 | 2017-18 | 2016-17 | 2015-16 | 2014-15 |
|---|---|---|---|---|
| 0 | 3 | 2 | 0 | 0 |

| File Description | Document |
|---|---|
| Number of quality initiatives by IQAC per year for promoting quality culture | [View Document](#) |
| Any additional information | [View Document](#) |
| IQAC link | [View Document](#) |

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

1. Regular meeting of Internal Quality Assurance Cell (IQAC); timely submission of Annual Quality Assurance Report (AQAR) to NAAC; Feedback collected, analysed and used for improvements
2. Academic Administrative Audit (AAA) and initiation of follow up action
3. Participation in NIRF
4. ISO Certification
5. NBA or any other quality audit

**A. Any 4 of the above**

**B. Any 3 of the above**

**C. Any 2 of the above**

**D. Any 1 of the above**

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

| File Description | Document |
|---|---|
| e-copies of the accreditations and certifications | [View Document](#) |
| Details of Quality assurance initiatives of the institution | [View Document](#) |
| Any additional information | [View Document](#) |
| Annual reports of institution | [View Document](#) |

**6.5.5 Incremental improvements made during the preceding five years** *(in case of first cycle)* **Post accreditation quality initiatives** *(second and subsequent cycles)*

**Response:**

Subsequent to NBA Accreditation in 2012, a SWOT analysis was carried out based on which the institute has initiated various quality enhancement measures in academic and administrative domain to strengthen teaching learning process. The initiatives are described below.

**Upgradation of existing infrastructure**

The institute administration and management felt the need for adding more space to accommodate classrooms and labs. The construction work started for new building in 2012. The building became operational in January 2017. Spacious classrooms and labs are provided in the newly constructed Annex building. For an improved teaching learning experience each classroom is provided with LCD projectors connected to a PC along with a motorized screen. To provide better ambience to staff members, separate cabins equipped with personal computers and internet facility is made avilable. CCTVs are provided to monitor premises. Lab infrastructure has been upgraded by purchasing new laboratory setups and equipments.

The examination cell works independently and coordinates all examination related activities. The software was developed in-house by students of IT department and implemented from 2015 for generating mark sheets of CBGS (Credit based grading system) and CBCS (Choice based credit system). Security features were introduced in the student mark sheets from FH18.

**Leveraging Technology as a tool for aid in administration**

APMS system was developed in 2015 by staff members of Computer department for measuring course outcome, attendance monitoring, taking various feedback etc. This helped in performance monitoring of students. The system ensured timely completion of academic activities and it helped for generating various reports such as outcome attainment summary, feedback summary, exit survey summary etc.

Koha-Library management system was developed in 2016 to maintain and issue library books. The system was customised in-house by faculty members of IT department.

LMS system (Moodle) was introduced in 2018.

The institute has not only progressed in academic domain but it also developed certain systems in administrative domain.

Biometric attendance was introduced in October 2017. All staff members are provided with official email ids in 2016. From November, 2018, Salary slips are being sent to email id of respective staff members.

**Advisory Support System**

To streamline academic activities, institute implemented advisory support system wherein various comities at department and institute level were formed.

DWC was formed in 2015 to formulate processes and policies for streamlining the working of the department. The DWC comprises of senior faculty members of the department which is chaired by HOD.

The DAB was also formed in 2015 to involve various stakeholders in formulating vision, mission, program outcomes of the department. The different stake holders are faculty members, expert from academia and industry, parent, alumni and student which is chaired by HOD.

All the Departments have taken initiative to interact with the industry by forming Industry Advisory Board (IAB) in 2017 which consist of senior experts from reputed industries. IAB helps the department to initiate activities related to latest industrial development and requirement.

To ensure the quality of teaching and learning, audit mechanism and structure in the form of IQAC and DQAC were formed in 2017. IQAC has proposed Academic audit and laid down the guidelines for evaluation of the same. Audit is conducted every semester in preapproved format through Department Quality Assurance Cell (DQAC) and once in every year by Institute Quality Assurance Cell (IQAC).

IQAC was reconstituted in 2019 as per NAAC guidelines.

These are some of reforms initiated in the last five years.

# Criterion 7 - Institutional Values and Best Practices

## 7.1 Institutional Values and Social Responsibilities

**7.1.1 Number of gender equity promotion programs organized by the institution during the last five years**

**Response:** 9

7.1.1.1 Number of gender equity promotion programs organized by the institution year-wise during the last five years

| 2018-19 | 2017-18 | 2016-17 | 2015-16 | 2014-15 |
|---------|---------|---------|---------|---------|
| 2 | 3 | 3 | 1 | 0 |

| File Description | Document |
|------------------|----------|
| Report of the event | [View Document](#) |
| List of gender equity promotion programs organized by the institution | [View Document](#) |
| Any additional information | [View Document](#) |

**7.1.2**

   1.**Institution shows gender sensitivity in providing facilities such as:**
        1.**Safety and Security**
        2.**Counselling**
        3.**Common Room**

**Response:**

**Gender Sensitivity**

At Fr. C. Rodrigues Institute of Technology both the genders enjoy equal freedom to express their thoughts and to exercise their rights.

1. Safety and Security

We have an alert and vigilant security staff to maintain the security in the campus. During the college events the faculty members take the responsibility of seeing to the security of the girl students by constantly monitoring the events.

2. Counselling

Counsellor is available to take care of issues common to this age group and the class-teachers and other teachers act as mentors to their students. Mentors are provided for both who take care of their personal and academic problems. We make no discrimination in seating arrangement of boys and girls and there is no special dress code for either of the genders. However they are mentored to behave decently and dress up as per the need of the academic regulation.

3. Common Room

While the boys and the girls enjoy the same canteen facility and other public spaces the college has been sensitive enough to the personal needs of the two genders and provides them separate common rooms, two in number, each of 80sq.m. size, on the 2nd and 3rd floor of the annexe building. In addition two rest rooms, one each for boys and girls on each of the floors of both the buildings are available.

Number of girls opting for engineering at our institute reflects that we are gender sensitive and understand the concerns of both the genders. Our behaviour and policies are egalitarian and equivocal, when we talk of our male and female students.

The average ratio of female and male students for the last 5 yrs. is 2:5. The selection of the student representatives at the institute and department level councils/associations is unbiased.

Around 67% of the total employed faculty is female. The institute supports the career progression and development equally for female and male staff. The ratio of female and male faculty members for the last five years is 2.2 : 1. It provides women and men with equal opportunities to grow in their leadership capabilities, build professional skills and participate in important administrative roles in the institute. The Women Grievance Redressal Cell has been formed to address grievances of female employees as well as female students. In the past not a single case has been registered, indicating a secured and safe environment for women in the institute.

**7.1.3 Alternate Energy initiatives such as:**

    **1. Percentage of annual power requirement of the Institution met by the renewable energy sources**

**Response:** 12.35

7.1.3.1 Annual power requirement met by the renewable energy sources (in KWH)

Response: 22681

7.1.3.2 Total annual power requirement (in KWH)

Response: 183683

| File Description | Document |
|---|---|
| Details of power requirement of the Institution met by renewable energy sources | View Document |
| Any additional information | View Document |

**7.1.4 Percentage of annual lighting power requirements met through LED bulbs**

**Response:** 14.05

7.1.4.1 Annual lighting power requirement met through LED bulbs (in KWH)

Response: 15.46

7.1.4.2 Annual lighting power requirement (in KWH)

Response: 110.06

| File Description | Document |
|---|---|
| Details of lighting power requirements met through LED bulbs | View Document |

**7.1.5 Waste Management steps including:**
- **Solid waste management**
- **Liquid waste management**
- **E-waste  management**

**Response:**

**Solid waste management:**

The solid wastes in the campus are disposed in a systematic way. Dustbins are provided in the college at respective places to collect the solid waste.

The cleaning staff collects the waste from the bins on a regular basis at 9.00 to 11am and after 5:00 pm every day. All these solid wastes are properly disposed by the workers by dumping them into the Navi Mumbai Municipal Corporation (NMMC) waste collection vehicle.

**Liquid waste management:**     Liquid waste from the points of generation like the canteen, Bal-Bhavan, staff-quarters and the toilets in the complex is segregated and let out through common drainage facility to a waste water tank at the corner in the campus.

The details are as follows:

There are total 4 plants through which water waste is converted into clean water. This clean water is

mainly used for gardening and flushing in the washrooms.

1. Aerator  Plant (Since 1984)

A water purifier plant is located behind the main building. Water aeration is often required in water bodies that suffer from hypoxic or anoroxic conditions, often caused by upstream human activities such as sewage discharges, agricultural run-off, or over-baiting a fishing lake. Aeration can be achieved through the infusion of air into the bottom of the lake, lagoon or pond or by surface agitation from a fountain or spray-like device to allow for oxygen exchange at the surface and the release of gasses such as carbon dioxide, methane or hydrogen sulphide.

Capacity of this tank is 50,000 litre.

2. Behind Boys' Hostel (Up flow filter-Since 1999)

There is a huge underground tank, where liquid waste from Bal Bhavan, boys' hostel and staff quarter is being collected and then filtered for reuse (gardening).

3. Behind Engineering main building (STP- sewage treatment plant-Since 2008)

Sewage treatment is the process of removing contaminants from municipal wastewater, containing mainly household sewage plus some industrial wastewater. Physical, chemical, and biological processes are used to remove contaminants and produce treated wastewater (or treated effluent) that is safe enough for release into the environment. A by-product of sewage treatment is a semi-solid waste or slurry, called sewage sludge. The sludge has to undergo further treatment before being suitable for disposal or application to land.

There is a proper procedure for converting dirty water to clean water for reuse which is done in STP. The chemicals used are alum and boric acid powder. The water sample was sent for testing in the laboratory and the result showed that the purified water is potable. The purified water is used for gardening. Capacity of this tank is 1,50,000 litre.

**E-waste management:**

Due to frequent advancement in the technology various electronic equipment/ products/gadgets tend to become obsolete and hence there is a need of E-waste management. We have adopted an alternative approach to reduce the volume of E-waste generation by adopting the following procedures.

E-waste management has been started from the year 2018-19, wherein all the E-waste is collected and handed over to the recycling unit Eco-Rox in Turbhe, which sends it for scientific recycling. Around 225kgs. of e-waste was collected this year. A certificate of appreciation was awarded to college by the company for the same.

| File Description | Document |
|---|---|
| Any additional information | [View Document](#) |

## 7.1.6 Rain water harvesting structures and utilization in the campus

**Response:**

It is a known fact to all of us that water is the basis of all living beings on the earth. Especially countries like India depend on rains and snowfall for its agriculture. Unfortunately, during heavy rains most of the water is being wasted to rivers and seas. Therefore, rainwater harvesting is becoming a necessary step which everyone should practice. When there is a downpour rain water is saved in natural and artificial tanks and is used for future purposes. This water is also used to maintain a green and healthy garden with lawn and other beautiful flowers. Rain water harvesting system has recently been installed in the Annexe building of FCRIT and the college is now able to store and recycle this water. This project is operational since 2017.

Rain water is being collected in a huge under-ground tank, which is used in the washrooms. Capacity 30,000 litre.

| File Description | Document |
|---|---|
| Any additional information | [View Document](#) |

## 7.1.7 Green Practices
- **Students, staff using**
a) **Bicycles**
b) **Public Transport**
c) **Pedestrian friendly roads**
- **Plastic-free campus**
- **Paperless office**
- **Green landscaping with trees and plants**

**Response:**

a) Bicycles:

A few staff members and some students do use bicycles. There are a number of students as well as staff members who stay within 5 kilometre of the college premises and hence are comfortable using bicycles, though most of them use the walkways. Mumbai being a metropolitan city, has an efficient public transport system and pavements. There is also a dedicated cycling track next to the college premise.

b) Public Transport

The college is well connected with both rail and road transport. The main bus depot of Vashi is within half a kilometre and the local railway station is at 2 kms from the college premise. Most of the students and staff use either one or both of these two modes for daily commute. The students and staff staying at far-off places, mostly make use of the public utilities, because they are quite well developed in Mumbai and Navi-

Mumbai. The location of the college is an added advantage as the main depot, auto-rickshaw stand and the railway station are pretty much accessible. To encourage the use of pollution free vehicles, a demonstration of E-vehicle was done during the college fest-ETAMAX.

c) Pedestrian Friendly Roads

The college is well connected to the main bus depot and nearby places with well laid, broad pavements which are well maintained. The pavements can be accessed from both the front and back gates of the college. The pavements extend to the inside of the campus on both the sides of the lanes.

Plastic Free Campus

The college is creating awareness about the evils of plastic and moving towards a plastic-free campus. The canteen has stopped serving meals or packing takeaways in plastic pouches, boxes. They have also stopped providing plastic plates, spoons, cups. Staff and students have been trained to bring their own containers for takeaway food. Since the Maharashtra government has banned plastic all over the state, the college dutifully obliges and participates in preventing the plastic pollution.

Paperless Office

The institute is aiming to reduce the usage of paper by providing the students and faculty members login-ids to utilise various e-facilities. The Academic Performance Monitoring System allows teachers to login and fill attendance, practical and test marks directly in the web portal. A Learning Management System encourages teachers to post their lectures, notes, assignments and tests online thus considerably cutting down on paper usage. There is a biometric device installed, where in the attendance of the staff and the faculty is recorded electronically. Salary slip and feedback is also electronically generated and is available on the emails and college portal respectively.

Green Landscaping

The institute has a rich green cover. The new Annexe building has landscaping throughout the façade. There are coconut trees all along the inside walk way and small intricate lawns and flower beds in front of the annexe building renders a colourful view to the campus.

| File Description | Document |
|---|---|
| Any additional information | [View Document](#) |
| Link for Additional Information | [View Document](#) |

**7.1.8 Average percentage expenditure on green initiatives and waste management excluding salary component during the last five years**

**Response:** 4.05

7.1.8.1 Total expenditure on green initiatives and waste management excluding salary component year-wise during the last five years(INR in Lakhs)

| 2018-19 | 2017-18 | 2016-17 | 2015-16 | 2014-15 |
|---------|---------|---------|---------|---------|
| 1.71443 | 4.51304 | 61.21232 | 0.33276 | 0.040664 |

| File Description | Document |
|------------------|----------|
| Green audit report | View Document |
| Details of expenditure on green initiatives and waste management during the last five years | View Document |
| Any additional information | View Document |

**7.1.9 Differently abled (Divyangjan) Friendliness Resources available in the institution:**

1. **Physical facilities**
2. **Provision for lift**
3. **Ramp / Rails**
4. **Braille Software/facilities**
5. **Rest Rooms**
6. **Scribes for examination**
7. **Special skill development for differently abled students**
8. **Any other similar facility (Specify)**

**A. 7 and more of the above**

**B. At least 6 of the above**

**C. At least 4 of the above**

**D. At least 2 of the above**

**Response:** B. At least 6 of the above

| File Description | Document |
|------------------|----------|
| Resources available in the institution for Divyangjan | View Document |
| Any additional information | View Document |
| link to photos and videos of facilities for Divyangjan | View Document |

**7.1.10 Number of Specific initiatives to address locational advantages and disadvantages during the last five years**

**Response:** 26

7.1.10.1 Number of specific initiatives to address locational advantages and disadvantages year-wise during the last five years

| 2018-19 | 2017-18 | 2016-17 | 2015-16 | 2014-15 |
|---------|---------|---------|---------|---------|
| 06 | 05 | 05 | 05 | 05 |

| File Description | Document |
|------------------|----------|
| Number of Specific initiatives to address locational advantages and disadvantages | [View Document](#) |
| Any additional information | [View Document](#) |

**7.1.11 Number of initiatives taken to engage with and contribute to local community during the last five years (Not addressed elsewhere)**

**Response:** 6

7.1.11.1 Number of initiatives taken to engage with and contribute to local community year-wise during the last five years

| 2018-19 | 2017-18 | 2016-17 | 2015-16 | 2014-15 |
|---------|---------|---------|---------|---------|
| 01 | 01 | 02 | 02 | 0 |

| File Description | Document |
|------------------|----------|
| Report of the event | [View Document](#) |
| Any additional information | [View Document](#) |

**7.1.12**
**Code of conduct handbook exists for students, teachers, governing body, administration including Vice Chancellor / Director / Principal /Officials and support staff**

**Response:** Yes

| File Description | Document |
|---|---|
| Any additional information | **View Document** |
| URL to Handbook on code of conduct for students and teachers , manuals and brochures on human values and professional ethics | **View Document** |

**7.1.13 Display of core values in the institution and on its website**

**Response:** Yes

| File Description | Document |
|---|---|
| Provide URL of website that displays core values | **View Document** |

**7.1.14 The institution plans and organizes appropriate activities to increase consciousness about national identities and symbols; Fundamental Duties and Rights of Indian citizens and other constitutional obligations**

**Response:** Yes

| File Description | Document |
|---|---|
| Details of activities organized to increase consciousness about national identities and symbols | **View Document** |
| Any additional information | **View Document** |

**7.1.15 The institution offers a course on Human Values and professional ethics**

**Response:** Yes

| File Description | Document |
|---|---|
| Any additional information | **View Document** |
| Provide link to Courses on Human Values and professional ethics on Institutional website | **View Document** |

**7.1.16 The institution functioning is as per professional code of prescribed / suggested by statutory bodies / regulatory authorities for different professions**

**Response:** Yes

| File Description | Document |
|---|---|
| Any additional information | [View Document](#) |
| Provide URL of supporting documents to prove institution functions as per professional code | [View Document](#) |

**7.1.17 Number of activities conducted for promotion of universal values (Truth, Righteous conduct, Love, Non-Violence and peace); national values, human values, national integration, communal harmony and social cohesion as well as for observance of fundamental duties during the last five years**

**Response:** 24

7.1.17.1 Number of activities conducted for promotion of universal values (Truth, Righteous conduct, Love, Non-Violence and peace); national values, human values, national integration, communal harmony and social cohesion as well as for observance of fundamental duties year-wise during the last five years

| 2018-19 | 2017-18 | 2016-17 | 2015-16 | 2014-15 |
|---|---|---|---|---|
| 06 | 04 | 09 | 03 | 02 |

| File Description | Document |
|---|---|
| List of activities conducted for promotion of universal values | [View Document](#) |
| Any additional information | [View Document](#) |

**7.1.18 Institution organizes national festivals and birth / death anniversaries of the great Indian personalities**

**Response:**

YES

Institute organizes national festivals like Republic Day and Independence Day. On January 26 and August 15, event of flag hoisting and cultural events are organized. The institution takes extra efforts to instil the feelings of nationality and patriotism amongst the staff and the students. Attendance is compulsory on 15th August and 26th January. Teacher's Day is celebrated as the birth anniversary of Dr. Sarvapalli Radhakrishnan in each of the departments and by the student council. Cultural programmes showcasing the efforts of our leaders and freedom fighters are staged on these days and sweets are distributed to all. Most of the time the staff and the students are dressed in ethnic wear and are enthusiastic to attend the function. The managing director addresses the students' gathering on that day, promoting bonhomie and togetherness. Thus the institution lives up to its motto of "VASUDAIVKUTUMBAKAM".

| File Description | Document |
|---|---|
| Any additional information | <u>View Document</u> |

**7.1.19 The institution maintains complete transparency in its financial, academic, administrative and auxiliary functions**

**Response:**

**Response: Yes**

**Financial**

Fr. C Rodrigues Institute of Technology, Vashi maintains complete transparency in its financial, academic, administrative and auxiliary functions. A complete transparency is maintained in all the financial transactions and updating the records. The financial budgets of every department are submitted to the management in a common format. We have a financial audit done at the end of every financial year.

**Academic and Administrative**

Academic Calendar is designed by the Dean-Academics with the help of HODs and the principal. All policy decisions are made after due deliberation during the Principal-HOD meets. Fortnightly HOD meeting are conducted, additional meetings are called as and when required. Decisions taken during the HOD meetings are forwarded to all the faculties. Every department has an academic calendar, which is followed verbatim during the academic session. The process of keeping the students involved in the routine academic activity is done by having a system of a class representative and a class-teacher who act as the coordinators between the academic machinery and the students.

Major announcements are made in the morning assembly which is a regular part of the academic ritual and is followed diligently.

**Auxiliary**

The institution organizes various events at the departmental and institutional  in collaboration with various professional bodies, like CSI for the Computer Engineering and Information Technology, MESA, SAE and ISHRAE for the Mechanical Engineering., IETE, ETSA for the Department of Electronics and Telecommunication, IEEE which is common for EXTC and Electrical, IEI and EESA for the Electrical Engineering. Dept. CSI-AITSS for the IT department wherein various workshops, seminars and contests are conducted .

## 7.2 Best Practices

**7.2.1 Describe at least two institutional best practices (as per NAAC Format)**

**Response:**

Best-Practice-1:

## 1.1 TITLE-OF-THE-PRACTICE

**Institutional Support for Qualification Enhancement and Skill-Upgradation**

## 1.2 Objective-of-the-Practice

- Knowledge-upgradation in the respective field of engineering.
- Professional growth of faculty-members.
- Acquaintance with present skill-sets required by the industry.
- Enhancing Practical-orientated and Research-based teaching.

## 1.3 Need-Addressed-and-the-Context

Institute's vision is to provide modern technical education for developing self-sustainable professionals. To accomplish this, better qualified and knowledgeable faculty members on roll is essential. There is a scarcity of good qualified faculty members in academics. The rate-of-technology change is rapid, to adapt to these changes updating regularly about technology is essential.

Institute strongly believes that, faculty members' professional growth is equally important and it can be done through motivating faculty members to pursue research, attend training programmes and conferences, to align with rapid changes in technologies.

## 1.4 The-Practice

Faculty knowledge-enrichment is possible mainly through qualification upgradation as per institute policy and minimum-qualification requirement by statutory body. Institute devised a policy of sponsorship for qualification-upgradation to ME/M.Tech and Ph.D. from year 1998-1999. Institute also supports those faculty-members who are willing to do the post-doctoral work.

*Sponsorship Policy*

Faculty members are sponsored from each department for M.E/M.Tech. and Ph.D. program with full salary as per the seniority. During their period of study (two-years for M.E/M.Tech. and 3-5 years for Ph.D.), they are relieved from all administrative works and their teaching load is reduced to 6-10 hrs per week. They have to enter into a mutual bond with the institute for 2-years for M.Tech. and 5 years for Ph.D. of service after graduation.

*Training and Conference Support Policy*

Institute encourages faculty members to attend training programs, NPTEL, Swayam online courses, national conferences and international conferences in India/abroad. Duty-Leaves, third-AC to-and-fro rail-fare and registration-fees are given to the faculty members to attend the training programs and conferences in India. However, full registration-fee and one-way economy class air-fare are given to the faculty members traveling abroad for attending the international-conferences.

*R&D Support Policy*

Institute motivates faculty members to carry out research work by making budgetary provision up-to Rs. 12,00,000/-.

*Incentive Mechanism Policy*

Institute has clearly laid down incentive mechanism policy based on individual contribution in the research activity, consultancy work/R&D, book writing and receiving patent. The faculty members can avail incentives for professional society membership or subscribing to a journal.

*Road-Map*

To enhance growth in the research-work, upgrade knowledge and skill in their domain areas, faculty members prepare activities map for next five-years as road-map, which has started from the year-2017.

## 1.5 Evidence-of-Success

Following table shows qualification upgradation of faculty members through institute sponsorship policy.

| No. of faculty-members sponsored-for ME/M.Tech | No. of faculty-members who completed ME/M.Tech Under Sponsorship | No. of faculty-members sponsored for Ph.D. | No. of facul Under |
|---|---|---|---|
| 55 | 46+7* | 31 | |

*Left-the-institute.

The impact of institute-support in quality-enhancement are:

- Many faculty-members completed higher studies
- High Retention (Average-experience within-the-institute is around 16-years.)
- Attending more training-program
- Higher number of publication ( Around 700 Journal and Conference publication in last 5-years).

## 1.6 Problem-Encountered-and-Resources-Required

It was observed that faculty members started leaving the institute after completing their higher qualification before completing bond-period. To retain members in the institute, amendment in the service bond took place in the year 2009-10.

Resources mainly in terms of human, finance and laboratory are essential for effective implementation.

*Human Resources*

Institute has sufficient number of faculty to manage teaching-load of sponsored faculty-member for higher-studies. Salary expenses is taken care through budgetary provisions.

 *Financial Resources*

Institute sanction Rs. 12,00,000/-  as Research-Fund in every financial-year. Expenses towards travelling

and registration for attending training-program and conferences are paid to faculty members and financial provisions are made in the institute budget.

*Laboratory and Instrumentation*

Laboratory-infrastructure is augmented for future research activities continuously through budgetary provision. Exclusive area is provided for research work in Project and R&D labs. In addition to this other laboratories are open after college working-hours.

## 1.7 Notes For Adoption

Intent of the management is to provide quality education through qualified and knowledgeable faculty members by providing the required resources. Faculty members should have positive approach towards self-growth and contribute towards progress of institute by aligning with institutes' vision. For effective implementation proper monitoring of all activities related to faculty growth is essential.

Best-Practice-2:

## 2.1 TITLE-OF-THE-PRACTICE

**Integration of IT based Solution for Continuous Evaluation of Students**

## 2.2 OBJECTIVES-OF-THE-PRACTICE

Continuous evaluation of the students is very critical in education system as it brings scope for introducing further actions required to be taken for effective implementation of Teaching-Learning process. Effective learning by students helps them in developing their analytical, logical, and creative thought process along with necessary technical-skills. Use of IT-based solutions helps in efficiently analyzing the learning by the students and planning further necessary actions.

Objectives:

1. To develop in-house IT-platform for CO-PO attainment-computations, uploading study-material, conducting various feedbacks, etc.
2. To inculcate habit of effective-and-focused learning in classroom;
3. To develop analytical, logical, and creative abilities along with necessary technical-skills;
4. To identify slow and fast-learners for further action;
5. To prepare the students to cope-up work-pressure.

## 2.3 THE-CONTEXT

1. How to convert existing unique model into in-house developed IT-platform for computation of outcome-attainments, monitoring students' academic-performance and attendance -record, automated term-work marks calculations, collecting various feedbacks, etc. at the click-of-mouse.
2. How to identify slow-learners and what additional support-mechanism needs to be developed for them?
3. How to identify fast-learners and what additional benefits can be offered to them for sustaining their motivation?

4. Based on students' feedback on Teaching-Learning what further actions are needed by teacher for improvement in teaching-process resulting in enhanced-learning by students?

5. How the assessment and evaluation process can be made transparent to the students for giving them critical-feedback on their learning and helping them to improve in future?

6. How to prepare the mind-set of the students for smooth-transition to the corporates?

## 2.4 THE-PRACTICE:

1. Use of IT-Platform:

Our teachers had developed in-house IT-platforms named 'Academic Performance Monitoring System (APMS)' and 'Learning Management System (LMS)' to convert existing practices into technology-driven practices.

- APMS: Entering CO, CO-PO-PSO mapping, goal-setting, CO-wise assigning "Assessment-tools", entering marks for assignment-test, internal assessment-test, prelims, end-semester examination, computation of CO, PO, and PSO-attainments, finding academic-defaulters, entering attendance and finding attendance-defaulters, conducting various feedbacks and analysing them, etc.
- LMS: Uploading notes/assignments/quizzes, on-line evaluation of assignments, etc.

2. Innovative Methodologies in Teaching-Learning and Evaluation for Transforming Thought-Process of the Students:

Well in advance before beginning of a new-semester all the teachers prepare lecture-plan, carry-out mapping of Course-Outcomes with (a) Content-delivery-tool introducing innovation in teaching; and (b) Course-assessment and evaluation plan for in-semester and end-semester examinations. The examination can be theory paper, assignments, oral, quiz, etc.

3. Slow-Learners:

Slow-learners or students weak in academics are identified based on some of the following criteria's: (a) Their history of academic-performance; (b) Based on marks scored in internal-assessment tests. Those who score less than 12-marks out of 20 in tests are identified as slow-learners and revision/remedial classes are conducted for them. Post remedial classes impact analysis is carried out after the end-semester examination.

4. Fast-Learners

Based on teacher's observations in class, laboratory, active participation/performance in co-curricular activities/competitions at various-levels, etc. fast-learners are identified and they are encouraged for additional learning as per pre-approved policy-framework.

5. Students' Feedback on Teaching-Learning:

Online feedback on Teaching-Learning process is carried out twice in a semester and based on it teachers are asked to prepare action-to-be-taken for further improvement in Teaching-Learning process, if the feedback under 'satisfactory' category is above a particular-level. Appreciation certificates are given if the overall feedback under 'Excellent' category is above a particular-level.

6. Transparent Evaluation-Process:

All the in-semester evaluations are carried out based on well-defined rubrics, solutions are discussed in the class, and answer-papers are shown to the students. For end-semester examination Mumbai-University norms are followed for revaluation, photo-copy of answer-book, etc. Students can approach grievance-committee if they feel so.

7. Preparing Students' for Right-Attitude

Conducting the activities mentioned below on regular-basis helps moulding the students' attitude to be punctual, sincere, hardworking, follow the given deadlines, etc. so that they will experience smooth transition to corporate-life. The activities include: Every-day reporting to the Institute at right time, monitoring attendance of the students every alternate-week, asking for leave-note for remaining absent, ensuring they complete assigned work in-time, mentoring students twice in a semester for sorting out issues which they may be facing, encouraging students to actively participate in co-curricular and extra-curricular activities, etc.

## 2.5 EVIDENCE-OF-SUCCESS

- Consistently excellent end-semester examination results in final year (around 100%).
- More than 85% of the students admitted in first year graduate in a stipulated 4-year duration.
- Every-year passing-percentage of our FE-students (around 80%) is almost double compared to the overall Mumbai-University results (around 40%).
- On an average 85% among the eligible-students are placed in-campus.
- The employers prefer our students and have been consistently coming back year-after-year.
- Our alumni are successful in their professional-career and many of them are now successful entrepreneurs.
- On an average every year 10-to-15% of the students enrol for higher-studies. Many of them have completed their Ph.D. from reputed foreign Universities.

## 2.6 PROBLEMS-ENCOUNTERED-&-RESOURCES-REQUIRED

1. Being affiliated institution, less flexibility in:

(a) implementing additional evaluation-methodologies;

(b) assigning time-slots for conducting revision/remedial classes and placement-related activities.

2. It takes lot of efforts in motivating and convincing a group of students about importance of performing well in academics.

3. Attitude of the students to maintain 75% attendance was a challenge.

4. Less flexibility in timing of the institute due to non-residential status.

5. Converting unique existing system into IT-platform was the challenge.

6. "Time" was the major resource required for effective implementation of this best-practice.

7. Sustaining motivation of sincere and dynamic teaching-staff was the challenge.

## 2.7 NOTES-FOR-ADOPTION

1. Vision of the Management;
2. Administrative capabilities and vision at the Principal and Head-of-the-Department level;
3. Sincere, dynamic, dedicated, hardworking, and motivated faculty;
4. Acceptability of the processes followed by the Departments/Institute by the students.

Best-Practice-3:

## 3.1 TITLE-OF-THE-PRACTICE

**IT Enabled Secured Examination Management System**

## 3.2 Objective-of-the-Practice

Institute is affiliated to University of Mumbai wherein, the examination conduction, Assessment, Result preparation and declaration of first and Final-Year is done by University while, the second and third-year are managed by Institute on behalf of university. The question paper for all examinations are send by the University. The answer papers of second and third year are assessed by internal-examiner and moderated by external-examiner. Result of the same, with all applicable ordinances and regulations of the University, is processed by institute and send to university for approval. So, a secured examination-system is essential and the following objectives have been set.

* Restrict malpractices and unfair means in the examinations.
* Maintain the reliability, transparency and confidentiality of the examination-system.
* Facilitate revaluation and print the grade sheets,transcripts.

## 3.3 The-Context

University has implemented credit-and-grading system in the year-2012 wherein, estimation of Cumulative Grade point is essential which increased the difficulty level in the result-processing. This leads to the development of examination result processing software as per the university norms. The following are the different contexts where in the IT-enabled system work efficiently.

* Generation of the hall-ticket of the students applied for the examinations from the database of the students.
* The revaluation result, of the students who applied, should be processed separately and updated in the main-result.
* The printing of security enabled grade sheets automatically, after the revaluation of results.
* Promotion of student to next-year is to be done by applying the university ordinances and the list of eligible-students is to be generated.
* Generation of Transcripts for those students who go for higher-studies.

## 3.4 The-practice

IT enabled result processing module has been developed and deployed, for Credit and grading system from

the year-2015.

**Hall Ticket Generation Module**: Hall tickets of all students, applied for the examination, are generated with the help of student data base already existing in the IT enabled system. The hall ticket with photograph and the instructions to students are printed after allotting the seat-numbers.

**Result Processing**: The entry of marks of all subjects (Oral/practical/Term Work/Internal Assessment/End semester) are done in the software manually. The first-semester and second-semester marks of all students are entered into the system once that result is declared by University which is essential for calculating the cumulative-grade-point of higher semester.

Once the marks are entered, no editing is permitted, at data-entry operator level. Any mistake at the data-entry will be corrected through the admin login in the presence of Controller of Examination/Principal. As per the provision in the Maharashtra University Act the result shall be processed within 45-days from the last-day of Examination.

**Revaluation**: Students are permitted to apply for revaluation and Photo-copies of answer books within 10 days after the result is declared. The photocopies of answer books are send to their respective E-mail.

The revaluation result processing module takes out the list of students applied for the revaluation and complete the result processing separately and automatically updates the revaluation result in the main result sheet once the revaluation result is declared. The entire process of revaluation is completed within 30-days, from the last day of submission of application for revaluation.

**Grade sheet printing**: The system dynamically generates examination wise grade sheets and print the same on security enabled paper with QR code. The grade sheets are distributed subsequently to the students.

**Eligibility checking**: The system dynamically generates the list of eligible students for next academic year by applying the University ATKT ordinance, rules and regulations.

**Transcript Generation**: The system automatically generates the transcripts for students who opt and applied for higher studies. This reduces the preparation and issuance time of transcripts. This enables the issue of transcripts within 2-days from the date of application.

**3.5 Evidence-of-Success**

The following outcomes are the end result of the practices followed:

1. Fast and authentic generation of Hall tickets.
2. Completion of the 2nd and 3rd year result processing and submission of result to University of Mumbai for approval within 10 days from the last day of examination.
3. Printing and distribution of security enabled Grade sheets to students within 10 days of the declaration of revaluation result.
4. Accurate generation and issuance of transcripts within 2 working days from the date of application.
5. No grievance has been reported regarding the result processing, issuance of grade sheets or transcripts.

**3.6 Problem encountered and resources required**

No major problem is encountered in the system so far.

Examination cell is located in a secured place of the Institute where the access is restricted by order. The Examination cell consist of sections for Conduction, Evaluation and Result Processing (Confidential Room). All the above sections are well furnished and under CCTV surveillance. All stationary related to examination including blank/used answer sheets are securely kept in locked steel cupboards systematically.

The examination cell has 4 computers, 2 copying cum printing machines and 2 printers as part of IT infrastructure. The software is developed and maintained in-house. Two full time clerical staff and one attendant are exclusively appointed in Examination Cell. One faculty in-charge is appointed as Controller of Examination who is assisted by one faculty coordinator from each department for Examination related work.

**3.7 Requirement for Adoption and Adaptation**

Honest, ethical, integral and dedicated manpower is the backbone of any examination system.

# 7.3 Institutional Distinctiveness

**7.3.1 Describe/Explain the performance of the institution in one area distinctive to its vision, priority and thrust**

**Response:**

**Response: 'Self-sustainable Professionals and value based individuals.'**

1. The vision of the institute is to 'evolve and flourish as a progressive centre for modern technical education, stirring creativity in every student leading to self-sustainable professionals, through holistic development; nurtured by strength and legitimate pride in Indian values and ethics.'
2. The institute lays extra stress on instilling ethics and feeling of social responsibility in the students. To practice the same, the college conducts morning assembly every day, where thought for the day, giving quotes of ethical importance to the students form a primary ritual. Contextually relatable anecdotes and thoughts are expressed by the authorities and the managing director from time to time during the days of national importance. On the whole, the institute proclaims good behavior and values in the students.
3. The college has devised its own way of inculcating life skills in the students. The thrust is on making complete and holistic learning possible on campus. The college conducts various co-curricular and extra-curricular activities. Some of the examples out of the many are FACES-(the intra-collegiate annual fest), ETAMAX-(inter-collegiate annual fest) AND GENESIS (cultural platform for the 1st yr. students) and SAMVAAD-the inter college debate competition, throughout the year to attain this.
4. One area that the college is thrusting upon is increasing industrial exposure and so it is encouraging

and sending more and more students for internships. The institute has students who go for internships to IIT (Bombay) and IISC (Bangalore). Many of our students have started going for internships to international universities as well. The college is well equipped with all the lab facilities and other infrastructure to assist in the proper and channelised development of employable engineering graduates.

5. Good communication skill becomes a major and important aspect in the program of global business. Special care has been taken to build a language lab. The art of communication in technical English, which has become an important aspect, is taught by competent faculties with international approach.  Both, oral and written communication, along with personality development is taught in a friendly way so that students are mentally and physically prepared for any kind of job in the international market. The institute has a memorandum signed with Tata Institute of Social Sciences, Mumbai (TISS), and runs a course on professional ethics.

6. E - Learning has become an integral part of technical education throughout the world. Taking care of the need of the future, the institute has incorporated provision for outcome based education attainment calculation to be done through electronic medium. The institute has started with Moodle and special care is taken to make the course work more interactive and interesting by introducing smart boards. Students are encouraged to take up B.E. projects which are directed to be concerned with future of the country and the system is changing its approach in making the projects more viable socially.

7. The college is equipped with professional labs, workshops, smart boards in each of the departments and LCDs and projectors in each of the classrooms. Learning Management System to make the teaching facilities more vibrant and creative, both technically and content wise is being used by the faculty-members.

8. APMS facility is now available for all faculty-members.

9. The institute believes in holistic learning and therefore each of the departments has a number of technical platforms in collaboration with professional societies, like CSI for the Computer Engineering, MESA, SAE and ISHRAE for the Mechanical Engineering., IETE, ETSA for the Dept. of Electronics and Telecommunication, IEEE which is common for EXTC and Electrical, IEI and IESA for the Electrical Engineering. Dept. CSI-AITSS for the IT department wherein various workshops, seminars and contests are conducted.

These forums are extended to provide a creative bend and the events are documented artistically in the departmental magazines and newsletters. Apart from this we have Artificial Intelligence and Deep Learning and a Robotic Club at the institute level. The institute thus enables constant and continuous development of the students, thus being instrumental in their conscious progress as professional and ethical human beings. This leads to self-sustainable professionals and value based individuals.

# 5. CONCLUSION

## Additional Information :

- Teachers are encouraged to upgrade their knowledge and qualification by availing existing policies for sponsorship for the same.
- Teachers and students grab opportunities made available to them for in-house development of IT platforms for strengthening our Teaching-Learning and administrative processes by developing Academic Performance Monitoring System (APMS), Library Management System, Learning Management System, Placement Portal, Examination System, etc.
- A five-year roadmap is prepared by all the teachers and it is monitored by the Principal on yearly basis.
- Robust audit mechanism at various levels is in existence for monitoring execution of activities by teachers related to teaching-learning.
- The day begins with the morning assembly at 8.35 am which is attended by all the staff and students. Assembly consists of 'two-minutes silent prayer, 'thought for the day', 'news-updates', 'announcement regarding staff/student achievements' 'National anthem', etc. Some of the major objectives of conducting assembly are: (a) to inculcate punctuality among students; (b) to spend some time on for self-introspection during silent prayer; (c) to evoke feelings of patriotism among the students by singing a National anthem, etc.
- At the first year level extra efforts are put to handheld the students for smooth transition to professional engineering education. Similar efforts are further continued in the higher semester.
- Various platforms are made available for students for their overall personality development through organizing/participation in various co-curricular and extra-curricular activities. Students are encouraged to actively participate in various national and international level competitions.
- Parents are updated individually as per the need regarding academic progress, attendance record, and end-semester results, etc. of their wards.
- Linkage is established among juniors and seniors by calling alumni for guest lecture to discuss professional environment, latest technologies, guidance for higher studies, etc.

## Concluding Remarks :

The Institute is progressing in a direction to full-fill its Vision by ensuring effective execution of policies by each and every stakeholder. Following are the conclusive explication about the Institute's functioning:

1. The institute conducts Governing Council (GC) and College Development Committee (CDC) meetings on regular basis to:

- Review progress of the Institute.
- Discuss/approve/modify new policies proposed by the Principal/Management.
- Suggest new policies to be introducing.
- Approve budget, etc.

These meetings helped the Institute in knowing where it stands and what further needs to be done for achieving the Vision.

**2. Orientation program for the FE parents and students has helped them in understanding the academic and administrative procedures being followed at FCRIT.**

**3. Advanced planning of academic and other activity calendar, class time-table, lecture wise plan for theory and lab by teachers and its effective execution has resulted in excellent results and good number of students going for higher studies.**

**4. Effective implementation of policies for fast and slow learners has helped them in sustaining their self-motivation and performing well in end-semester examinations, respectively.**

**5. Students Mentoring process has helped in understanding difficulties being faced and based on feedback appropriate actions are initiated immediately.**

**6. Co-curricular and extra-curricular activities has helped the students in developing their overall personality.**

**7. AICTE/ISTE approved/sponsored National level STTPs for faculty members, workshops/training to students as per the signed MoUs with various agencies, etc. has helped teachers and students in upgrading their knowledge and skills.**

**8. Placement related training along with rigorous in-semester continuous evaluation has resulted in good in-campus placement of the students.**

**9. Initiating actions based on feedback received from academic audit, Department Advisory Board (DAB), Industry Advisory Board (IAB), Parent-Teacher Interaction meetings and various other stakeholders has resulted in good impact in sorting out the issues reported.**

**10. BE Degree distribution ceremony, felicitation function for the first three toppers, fresher's party for FE students, and send-off party for BE students has helped motivating the students for the recognition they get**