

SELF STUDY REPORT (SSR)
FOR
NAAC ACCREDITATION



Maharshi Karve Stree Shikshan Samstha's
Cummins College of Engineering for Women

An Autonomous Institute affiliated to Savitribai Phule Pune University

Karvenagar, Pune.

Submitted to

NATIONAL ASSESSMENT AND ACCREDITATION COUNCIL

MARCH, 2017

Cummins College of Engineering for Women

An Autonomous Institute affiliated to Savitribai Phule Pune University "शीलं परं भूषणम्"
KARVENAGAR, PUNE - 411052, INDIA.



(University Affiliation No. PU/PN/ENGG/087/1991, INDIA)
Approved by All India Council for Technical Education (AICTE)
Accredited by National Board of Accreditation (NBA) and
National Assessment & Accreditation Council (NAAC) at Grade-A



Ref. CCEW-2496/16-17

Date : March 22, 2017

To
Dr. Jagannath Patil,
Advisor
National Assessment and Accreditation Council
Bangalore.

Subject : Submission of Self-Study Report of MKSSS's Cummins College of Engineering for Women, Pune

Respected Sir,

Maharshi Karve Stree Shikshan Samstha's Cummins College of Engineering for Women, established in 1991, is a self-financing college. The college is approved by All India Council for Technical Education (AICTE) and affiliated to the Savitribai Phule Pune University (SPPU). The college departments have been accredited by the National Board of Accreditation (NBA) in the years 1998, 2002, 2006, 2012 and 2016.

The college has been accredited by NAAC in the years 2002 and 2012. The UGC has granted autonomous status to the college from the academic year 2016-17. The college is submitting the Self-Study Report as per the format applicable to the autonomous colleges for the third cycle of accreditation.

This report is uploaded on the college website: www.cumminscollege.org

We request you to kindly consider this report for further action.

Thanking you,

Yours sincerely,

Dr. Madhuri Khambete
Director



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Executive Summary

About Parent Organization: Cummins College of Engineering for Women, India's first women's engineering college is governed by Maharshi Karve Stree Shikshan Samstha (MKSSS).

MKSSS, formerly known as 'Hingane Stree Shikshan Samstha' was founded by great visionary Bharat Ratna, Maharshi Dhondo Keshav Karve in 1896. For more than hundred years, MKSSS is working for upliftment, emancipation and education of women. For the great work in the field of women education, Maharshi Karve received "Bharatratna" in 1958. As expression of gratitude and respect, 'Hingane Stree Shikshan Samstha' is renamed as 'Maharshi Karve Stree Shikshan Samstha'.

Today, under umbrella of MKSSS more than 60 educational institutes are spread all over Maharashtra, which include primary Schools, High-schools, Vocational Schools & Colleges. Over 30,000 girl students are taking education in MKSSS institutes.

About the College: With the changing Socio-Economic scenario & modern trends in the field of education, MKSSS decided to offer facilities in technical education. Thus in 1991, the first all-women Engineering College started. This was possible only on account of the timely, munificent donation made available by Cummins Diesel (India) Foundation, Pune. As a token of gratitude, the Maharshi Karve Stree Shikshan Samstha decided to name the college as **Cummins College of Engineering for Women**. The first undergraduate batch passed out in July 1995, coinciding with the centenary of its parent institution.

The Vision & Mission of the College are:

Vision: *To be globally renowned institute for imparting quality education and to develop women leaders in engineering and technology.*

Mission: *To develop women professionals who are academically competent with strong professional ethics.*

Cummins College is affiliated to the **Savitribai Phule Pune University** and the college has become autonomous in the academic year 2016-17. First year of all the programs is as per autonomous pattern in academic year 2016-17. This pattern will be applicable for subsequent program years in progressive manner. The college offers five Undergraduate Engineering Programmes (B. Tech. / B. E.) in –

- 1) Electronics & Telecommunication Engineering
- 2) Computer Engineering
- 3) Instrumentation & Control Engineering
- 4) Information Technology
- 5) Mechanical Engineering

The college also offers Postgraduate level Engineering Degree Programmes (M. Tech. / M. E.) in –

- 1) Electronics & Telecommunication Engineering – Specialization: Signal Processing
- 2) Instrumentation & Control Engineering – Specialization: Biomedical Engineering

The college departments are accredited by the National Board of Accreditation (NBA) in the years 1998, 2002, 2006, 2012 and 2016.

The college is accredited by the National Assessment & Accreditation Council (NAAC) in 2002 & re-accredited in 2012 at **Grade – A**.

Following is the executive summary of the SSR:

Criterion – 1: Curricular Aspects:

- The college has become recently autonomous, i.e. in the academic year 2016-17. Considering AICTE and UGC guidelines, the college has defined structure and curriculum of undergraduate and postgraduate level engineering programs.
- For designing the curriculum, the college has involved stakeholders, such as industry experts, employers, experts from academia and alumnae. These stakeholders are members of the governing body, academic council, IQAC and various boards of studies of the college. Regular meetings of these committees are conducted to review and revise the curriculum. College collects students' feedback on the curriculum, which is considered for any revision, if required.
- Objective of the curriculum is to provide quality education in engineering with extensive hands-on opportunities and industry exposure, so that students will be ready for careers in engineering.
- At the first year level, all the students study common courses. Students can continue branch-specific courses from second year onwards. However, they can change the branch, if they want at the second year level. At third year and final year level students can opt the courses of their choice from the available options under elective courses category.
- The college offers skill-development and value-addition courses to enrich curriculum at no cost or at a very low cost. Technical activities of professional societies and student clubs help to widen their horizons of knowledge.

Criterion – 2: Teaching, Learning and Evaluation:

- Maharashtra state government regulates engineering admissions for UG and PG in Maharashtra through centralized admission procedure. Admissions are based on the entrance examination conducted by the state government as well as test conducted at national level. Admissions for the Ph. D. programs are as per the directives of Savitribai Phule Pune University.
- The college provides secure hostel facility at moderate cost to the girl students. This enables students from urban as well as rural sectors of Maharashtra and outside Maharashtra to enroll for the engineering program.
- The college offers financial assistance to the students from economically challenged category.

- Communication skill development program is offered by the college to the students coming from vernacular medium at no cost.
- To ensure the quality of teaching, learning and evaluation processes both the knowledge as well as the cognition dimension of the revised Bloom's taxonomy is referred by the college. During the teaching of various courses, the emphasis is on imparting procedural and meta-cognitive aspects of knowledge as well as on the providing factual and conceptual knowledge.
- Evaluation strategies for every course is designed as per the expected levels of different cognition-types, starting from students' ability to remember, recall and understand the subject areas presented to them to their ability to apply, analyze and evaluate the same. For senior undergraduate and postgraduate students an equal or sometimes even greater emphasis is given on evaluating their creative abilities, mainly through projects.
- One of the key strengths of the college is passionate faculty members. The college encourages faculty members to improve their qualifications, attend workshops and conferences by providing financial assistance and duty leave. Good management policies and academic environment resulted into high retention ratio.
- Under the leadership of the controller of examinations In-semester and End-semester examinations are conducted. Fair practices and transparency are maintained in the examination and evaluation processes.
- Due to the efforts taken by the faculty members and students, most of the students complete their engineering program in the stipulated time with good percentage. Good academic records, value addition courses, co-curricular and extra-curricular activities attract reputed organizations for placement. Around 10 % of the total students pursue their higher studies in India and abroad.

Criterion – 3: Research, Consultancy and Extension:

- The college has good infrastructure in terms of number of laboratories, laboratory equipment and library resources. The college management makes budget available to procure state-of-the-art equipment useful for research. The college has close association with Cummins India Ltd. They have sponsored much high-end laboratory equipment. The college library has good collection of books and journal subscriptions to facilitate research.
- To encourage faculty members to attend conferences, to publish articles and for pursuing funded research management provides incentives.

Policies are also framed to motivate faculty members for consultancy activities. This has resulted in good number of publications in conferences as well as in journals.

- Through its NSS unit and professional society chapters, the college promotes various community engagement activities. College students and faculty members participate in activities such as blood donation camp, campus cleaning, and educating school children. These activities lead to the creation of students' awareness on social problems, to improve communication skills, teamwork and to grow students as socially sensitive human beings.
- The college has good collaboration with industries, academic institutes and professional bodies. In addition to getting visibility and identity, college has been benefitted financially and academically in a big way due to such collaborations. It has signed MOUs with several esteemed organizations from academia as well as industries, namely, Purdue University, USA, and Deakin University, La Trobe University and Carnegie Mellon University, AUS, CIL, Mercedes Benz, HSBC bank and Citibank for different academic purposes.

Criterion – 4: Infrastructure and Learning Resources:

- The college provides adequate infrastructure facilities which are meeting not only the norms of regulating bodies but also satisfies functional needs. All the classrooms and most of the laboratories are equipped with multimedia teaching aids. Laboratory equipment is as per the syllabus requirement. High-end equipment is also available for student projects and research.
- Library having rich books and journal collection fulfills the academic resources needs of the students as well as faculty members. Library orientation programs and other schemes have resulted into good library usage.
- All the other supporting facilities such as hostel, playground, gymnasium and dispensary are available in the campus.
- All these campus facilities are maintained through full-time staff members appointed by the parent organization as well as by maintenance contractors.

Criterion – 5: Student Support and Progression:

- The institute provides a number of mechanisms for student support and mentoring. Regular interaction between students and the Director, the Heads of departments, faculty mentors help to identify and understand student issues. Elected student panel also acts as an interface between the Director and the students. Students organize various co-curricular and extra-curricular activities under the guidance of Dean – student affairs.
- The institute conducts soft-skill development, career counseling, and personal enhancement sessions for the students by inviting external experts. For the overall development of students the institute encourages student participation in co-curricular and extra-curricular activities by providing the required support.
- Training and placement cell provides pre-placement guidance to the students for placement activities. The cell coordinates internship and placement activities.
- The institute provides financial and medical support as per the needs of the students.
- Industry, employers, faculty and alumnae actively contribute in students' development activities.
- More than 90 % of the total students complete the program in stipulated time. Good number of students pursues higher studies in India and abroad. Around 65 % to 70 % of the total students get job offers in their final year itself.
- Every year the college conducts student elections. Various student activities are organized under the leadership of the elected student representatives. The students participate in inter-collegiate, intra- and inter-university sports tournaments and cultural competitions. They have also won several prizes in such tournaments and competitions.
- The student representatives are the members of IQAC, anti-ragging committee and hostel committee. The institute collects feedback on support services from all the final year students as well as from the student representatives in order to improve these services.

Criterion – 6: Governance, Leadership and Management:

- Parent organization is working for women empowerment since 1896. The institute has a vision to provide quality engineering education and to develop women leaders in engineering. The leadership of the institute believes in participative management and strives to bring in excellence by structured organizational system with the involvement of all the stakeholders. Various stakeholders of the institute are the members of the statutory bodies and their meetings are conducted regularly.
- The institute has a well-defined perspective plan involving focus areas, action plan to achieve the goals and measures to verify their achievements.
- The institute collects feedback from all the students on teaching, curriculum and support services. The feedback from employers and alumnae are used to improve the overall performance of the institute.
- Under the leadership of the Heads, the departments plan and execute their academic and administrative activities.
- Institute, being self-financed, the tuition fees is the main source of the income. The institute makes budgetary provision for recurring and non-recurring expenditure in advance. As per the budget financial resources are made available for the functioning of the college.
- The college has an active internal quality assurance cell (IQAC) formed in the year 2011. The IQAC conducts regular meetings to review and improve the quality of the overall functioning of the institute.

Criterion – 7: Innovation and Best Practices:

- Though the college is located in crowded city area, it has maintained large number of trees in its campus, which helps to reduce air pollution.
- The college takes conscious efforts to create awareness about energy conservation and renewable energy usage among students. Solar panels and biogas plants are used in the hostel and the college campus.
- The college has unique association with industry in day-to-day functioning as well as in long-term planning. This has enabled the college to incorporate innovative functioning ways, such as GAP analysis using six-sigma technique, sabbatical leave in industry, employability enhancement program for students, and interaction with industry leadership.
- The college takes efforts to bring in innovations in teaching-learning process such as adopting revised Bloom's Taxonomy, use of social

platforms, use of modern teaching tools.

- The college follows many best practices for students and staff. Some of the examples include - employability enhancement program and soft-skill development program for students at no cost, financial assistance to the students, Cummins fellowship program, assistance for placement even after graduation, extension of library membership for one year after graduation without charging any library fees, appointing coaches for sports, student mentoring; various schemes aiming at faculty development such as paid study leave for pursuing Ph. D., incentives for quality publications and for funded research, medical insurance for staff, fee concession for the wards of 3rd and 4th class employees.

The 'SWOC' analysis of the Institute

Strengths:

1. Parent institute's rich legacy in the field of women education
2. Transparent and Proactive management
3. Strong association with the Industry Cummins India Ltd.
4. Good number of collaborations with Industries for student and faculty development
5. Adequate and Well-maintained Infrastructure
6. Good faculty retention
7. Good academic environment due to dedicated faculty
8. Significant campus placement opportunities from highly reputed organizations for students

Weaknesses:

1. Percentage of faculty members involved in research and consultancy activities is less.
2. Lack of structured entrepreneurship promotional activities
3. Facility of Incubation Center is not available.
4. Participation of alumnae in the overall development of the college is less.

Opportunities:

1. To emerge as a role model in the field of engineering education adapting best pedagogic practices
2. As an autonomous college, involving industries for curriculum development, student projects, internships
3. Enhancement in entrepreneurship activities with the help of industries
4. Academic flexibility in terms of choice of courses offered within and beyond the institute

Challenges:

1. Being an all women college inviting participation of alumnae towards overall development of the college
2. Attracting research grants from funding agencies
3. Establishment of Centre of Excellence of national repute

Profile of the Autonomous College

1. Name and Address of the College:

Name :	Maharshi Karve Stree Shikshan Samstha's Cummins College of Engineering for Women	
Address :	Karvenagar, Pune.	
City :	Pin: 411052.	State: Maharashtra.
Website :	www.cumminscollege.org	

2. For communication:

Designation	Name	Telephone with STD code	Mobile	Fax	Email
Director	Dr. Madhuri Bhushan Khambete	O: 020-25311100 R: 020-23251050	9225517613	020- 25311499	principal@cum minscollege.in
Steering Committee Coordinator	Dr. Vikram Athalye	O: 020-25311172 R: 020-25871566	9604339640	020- 25311499	vikram.athalye @ cumminscolleg e.in

3. Status of the Autonomous College by management.

I	Government	<input type="checkbox"/>
II	Private	<input checked="" type="checkbox"/>
III	Constituent College of the University	<input type="checkbox"/>

4. Name of University to which the College is affiliated:

5. a. Date of establishment, prior to the grant of 'Autonomy':

b. Date of grant of 'Auntonomy' to the College by UGC: 9th March, 2016

6. Type of Institution:

- a. By Gender
- | | |
|------------------|-------------------------------------|
| i. For Men | <input type="checkbox"/> |
| ii. For Women | <input checked="" type="checkbox"/> |
| iii. Coeducation | <input type="checkbox"/> |
- b. By Shift
- | | |
|--------------|-------------------------------------|
| i. Regular | <input type="checkbox"/> |
| ii. Day | <input checked="" type="checkbox"/> |
| iii. Evening | <input checked="" type="checkbox"/> |
- c. Source of funding
- | | |
|--------------------------------|-------------------------------------|
| i. Government | <input type="checkbox"/> |
| ii. Gran-in-aid | <input type="checkbox"/> |
| iii. Self-financing | <input checked="" type="checkbox"/> |
| iv. Any other (please specify) | <input type="checkbox"/> |

7. It is a recognized minority institution?

- | | |
|--------|-------------------------------------|
| i. Yes | <input type="checkbox"/> |
| ii. No | <input checked="" type="checkbox"/> |

8. a. Details of UGC recognition:

Under Section	Date, Month & Year (dd-mm-yyyy)	Remarks (If any)
i. 2 (f)	25 th July, 2014	The College, being a self-financing &

ii. 12 (B)	unaided, would be eligible to receive UGC's support only in respect of teachers & students related schemes as per the decision of the Commission dated 8 th July, 2011.
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(UGC Certificate of 2 (f) and 12 (B) is enclosed in Annexure – 2)

b. Details of recognition/approval by statutory/regulatory bodies other than UGC (AICTE, NCTE, MCI, DCI, PCI, RCI etc.)

AICTE Approval Number	Day, Month & Year (dd-mm-yyyy)	Validity	Programme / Institution	Remarks
27-33/90-TD-1/AICTE	06/06/1991	One Year	1) B.E. Electronics & Telecomm. 2) B.E. Computer Engineering, 3) B.E. Instrumentation & Control	First Approval of AICTE
740-89-206(E)/RC/94	28/06/1999	One Year	1) B.E. Information Technology	First Approval
740-89-206(E)/RC/94	19/06/2007	One Year	1) B.E. Mechanical Engineering	First Approval
09/10/E&T/Even/WRO/01	09/07/2009	One Year	1) B.E. Electronics & Telecomm. 2) B.E. Computer Engineering	First Approval for II nd Shift
740-89-206(E)/RC/94	17/09/2008	One Year	1) M.E. Electronics & Telecomm. (Specialization in Signal Processing) & 2) M.E. Instrumentation & Control Engineering (Specialization in Biomedical)	First Approval

Western /1-2809546845/2016/EO A	05/04/2016	One Year	1) B.E. Electronics & Telecomm. 2) B.E. Computer Engineering, 3) B.E. Instrumentation & Control 4) B.E. Information Technology 5) B.E. Mechanical Engineering	Latest Approval
			1) M.E. Electronics & Telecomm. (Specialization in Signal Processing) 2) M.E. Instrumentation & Control Engineering (Specialization in Biomedical)	

Note: The College has received AICTE approval every year from the date of first approval till the Academic Year 2016-17. Also approval for the Academic Year 2017-18 is in process.

(Latest AICTE approval is enclosed as Annexure – 3)

9. Has the college recognized

a. By UGC as a College with Potential for Excellence

Yes	<input type="checkbox"/>	/	No	<input checked="" type="checkbox"/>
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10. Location of the campus and area:

Location	Urban
Campus area in sq. mts. or acres	4.27 Acres
Built up area in sq. mts.	26430 mts.

11. Does the College have the following facilities on the campus (Tick the available facility)? In case the College has an agreement with other agencies in using such facilities provide information on the facilities covered under the agreement.

- Auditorium / seminar complex
- Sports facilities
 - *play ground
 - *swimming pool

- *gymnasium
- Hostel
 - *Boys' hostels
 - *Girls' hostels This College is exclusively for Girls, hostel facility for boys is not available
- Residential facilities
 - *for teaching staff
 - *for non-teaching staff
- Cafeteria
- Health center-
 - *First aid facility
 - *Impatient facility
 - *Outpatient facility
 - *Ambulance facility
 - *Emergency care facility
- Health center for staff-
 - *Qualified Doctor - Full time Part-time
 - *Qualified Nurse - Full time Part-time
 - *Other facilities
 - Bank
 - ATM
 - Post office
 - Book shops
- Transport facilities
 - * for students
 - *for staff
- Power house
- Waste management facility

12. Details of programmes offered by the institution: (Give data for current academic year)

The College has become Autonomous from 2016-17 and offers the following programs:

Sr. No.	Program Level	Name of the Program / Course	Duration	Entry Qualification	Medium of Instruction	Sanctioned /approved Student intake	Total Number of students admitted at First Year
1	Under Graduate	B.Tech. Computer Engineering	Four Year	12 th + CET	English	180	126
2		B.Tech. Electronics & Telecommunication	Four Year	12 th + CET	English	180	121
3		B.Tech. Instrumentation & Control	Four Year	12 th + CET	English	60	51
4		B.Tech. Information Technology	Four Year	12 th + CET	English	60	63
5		B.Tech. Mechanical Engineering	Four Year	12 th + CET	English	60	63
6	Post Graduate	M.Tech. Electronics & Telecommunication	Two Year	B.E./B.Tech	English	18	18
7		M.Tech. Instrumentation	Two Year	B.E./B.Tech	English	18	09
8	Ph.D.	Electronics & Telecommunications Engineering	N.A.	M.E./M.Tech. + Entrance Exam. /	English	--	01

13. Does the institution offer self-financed Programmes?

Yes No

If yes, how many?

14. Whether new programmes have been introduced during the last five years?

Yes No

If yes

Number	1
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15. List the departments:

Particulars	Number	Total Number of Students admitted in the program
Computer Engineering	Undergraduate	1
	Post Graduate	0
	Research Centre(s)	0
Electronics & Telecommunications	Undergraduate	1
	Post Graduate	1
	Research Centre(s)	1
Instrumentation & Control	Undergraduate	1
	Post Graduate	1
	Research Centre(s)	0
Information Technology	Undergraduate	1
	Post Graduate	0
	Research Centre(s)	0
Mechanical Engineering	Undergraduate	1
	Post Graduate	0
	Research Centre(s)	0

16. Are there any UG and / or PG programmes offered by the College, which are not covered under Autonomous status of UGC? Give details.

The College has become Autonomous from the Academic Year 2016-17. In the Academic Year 2016-17, first year of Undergraduate & Postgraduate

programs are covered under Autonomous Status. These programs will be covered under Autonomous Status in progressive manner.

17. Number of programmes offered under

- | | |
|---------------------|--------------------------------|
| a. annual system | <input type="text"/> |
| b. semester system | <input type="text" value="7"/> |
| c. trimester system | <input type="text"/> |

18. Number of Programmes with

- | | |
|---------------------------------------|--------------------------------|
| a. Choice Based Credit System | <input type="text"/> |
| b. Inter / Multidisciplinary Approach | <input type="text" value="5"/> |
| c. Any other (specify) | <input type="text"/> |

19. Unit cost of Education

- | | |
|-----------------------------------|--|
| a. including the salary component | <input type="text" value="Rs.1,22,000/-"/> |
| b. excluding the salary component | <input type="text" value="Rs.39,000/-"/> |

20. Does the College have a department of Teacher Education offering NCTE recognized degree programmes in Education?

Yes No

21. Does the College have a teaching department of Physical Education offering NCTE recognized degree programmes in Physical Education?

Yes No

22. Whether the College is offering professional programme?

Yes No

(AICTE approval is enclosed as annexure – 3)

23. Has the College been reviewed by any regulatory authority? If so, furnish a copy of the report and action taken there upon.

The College has not been reviewed by any regularity authority in the last 5 years.

24. Number of teaching and non-teaching positions in the College

Positions	Teaching Faculty						Non-Teaching Staff		Technical Staff	
	Professor		Associate Professor		Assistant Professor		M	F	M	F
	M	F	M	F	M	F	M	F	M	F
Sanctioned by the UGC / University / State Government	18		35		108		NA		NA	
Recruited	3	9	5	5	40	89	0	0	0	0
Yet to recruit	6		25		0		0		0	
Sanctioned by the Management / Society or other authorized bodies	0	0	0	0	3	0	73	41	12	39
Recruited	0	0	0	0	1	2	73	41	12	39
Yet to recruit	0	0	0	0	0	0	0	0	0	0

25. Qualifications of the teaching staff

Highest Qualifications	Professor		Associate Professor		Assistant Professor		Total
	Male	Female	Male	Female	Male	Female	
Permanent Teachers							
D.Sc. / D.Litt.	0	0	0	0	0	0	0
Ph.D.	3	7	5	5	1	5	26
M.Phil.	0	0	0	0	0	0	0
PG	0	0	0	0	31	61	92
UG	0	0	0	0	4	6	10
Temporary Teachers (Adhoc)							
Ph.D.	0	2	0	0	1	2	5
M.Phil.	0	0	0	0	0	1	1
PG	0	0	0	0	4	16	20
Part-time Teachers							
Ph.D.	0	0	0	0	0	0	0
M.Phil.	0	0	0	0	0	0	0
PG	0	0	0	0	0	0	0

26. Number of visiting Faculty / Guest Faculty engaged the College.

5

27. Students enrolled in the College during the current academic year i.e. 2016-17, with the following details.

Students	UG		PG		Integrated Masters		M.Phil		Ph.D.		Integrated Ph.D.		D.Litt / D.Sc,		Certificate		Diploma		PG Diploma	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
From the state where the College is located	0	2409	0	54	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
From other states of India	0	138	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NRI students	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Foreign students	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	2547	0	54	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

28. Dropout rate in UG and PG (average for the last two batches)

UG PG

29. Number of working days during the last academic year:

30. Number of teaching days during the last academic year:

31. Is the College registered as a study center for offering distance education programmes for any University?

Yes No

32. Provide Teacher-Student ratio for each of the programme / course offered

S.N.	Name of the Program / Course	Teacher student ratio
1	B.Tech. Electronics & Telecommunication	1:14
2	B.E. Computer Engineering	1:17
3	B.E. Instrumentation & Control	1:15
4	B.E. Information Technology	1:14
5	B.E. Mechanical Engineering	1:13
6	M.Tech. Electronics & Telecommunication	1:12
7	M.Tech. Instrumentation & Control	1:12

33. Is the College applying for?

Accreditation: Cycle 1 Cycle 2 Cycle 3 Cycle 4

Re-Assessment:

34. Date of accreditation* (applicable for Cycle 2, Cycle 3, Cycle 4 and re-assessment only)

Cycle 1: National Assessment & Accreditation Council (NAAC)
Dated 15th May, 2002: Grade 'B'

Cycle 2: National Assessment & Accreditation Council (NAAC)
Dated 14th September, 2012: Grade 'A'

(Accreditation certificates are enclosed as Annexure – 5)

35. a. Date of establishment of Internal Quality Assurance Cell (IQAC)

26th September, 2011

Dates of submission of Annual Quality Assurance Reports (AQARs):

AQAR 2009-10 submitted to NAAC on 26/09/2011
AQAR 2010-11 submitted to NAAC on 31/01/2012
AQAR 2011-12 submitted to NAAC on 11/07/2012
AQAR 2012-13 submitted to NAAC on 31/10/2013
AQAR 2013-14 submitted to NAAC on 29/11/2014
AQAR 2014-15 submitted to NAAC on 29/12/2015
AQAR 2015-16 submitted to NAAC on 12/06/2016

Criterion-wise Analytical Report

Criterion I CURRICULAR ASPECTS

1.1 Curriculum Design and Development:

1.1.1 How are the institutional vision / mission reflected in the academic programs of the College?

Following are the *vision* and the *mission* of the Institution:

Vision: *To be globally renowned institute for imparting quality education and to develop women leaders in engineering and technology.*

Mission: *To develop women professionals who are academically competent with strong professional ethics.*

The stated vision and mission of the Institution are reflected in its academic programs as follows:

1. The Institution is a women engineering college offering UG, PG and Ph.D. courses under different branches of engineering. Given a relatively lesser percentage of women engineers and consequently a very few women leaders in the technology sector in India, a women engineering college contributes towards enhancing the percentage of women engineers in the country.
2. Since last 25 years, right from its conception, the institution has always been quality conscious in imparting education. The internal quality assurance cell (IQAC) of the institution plays an active and instrumental role in monitoring the quality pertaining to all the related aspects of education, teaching and learning.
3. The *framing* of curricula and the expected *outcomes* for different subjects under each branch are decided by applying respectively the *knowledge* and the *cognition* dimensions proposed in the revised Bloom's taxonomy (RBT). The curriculum also takes into account the internationally recognized and expected attributes of the graduates in engineering.
4. The implementation of RBT in structuring the teaching and the evaluation methodologies for each subject leads not just to an elementary level preparation of a engineering graduate but also provides her with the base for becoming a leader in her chosen field of study.
5. The contents and the depth of the foundational, the core and the elective subjects under each of the engineering branches focus on the academic and the technical competency of our students.
6. Finally, mandatory / audit subjects such as 'value education' and 'environmental studies' ensure the development of strong professional ethics among students.

1.1.2 Describe the mechanism used in the design and development of the curriculum? Give details on the process. (Need Assessment, Feedback, etc.)

As an autonomous institute affiliated to the Savitribai Phule Pune University, the college has designed and developed curricula for the following branches:

Computer Engineering

Electronics and Telecommunication Engineering

Instrumentation and Control Engineering

Information Technology

Mechanical Engineering

The design and the development of curricula included intensive brainstorming sessions, series of subject-specific discussions and also survey of academic as well as industrial trends done by the faculty members of the institute by actively involving external experts. The details of this entire process are as follows:

1. **Formation of the Core Committee:** The director formed a core committee of senior faculty members, mainly consisting of the Heads of departments, to monitor the overall process of college undergoing the transition to autonomous status.
2. **Design of the Overall Curriculum Structure:** The members of the core committee formed groups consisting of departmental faculty members and experts from industries as well as academia – who are also the members of the boards of studies (BOS) and the academic council (AC). Through their constant interaction, these groups arrived at the overall curriculum structure for the college, by following the UGC and the AICTE guidelines. The arrival at the curriculum structure involved decisions pertaining to the *types of subjects*, (e.g. basic sciences and humanities related subjects, branch-wise core and elective subjects, open electives and also mandatory subjects), *teaching scheme* (in terms of number of contact hours for lectures / tutorials / practicals etc.), *examination scheme* (in terms of mark-distribution over In-Semester and End-Semester exams) and *credits* for different subject-types.
3. **Assessment of ‘need’ in framing syllabi:** In the discussions for framing syllabi, the industrial and societal needs were taken into account by considering the inputs, especially from all the relevant stakeholders, such as industry experts, parents, alumni and also the members of Board of Studies and Academic Council.
4. Considering the inputs of stakeholders and experts, syllabus was framed and drafted in the BOS meetings, which was presented to the academic council for approval.
5. **Presentation to the Governing Body:** The curriculum structure finalized by the academic council was presented ultimately to the governing body of the institute for its approval and implementation.
6. **Feedback:** The institute has a policy to collect students’ feedback on the implemented curriculum at the end of each academic year.

1.1.3 How does the College involve industry, research bodies, and civil society in the curriculum design and development process? How did the College benefit through the involvement of the stakeholders?

The college involves experts from industry, research bodies and civil societies in the curriculum design and development process by inviting them as the members of boards of studies (BOS) for different engineering branches, for basic sciences and humanities and also as the members of the academic council. Through periodically conducted BOS meetings, these experts provide valuable guidance and suggestions pertaining to modifications in the contents of different courses.

The role of the stakeholders has always been catalytic in identifying cutting edge directions and futuristic trends in technology. The institute also benefits from the inputs from civil societies mainly in terms of identification of societal issues, where engineering solutions are required.

1.1.4 How are the following aspects ensured through curriculum design and development?

Employability: To enhance employability, the institute's curriculum specifically focusses on facilitating self-learning among students and also on developing life-long learnability to adopt latest technologies as per the requirements of Industry. While designing the curriculum latest trends in the technology are considered. The curriculum design also includes students' development of soft-skills.

Innovation: The curriculum is designed to develop observational, analytical and numerical skills of the students. Also, in particular, the teaching methodology implemented in the laboratory courses provides flexibility and scope for the individual ways of performing the lab sessions, thereby nurturing her innovative abilities.

Research: It is essential for a student to develop awareness and understanding of her own thought processes in order to cultivate research aptitude. The design and development of the institute's curriculum ensure this aspect by including the *meta-cognitive type of knowledge* in the course contents for the corresponding subject-area, apart from factual, conceptual and procedural types of knowledge – classified according to the revised Bloom's taxonomy. Development of meta-cognitive type of knowledge manifests itself in the institute's curriculum in the form of teacher-student classroom interactions on the open issues and unsolved problems in the subject-area of the course and also in terms of construction of and discussion on exercises that allow *subjective* responses.

1.1.5 How does the college ensure that the 'curriculum developed' addresses the needs of the society and have relevance to the regional / national developmental needs?

Through its curricular structure, the institute ensures development of competent human resources, as per the requirements of engineering sector at the regional and the national level. For achieving this, the institute has been involving experts from

academia and industry in the process of curriculum development to get to know the upcoming trends.

As a consequence of such interactions the institute has been keen in organizing academic activities in areas such as internet of things (IoT) and network security. Various courses having social relevance from the areas such as biomedical engineering, renewable energy, business analytics, environmental studies and value education form an integral part of the curriculum. The institute also consciously encourages student projects, devoted for solving community problems, initiated via the program known as 'Engineering Projects in Community Services' (EPICS) in association with Purdue University, USA.

1.1.6 To what extent does the College use the guidelines of the regulatory bodies for developing or restructuring the curricula? Has the College been instrumental in leading any curricular reform which has created a national impact?

AICTE has published guidelines for curricular development. Also, NBA model of 'Course Outcomes – Program Objectives' and for graduate attributes have been implemented.

In its recently acquired autonomous status, the institute is gearing up for a curricular reform in terms of –

1. Critical implementation of both the *knowledge* as well as the *cognition* dimensions proposed in the revised Bloom's taxonomy and,
2. Emphasis on teaching methodologies which would stimulate self-learning and would develop life-long learnability

1.2 Academic Flexibility:

1.2.1 Give details on the following provisions with reference to academic flexibility –

Flexibility to change the branch of engineering: Students – admitted as per their choices of engineering branch. First year courses are common for all branches; at second year level, students have choice to change their branch. From third year, students have flexibility in selecting elective courses. They also have flexibility in opting for enrichment courses / training.

a. Core / Elective Options: At third and final year level, students can opt subjects of their choice under the categories of core electives and open electives. The students of the same department can opt core electives offered by their respective departments. Open electives provide flexibility to the students to study courses at the interface of different engineering branches. Program elective and open elective subjects, form about 20% of the total number of courses.

b. Enrichment Courses: In addition to their regular curriculum, the students can register for enrichment courses such as workshops conducted by professional societies and industries, certifications offered by Microsoft, CISCO ANSYS.

c. Courses Offered in Modular Form: Not offered – at present

d. Credit Transfer and Accumulation Facility: Institute has signed MOUs with foreign universities for academic activities. Institute is looking forward to offer credit transfers under these MOUs.

1.2.2 Have any courses been developed specially targeting international students? If so, how successful have they been? If ‘no’, explain the impediments.

The curriculum developed by the institute is as per the international relevance. However, the institute has not applied for international students’ intake to the All India Council for Technical Education (AICTE).

1.2.3 Does the College offer dual degree and twinning programmes? If yes, give details.

At present, the college does not offer any dual degree or twinning program.

1.2.4 Does the College offer self-financing programmes? If yes, list them and indicate if policies regarding admission, fee structure, teacher qualification and salary are at par with the aided programmes?

All the UG and PG programmes offered by the college are self-financing programmes.

The institute offers **Undergraduate (B. Tech.) Programmes** in:

1. Computer Engineering
2. Electronics and Telecommunication Engineering
3. Information Technology
4. Instrumentation and Control Engineering
5. Mechanical Engineering

The institute offers **Postgraduate (M. Tech.) Programmes** in:

1. Electronics and Telecommunication Engineering
2. Instrumentation and Control Engineering

Besides these programmes, the institute also offers **Ph. D. programme** in Electronics and Telecommunication Engineering.

The first year admission process is conducted as per the directives of the state government. Students are admitted on the basis of their performance in the entrance examinations conducted by the state as well as central government. ‘Fee Regulating Authority’ appointed by the state government finalizes the annual fee structure.

Teachers’ qualification and salary structure are as per the AICTE norms and are at par with the aided programmes.

1.2.5 Has the College adopted the Choice Based Credit System (CBCS)? If yes, how many programmes are covered under the system?

The college has not adopted the CBCS. However, the students have flexibility to choose among elective courses. Currently, it implements the credit based semester system (CBSS).

1.2.6 What percentage of programmes offered by the College as follows:

- **Annual system:** 0%
- **Semester system:** 100% (All the branches under the engineering degree program offered by the college follow semester system.)
- **Trimester system:** 0%

1.2.7 What is the policy of the College to promote inter-disciplinary programmes? Name the programmes and what is the outcome?

The salient features of the policy of the college in promoting interdisciplinary studies are as follows:

1. The curriculum structure for the first year students is independent of the engineering branch they are admitted to. Hence, for example, a computer engineering student also gets an opportunity to learn the basics of, say, mechanical engineering at the first year.
2. All the students, irrespective of their engineering branches, get an opportunity to study the basic sciences courses (mathematics, physics and chemistry). From second year onwards, the students also get exposure to courses such as principles of management, finance etc.
3. Under the 'open electives' category also interdisciplinary courses are available and students can register for the courses of their choice irrespective of their engineering branch.
4. The institute also encourages students to take up interdisciplinary projects for their final year.
5. Apart from this, institute provides opportunity for students to register for interdisciplinary enrichment courses.
6. The outcome of all the above provisions is observed to be reflected in terms of readiness of the students for industrial careers and interdisciplinary research projects.

1.3 Curriculum Enrichment:

1.3.1 How often is the curriculum of the College reviewed for making it socially relevant and/or job oriented / knowledge intensive and meeting the emerging needs of students and other stakeholders?

The institute has planned the review of the curriculum, to make it socially relevant, job oriented and knowledge intensive, after every two academic years. Its implementation is being reviewed at the end of every academic year.

1.3.2 How many new programmes have been introduced at the UG and PG level during the last four years? Mention details.

- **Inter-disciplinary:** NIL
- **Programmes in emerging areas** – Ph. D. program addressing research in the emerging areas of Electronics and Telecommunication

1.3.3 What are the strategies adopted for revision of the existing programmes? What percentage of courses underwent a major syllabus revision?

The institute has acquired the autonomous status only recently. In years to come, the institute will affirmatively consider revisions of the existing programs / major syllabus revision based on the feedback from all its stakeholders.

1.3.4 What are the value-added courses offered by the College and how does the College ensure that all students have access to them?

- At second year level, a soft skills training programme is offered to the students coming from rural and vernacular background. This programme is offered with the help of EATON and CII (confederation of Indian industries).
- Curriculum also includes soft skill training for the students.
- At third year level, for all students ‘Employability Enhancement Programme’ is offered. This **40-hour** programme includes modules such as resume writing, group discussions, personality analysis, communication skills, higher studies opportunities, innovation and patenting.
- The college offers quantitative aptitude development training for the interested students.
 - All the above courses are available to all the students without charging any fees.

In addition to above courses, the college conducts workshops and seminars on technical topics.

1.3.5 Has the College introduced any higher order skill development programmes in consonance with the national requirements as outlined by the National Skills Development Corporation and other agencies?

Based on the latest ‘Skill Gap’ report published by the NSDC and appropriate to the programmes offered, the institute has identified **THREE** main heads (*Technical Skills, Practical knowledge and use of latest machinery and equipment* and *Soft Skills*) under which consciously monitored student development is needed. The college has taken efforts to bridge the gaps through its curricular and co-curricular activities.

1. **Technical Skills:** The curriculum of the institute has ample emphasis on laboratory courses aimed at developing the technical skills of the students.
2. **Practical knowledge and use of latest machinery and equipment:** All the laboratories are equipped with instruments and apparatus based on latest technology. The laboratory courses aimed at providing hands-on training of the same to the students.

3. **Soft Skills:** The institute offers a variety of enrichment courses which help students develop attributes such as team building, communication skills, time management, leadership skills, coding (- by involving usage of the latest high end software tools)

1.4 Feedback System:

1.4.1 Does the College have a formal mechanism to obtain feedback from students regarding the curriculum and how is it made use of?

The institute does have a formal mechanism to obtain feedback from students on the curriculum. Such a feedback is obtained from the students at the end of every academic year. Such a feedback is used to make modifications in the curriculum, if required.

1.4.2 Does the College elicit feedback on the curriculum from national and international faculty? If yes, specify a few methods adopted to do the same - (conducting webinar, workshop, online forum discussion etc.). Give details of the impact on such feedback.

The institute has a formal mechanism to elicit feedback on curriculum from national faculty. The external members of the BOS and the Academic Council of the institute are affiliated to the institutes across nation. They give their feedback on curriculum in their respective meetings. Depending on the need for specific subjects, the institute invites feedback from faculty from other institutes via email communication as well. The institute makes use of the feedback for making modifications in the curriculum to attain national and international standards.

1.4.3 Specify the mechanism through which alumni, employers, industry experts and community give feedback on curriculum enrichment and the extent to which it is made use of.

Alumni and experts from industry as well as community are members of the IQAC of the institute. These members get an opportunity to express their views on curriculum enrichment in the IQAC meetings. Employers and industry experts are the members of the BOS and the Academic Council of the institute. They give their feedback on curriculum in their respective meetings. During the process of recruitment, the institute also obtains feedback on the existing curriculum and its enrichment from the employers.

1.4.4 What are the quality sustenance and quality enhancement measures undertaken by the institution in ensuring effective development of the curricula?

1. **Measure for Quality Sustenance – Implementation of RBT:** To sustain the quality of the curriculum, the *knowledge* dimension of the revised Bloom's Taxonomy (RBT) is considered. **Via periodically conducted IQAC meetings**, the institute monitors the inclusion, in the curriculum, of all the four categories of

this dimension proposed in the RBT, viz. *factual* knowledge, *conceptual* knowledge, *procedural* knowledge and *metacognitive* knowledge. The quality sustenance for the curriculum is measured in terms of appropriately defined weightage corresponding to these four knowledge dimensions for every subject.

2. **Measures for Quality Enhancement –**

a. Comparison with leading institutes: For the enhancement in the quality of the curriculum, the institute has been consciously comparing its curriculum with leading technology institutes such as IITs and even with leading engineering institutes across the globe. This comparison has mainly been in terms of choice of courses for the students, course-titles and course-contents.

b. Feedback from stakeholders: Feedback from stakeholders is an important measure for the enhancement of quality of the curriculum.

c. Student Readiness for careers in engineering field and higher education: This aspect is measured in terms of number of job offers and number of students pursuing higher studies.

Criterion II

TEACHING, LEARNING AND EVALUATION

2.1 Student Enrolment and Profile:

2.1.1 How does College ensure publicity and transparency in the admission process?

Maharshi Karve Stree Shikshan Samastha's, renowned group of education institutions for more than 100 years, started Cummins College of Engineering for Women in 1991. Maharashtra state government regulates engineering admissions through centralized admission procedure. For this purpose, the government publishes brochure and booklet, which include information of all the colleges as well as rules and regulations for admission. Booklet also mentions the website addresses of all the colleges. Information of all the facilities, fee structure, academics is available on college website: www.cumminscollege.org. Announcements related to admissions are advertised in newspapers also. As state government regulates and monitors entire admission procedure, transparency in the procedure is maintained.

2.1.2 Explain in detail the process of admission put in place for UG, PG and Ph.D. programs by the College. Explain the criteria for admission (Ex. (i) merit, (ii) merit with entrance test, (iii) merit, entrance test and interview, (iv) common test conducted by state agencies and national agencies (v) others followed by the College?

Maharashtra state government regulates engineering admissions for UG and PG in maharashtra through centralized admission procedure. Aspiring students apply on admission web portal. While application students give order of preferences of colleges as well as courses. Students can give list of hundred colleges while application. Based on the merit with entrance test conducted by state government as well as test conducted at national level, seats are allotted by automated system. Admissions are purely based on merit with entrance test at state and national level.

For 20 % seats students apply directly to the college. On the basis of merit with the entrance test, institute allots the seats.

Students for Ph. D. programs are admitted on the basis of entrance examination conducted either by Savitribai Phule Pune University or on the basis of GATE score.

2.1.3 Does the College have a mechanism to review its admission process and student profiles annually? If yes, what is the outcome of such an analysis and how has it contributed to the improvement of the process?

The admission rules and regulations are laid down and the admission process (allotment) is carried out by DTE, Govt. of Maharashtra. As students do not apply directly to the college, analysis of student applications and their preferences is not possible. However, the college takes feedback of admitted students on preference order, reasons for opting the college etc.

2.1.4 What are the strategies adopted to increase / improve access to students belonging to the following categories?

As stated above, the admissions are executed by the DTE as per the rules and regulations considering reservations for categories.

- **Students from SC/ST Category:** During admission, seats are reserved for categories like SC, ST, DT, NT, OBC etc. as per the quota approved by the Central and State Government. Moreover, to encourage them government reimburses their fees.
- **Women:** Cummins College is Country's first Engineering College exclusively for women.
- **Different categories of persons with disabilities:** A few seats are reserved for disabled students.
- **Economically weaker sections:** Concession in fees up to 50 % is provided by the Government for economically backward class (EBC) students. The college provides financial assistance to the needy students.
- **Outstanding achievers in sports and extracurricular activities:** The College allocates funds exclusively for sports and extracurricular activities. Students that participate in University level and National level sports events get additional marks in the examination. The college has instituted **Sudha Murthy Scholarship** to encourage students in sports and also provides External Coach Facility.

2.1.5 Furnish the number of students admitted in the College in the last four academic years:

Categories	Year 1 (2016-17)	Year 4 (2015-16)	Year 3 (2014-15)	Year 4 (2013-14)
SC	253	282	265	233
ST	18	27	33	32
OBC	442	442	453	438
General	1616	1665	1672	1690
Others	274	293	287	248

Total	2603	2709	2710	2641
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2.1.6 Has the College conducted any analysis of demand ratio for the various programs offered by the College? If so, indicate significant trends explaining the reasons for increase / decrease.

The students do not directly apply to the college but apply for admission through the centralized admission process (CAP) conducted by DTE Government of Maharashtra. The number of ‘candidates applied’ and therefore the mentioned demand ratio cannot be computed. However, comparing scores of the last admitted candidates (cut-offs) demand ratio for various programmes can be predicted.

It is observed that, cut-off for mechanical engineering branch has increased in last few years. For Computer engineering and information technology the cut-offs are the highest.

2.1.7 Was there an instance of the College discontinuing a program during last four years? If yes, indicate the reasons.

No. None of the programs of the college has been discontinued in last four years.

2.2 Catering to Student Diversity:

2.2.1 Does the College organize orientation / induction program for freshers? If yes, give details of the duration of program, issues covered, experts involved and mechanism for using the feedback in subsequent years.

Every year the college organizes an Induction Program of one week duration for the First Year students. It opens with the Director’s Address and includes –

- Introductory sessions conducted by faculty members (who are in-charges of various extra-curricular and professional activities taking place within college campus),
- Talks by the Training and Placement officer, Director of Physical education, Medical Practitioner etc.
- Orientation session by Librarian about library facilities and resources
- Orientation session by elected student representatives about student club and other extra-curricular activities
- Visit to the Maharshi Karve memorial
- Presentations by the Deans

In the presentations, the following points are discussed:

1. Organizational structure of the autonomous program
2. First year Course structure and Exam structure
3. Academic Calendar

4. Passing criteria, grading pattern, re-examination and summer term
During induction program, the rules and regulation brochure is distributed to the students.

2.2.2 Does the College have a mechanism through which the ‘differential requirements of student population’ are analyzed after admission and before the commencement of classes? If so, how are the key issues identified and addressed?

The college does not have mechanism to identify differential requirements of student population before commencement of classes. However, based on performance of students in the classroom, laboratory and In-Semester exams they are identified as slow and advanced learners:

Slow learners: These students are mentored by interactive sessions other than the regular classroom / laboratory contact hours.

Advanced learners: These students are provided with advanced information and challenging issues depending on their subjects of interest.

2.2.3 Does the College provide Bridge / Remedial / Add - on courses? If yes, how are they structured into the time table? Give details of the courses offered, department-wise/faculty-wise?

The college provides add-on and remedial courses to the students. Their details are as follows:

Add-on (Certificate) Courses Offered by the College: These are part of neither the University curriculum structure nor the institute’s autonomous curriculum structure:

- **‘Mobile Communication’ course by Ericsson** – This is an online course, offered to the students of Electronics and Telecommunication branch. To pass the exam conducted at the end of the course, students need to score a **minimum of 75% of total marks** in the exam. The certificate is globally recognized and fees are not charged for the same.
- **Soft Skill Courses:** To enhance employability of students, Eaton offers training in soft skills to **90** students of Cummins College every year.
- **Innovation, Employability skills Enhancement & career building programme:** This 40-hour program is conducted for all third year students in batches.

Add-on Courses for diploma students: The college conducts classes of Mathematics courses for the students admitted at the second year level coming from diploma engineering streams. These classes are conducted on weekends.

Remedial Sessions: For slow learners and weak students the college conducts remedial sessions as per the requirement.

2.2.4 Has the College conducted a study on the incremental academic growth of different categories of students; - student from disadvantaged sections of society, economically disadvantaged, physically challenged and slow learners etc.? If yes, give details on how the study has helped the College to improve the performance of these students.

College conducts creativity aptitude test conducted by 'Aspiring Minds'. Aspiring minds conducts similar test for many colleges across India. Performance of every student is compared with the national average before commencement of second and third year, and also at the end of the respective academic years. Variation in pre- and post-assessment indicates academic growth. This test is conducted for students of all categories at no cost. Based on the assessment report training needs are identified.

Considering these reports, it was observed that most of the students have low scores in quantitative aptitude. For improvement college started quantitative aptitude training.

2.2.5 How does the institution identify and respond to the learning needs of advanced learners?

The institution offers a variety of academic opportunities for advanced learners. Such students are identified by:

- Their performance in the class room.
- Performance in the examinations conducted at regular intervals throughout the semester.
- Participation in departmental activities.
- Prizes won in co-curricular and extracurricular activities.

To respond to the advanced learning needs of such students, the college provides the following opportunities:

Membership and participation in professional societies' activities: Advanced learners are encouraged to participate in the following student chapters:

- CSI (computer society of India)
- IEEE (Institute of Electrical and Electronic engineering)
- ISA (International Society of automation)
- The IET (The Institution of Engineering and technology)
- SAE (Society of Automotive Engineers)
- ACM Women (Association of Computing Machinery Women)

The college pays 50% of the charges towards membership of IEEE and The IET. Various presentations, workshops, Guest lectures, project competitions are organized by these student chapters.

Participation in national level competitions: The college encourages advanced learners to participate in intercollegiate events such as IIT-Techfest, ROBOCON, BAJA, CONCEPTS, IMPETUS.

Cummins Fellowship Programme: College has signed MOU with Purdue University. Under this MOU, four students are selected for masters' programme at Purdue. Fellowship offered to these students covers tuition waiver and other expenses.

Scholarships for higher education: College has signed MOUs with LaTrobe University, Deakin University and Carnegie Mellon University, Australia. Under this MOU, students get scholarships for pursuing their higher studies in these universities.

2.2.6 How does the institution cater to the needs of differently-abled students and ensure adherence to government policies in this regard?

Engineering being a professional course, the college rarely comes across differently-abled students. However, if required, the college caters to the needs of differently abled students by the following means and ensures adherence to government policies:

- The state government has reservation policies in admission process for differently abled students – Thus the college, during the admission process, follows the same.
- Ramps are built and lift facilities are available at the entrance of all the buildings in the campus.
- During examinations writers are provided.
- Depending on the case the examination duration could be extended.

2.3 Teaching-Learning Process:

2.3.1 How does the College plan and organize the teaching, learning and evaluation schedules? (Academic calendar, teaching plan and evaluation blue print, etc.)

Academic Calendar: The Academic Calendar is prepared well in advance for the entire year and is uploaded on the college website. The Academic Calendar consists of dates for commencement of classes for odd and even semesters, dates for commencement of internal tests, holidays, last working day for UG and PG programs, commencement of end semester practical and theory examinations, total number of working days etc.

Course Allotment: Courses are allotted at the department level by the Head of the Department well before the commencement of classes for each semester. It is done on the basis of expertise and interest of the faculty members.

Time Table: The timetable is planned before the commencement of classes for each semester. There is a time table coordinator for each department who ensures that the departmental time-table is prepared as per the curriculum structure and is received by all the concerned course instructors. The master time table coordinator, appointed to look after the time-table for the entire institute, ensures whether the schedule for academic activities is without any inconsistencies / clashes.

Teaching Plan: For every course the faculty members prepare a Lecture Plan consisting of Course Objectives, Course Outcomes, Number of hours required to complete each topic, unit, schedule of assignments, quizzes etc. Similar planning exists for the laboratory sessions, tutorials, mini-projects and projects.

Evaluation Plan: Every semester, for every course two internal examinations (T1 and T2) are conducted. At the end of the semester End-semester examination is conducted. Academic calendar includes schedule of T2 and End-semester examinations. However, faculty members plan schedule as well as mode of T1. Rules and Regulations pertaining to evaluation of students under various courses are informed to them at the beginning of each semester.

2.3.2 Does the College provide course outlines and course schedules prior to the commencement of the academic session? If yes, how is the effectiveness of the process ensured?

The outline and schedule for each course is communicated to the students at the beginning of each semester. The same is published on the college website as well. The Head of the Department appoints a subject in-charge for each course and mentors for each division. The subject in-charges and mentors monitor that the outline and schedule for the courses is clearly communicated to the students.

Division-Mentors, through their meetings conducted with the students ensure the same.

2.3.3 What are the courses, which predominantly follow the lecture method? Apart from classroom interactions, what are the other methods of learning experiences provided to students?

Theory courses, for which the teaching scheme is only in terms of lectures (as per the structure), predominantly follow the lecture method. Apart from classroom interactions, a number of learning experiences are provided to the students. These are –

1. Laboratory Courses
2. Social learning platforms such as WIKSATE
3. Seminars and Projects
4. Technical Competitions such as ‘BAJA’, ‘Innovation’, ‘Techfest’, ‘Robocon’
5. Group Assignments
6. Group Presentations, Group discussions / Brainstorming sessions
7. Industrial Field Visits / Internships
8. NPTEL videos
9. Guest lectures

2.3.4. How is ‘learning’ made more student-centric? Give a list of participatory learning activities adopted by the faculty that contribute to holistic development and improved student learning, besides facilitating, life-long learning and knowledge management.

- In lectures, tutorials and in lab sessions, learning is made more student centric in the following manner:

In lectures: Teachers, by playing the role of facilitators, create discussions in classrooms among students and let the brainstorming evolve from students’ perspective.

In tutorials: Tutors attempt to stimulate students’ own ways of thinking, by constructing problems / case studies / assignments by providing individual attention to them.

In lab sessions: In lab sessions students get hands-on experience which help them gain clarity of concepts and enhance technology skill sets.

- **Collaborative Learning:** In mini projects and final year projects students develop prototype solutions for engineering problems. They learn by collaborating with each other.
- **Industrial field trips** which form a part of the curriculum ensure involvement and participation of the students to know practical aspects of engineering.

- **Student seminars** provide opportunity for self-learning and improve presentation skills.
- **Industry internship** is the opportunity for on-sight training and gives exposure to engineering field.
- **Technical associations, professional societies and clubs** (such as IEEE, IET, SAE, CSI) functioning with the students as the executive committee members and the faculty taking up the role of a facilitator helps for developing – Organizational abilities, Leadership qualities, Time and Financial management, Inter personal communication.
- Homework, self-study assignments encourage them to explore their own abilities and in the process, inculcate the habit of lifelong learning.

2.3.5. What is the College policy on inviting experts / people of eminence to provide lectures / seminars for students?

Experts from industry are invited to deliberate industry relevance of the curricular topics and also for informative sessions on latest technology. Talks of eminent personalities from R & D institutes are organized to present ongoing research topics and futuristic trends research.

In last five years, the college organized about 250 such sessions.

2.3.6. What are the latest technologies and facilities used by the faculty for effective teaching? Ex: Virtual laboratories, e-learning, open educational resources, mobile education, etc.

The faculty members supplement the latest technologies with regular teaching for learning to be made more effective.

E-learning:

- **Digital Library:** College has subscribed E-journals and E-books. These resources can be accessed by faculty and students using any computer within the campus. While teaching faculty members utilize these resources.
- Simulation software such as MATLAB, ANSYS, CADENCE, COMSOL are used for teaching concepts effectively.
- Every classroom and laboratory are equipped with multimedia teaching aids, which can be used to access any e-resource during lectures and lab sessions.

- Students' email groups are formed. Faculty members use it to email lecture notes, assignments and to answer their queries.

Audio Visual Aids – Teachers effectively make use of audio visual aids to make learning a satisfying experience for the students.

Open Educational Resources:

- Faculty members refer to open lecture resources such as MIT open courseware, NPTEL lectures etc. to prepare lecture material.
- Every faculty member has dedicated desktop with internet access. Faculty members refer educational websites, forums, blogs for lecture preparation.
- Faculty members also make use of social learning platforms such as WIKSATE for teaching beyond classroom hours.

2.3.7. Is there a provision for the services of counselors / mentors / advisors for each class or group of students for academic, personal and psycho-socio guidance? If yes, give details of the process and the number of students who have benefitted.

- **Counselor:** Qualified counselor is appointed for personal and psycho-socio guidance to the students.
- **Mentors:** Students in a class are divided into groups. For every group one faculty mentor is allocated. These mentors conduct students' meetings in a semester to help them to sort out their academic / non-academic problems, if any. Depending on the severity of the issue, the students are directed to the counselor.
- **Advisors:** Dean – student affairs, Heads of the departments and the training & placement officer play role of advisors for academic development of the students.

2.3.8. Are there any innovative teaching approaches / methods / practices adopted / put to use by the faculty during the last four years? If yes, did they improve the learning? What methods were used to evaluate the impact of such practices? What are the efforts made by the institution in giving the faculty due recognition for innovation in teaching?

The faculty tries to bring innovation in teaching by use of social learning platforms, learning through projects, and teaching through analogy. The details are as follows:

Social Learning Platform: Faculty members use social learning platforms such as Wiksate to stay in touch with students online for addressing their queries by participating in various forums and also to share study material. Some of the faculty members also created learning contents and invited students to participate. Students learn through these leanings and can add comments, queries, and suggestions. They are also encouraged to add information and findings regarding these topics. Further, faculty members act as moderators for these courses and help students to understand the topics and solve their doubts.

Quizzes and Crossword: Faculty members conduct quizzes to test progress of students. An innovative way of learning was introduced by solving crossword puzzle based on terminologies involved in the subject.

Interactive Learning: Depending on the contents of the syllabus, the faculty members facilitate methodologies such as group interactions and role play among the students to make learning interactive.

Learning by demonstration of APPS: Android application examples were developed for case studies in courses like Embedded Operating Systems. These were demonstrated in classroom.

Use of software testing and modeling: Faculty members design assignments to perform peer testing of the software projects. Similar to industry, such projects are developed by one team and given to another team for testing. During the testing lab, the students perform functional black box testing to test the interface of the system. In addition, the students also perform white box testing (code walk through) for the same project. The errors in the code are tested and the complexity of the code is determined. The faculty members motivate students to find most bugs / faults in code and interface of projects they test. In this way they get actual hands on for black box, white box and peer testing performed in the IT industry. This also builds interpersonal skills of the students. In the software modeling lab students are given a list of practical applications and design patterns. They are asked to think and come up with appropriate design pattern or an application. This helps students to understand software design process.

Learning through projects: Students learn the basics of search engine development in information retrieval subject. Faculty members motivate students to perform research based projects in various areas like information retrieval, Data mining, various searching and indexing techniques used in search engines such as Google. In project work, the students modify existing algorithms. This also helps learning process by building intellectual competence of the students.

Clicker Test: Some of the faculty members have used ‘clicker test’ (developed by IIT-Bombay) as an open source platform to conduct multiple choice examinations on android devices.

Games: Faculty members have developed various games to conduct sessions on soft skills.

All the above innovations in teaching have led to improvement in academic performance, performance in co-curricular activities, soft skills and industry readiness.

To implement innovative teaching practices, faculty members are provided with all types of support by the institute.

2.3.9. How does the College create a culture of instilling and nurturing creativity and scientific temper among the learners?

Creativity and scientific temper are instilled through –

Courses with focus on meta-cognitive knowledge: In the autonomous curriculum structure, the theory and the laboratory courses, right from the first year, focus on imparting meta-cognitive knowledge as per the fourth requirement of the knowledge dimension of the revised Bloom's taxonomy. The corresponding evaluation of students' learning is done in terms of questions pertaining to the higher levels cognition such evaluate and create.

Participation in Technical Competitions: Students are motivated to participate in various intercollegiate project contests, national level competitions such as BAJA, ROBOCON etc. Students are encouraged and supported to enroll for national creativity aptitude test (NCAT).

Publications and Patents: Students are motivated to publish their work in peer reviewed journals and also to present their work in National / International Conferences. Guidance is provided to the students to file patents.

Inter-departmental projects: Multi-disciplinary projects are encouraged to solve engineering problems, which helps to nurture students' creativity in an unconstrained manner.

'Innovative Minds' initiative: Activities are conducted for second year students to develop innovative approach by improving observational, analytical and problem solving skills.

2.3.10. Does the College consider student projects a mandatory part of the learning program? If so, for how many programs is it made mandatory?

Yes. Projects are mandatory for all UG and PG students as part of the curriculum itself.

Number of projects executed within the college:

Department		Number of students			
		2016/17	2015/16	2014/15	2013-2014
E&Tc.	B.E.	76	79	80	70
	M.E.	16	16	18	17
Instrumentation	B.E.	20	25	20	22
	M.E.	12	13	15	14
Computer Engg.		50	57	57	56
Mechanical Engg.		19	24	20	22
Information Tech.		18	21	23	21

Names of the leading external institutions associated with the College for student project work:

Department	Companies
Computer	<ul style="list-style-type: none"> • Persistent • IBM • TCS • Semantics • IIT • DRDO- R&DE • Principal finance • GS LAB • TATA Technology • Teconnectivity • Clarion • CV Ranker • BMC Software • Global super elite

	<ul style="list-style-type: none"> • Siemens
E&TC	<ul style="list-style-type: none"> • A.R.A.I(automotive research association of India Pune) • Aeron systems Pvt Ltd Pune • Cummins India Ltd Pune • DRDO- R&DE • Electronet process automation Pvt Ltd • Fennecfox technologies Pune • KPIT Cummins Ltd Pune • Forbes marshal Pune • Maven systems Pune • Twintech control system Pvt Ltd Pune • Indian Institute of Tropical Materiology, IITM(Pune) • Jambekar automations solutions Pune
Instrumentation	<ul style="list-style-type: none"> • KPIT cummins • Bharat electronics • Forbes Marshal • BEP engineers • SPA instruments • Tekson electronics • Uni-tech automation Pvt.Ltd • BEP engineers • IDG product development • DRDO • Chetas controls.Pvt.Ltd • Meccano • Mughdha Controls
I.T	<ul style="list-style-type: none"> • IBM • Persistent • Symantic • GS Lab • Barklays
Mechanical	<ul style="list-style-type: none"> • DRDO- R&DE Dighi • DRDO-ARDE Pashan

	<ul style="list-style-type: none"> • ARAI Pune • Forbes Marshall • Kirloskar Oil Engine Ltd • Cummins India Ltd
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Role of the faculty in facilitating such projects:

Faculty members supervise and facilitate students to complete their project work. Faculty members continuously review the projects and make recommendations.

2.3.11. What efforts are made to facilitate the faculty in learning / handling computer-aided teaching / learning materials? What are the facilities available in the College for such efforts?

Awareness through mails: Whenever a new facility is created in the college to enhance the teaching learning process or in terms of learning resources, the faculty members are made aware of the facilities via email communications.

Meetings: If usage of the facility demands an acquaintance session, a meeting of the faculty members is convened and the procedure for using the facility is disseminated.

Demo Sessions: Whenever a new computing facility/system is planned to be adopted by the college, the faculty members concerned are invited for a demo session of the product. Faculty members may become aware of the ways to use the product. Faculty may also suggest ways to customize the product to the existing processes followed in the college.

Hands-on Sessions: Hands-on sessions are conducted for faculty and non-teaching members when necessary.

2.3.12. Does the College have a mechanism for evaluation of teachers by the students / alumni? If yes, how is the evaluation used in achieving qualitative improvement in the teaching-learning process?

The college has an online-feedback mechanism for evaluation of teachers. The feedback is obtained from students at the end of every semester. It is in the form of a questionnaire consisting of 14 questions. The questions appearing in the feedback questionnaire aim to assess the performance of teachers with respect to aspects, such as effectiveness in explaining concepts, clarity in communicating concepts, organization of lecture contents, approachability of the teacher, outside classroom interactions for addressing queries from students etc. Each question corresponds to a certain weight factor and according to the response of students for a question marks obtained by the teacher for each question are listed in the feedback. At the beginning of the next semester, the entire feedback, finally expressed in terms of average marks, conveyed to the concerned teachers by the

Director along with the Head of the department. After going through the feedback, the Director and the Head suggests ways to improve the same.

2.3.13. Does the institution face any challenges in completing the curriculum within the planned time frame and calendar? If yes elaborate on the challenges encountered and the institutional approaches to overcome these.

In the autonomous structure, the academic calendar is prepared for the entire academic year and is communicated to all the faculty members well in advance. This helps them plan the engagement of their academic activities by anticipating the errors, if any.

Since the lectures / labs / tutorials are engaged regularly and as per the time-table, in most of the cases, the institution does not face any challenge in completing the curriculum within the planned time frame. However, sometimes, due to unanticipated circumstances, completing the curriculum could become challenging. In that case, the faculty members engage lecture and lab sessions on weekends or on weekdays beyond college hours to make up for the lags.

2.3.14. How are library resources used to augment the teaching-learning process?

Teaching and Research by Faculty Members: The library resources are used by faculty members to prepare the contents of their lectures, tutorials and laboratory sessions. They also make use of the facilities, such as journals, reference books, conference proceedings and digital library, for pursuing their research activities and also for guiding UG and PG projects.

Learning by Students: Library is utilized by the students to get acquainted with the recent trends in research in industry as well as in academia. The resources available in the library are used not only for their curricular requirements, but also for studies undertaken by them which require going beyond curriculum.

2.3.15. How does the institution continuously monitor, evaluate and report on the quality of teaching, teaching methods used, classroom environments and the effect on student performance.

Monitoring, Evaluation and Reporting of the Quality of Teaching: The subject in-charges / Heads of the departments continuously monitor the quality of teaching by faculty members via frequently held meetings. These meetings aim at discussing implementation of teaching methodology and problems faced by the faculty members, if any. The quality of teaching is evaluated in terms of the faculty members' score in students' feedback. Every semester the Director, through the interaction with individual faculty members, conveys the status of the student-feedback and also suggests ways for further improvement.

Apart from this, the director monitors the performance of faculty members by informally conducted meetings with the students.

Monitoring Students Performance: Performance of students in the in-semester and end-semester exams is monitored through result analysis.

2.4: Teacher Quality:

2.4.1. What is the faculty strength of the College? How many positions are filled against the sanctioned strength? How many of them are from outside the state?

The faculty strength of college during year 2016-2017 is 154. Most of the positions are filled against the sanctioned strength. Among the total strength 17 is the number of faculty from outside the state.

2.4.2 How are the members of the faculty selected?

In order to ensure quality in teaching, the College is following an appropriate procedure in recruiting the faculty members. The selection procedure and rules are as follows:

- The qualifications required for filling posts are determined by taking into consideration the norms prescribed by Govt. of Maharashtra / Affiliating University (SPPU) / AICTE / UGC.
- Posts are filled up by publishing an advertisement in national newspapers as per University Rules and Regulations.
- All Faculty positions are filled up by open competition. The selection is based on the recommendations of the University Staff Selection Committee duly constituted as per the norms of the Affiliating University.
- All temporary and ad-hoc positions are advertised in the newspapers. Based on the recommendations of the College Staff Selection Committee faculty members are appointed.

2.4.3. Furnish details of the faculty.

Highest qualification	Professor		Associate professor		Assistant professor		Total
	M	F	M	F	M	F	
Permanent teachers							
D.sc/ D.Litt	0	0	0	0	0	0	0
Ph.D	3	7	5	5	1	5	26
M.Phill	0	0	0	0	0	0	0

PG	0	0	0	0	31	61	92
UG	0	0	0	0	4	6	10
Temporary teachers							
Ph.D	0	2	0	0	1	2	5
M.Phill	0	0	0	0	0	1	1
PG	0	0	0	0	4	16	20
Part time teachers							
Ph.D	0	0	0	0	0	0	0
M.Phill	0	0	0	0	0	0	0
PG	0	0	0	0	0	0	0

2.4.4. What percentage of the teachers have completed UGC-CSIR-NET, UGC-NET, and SLET exams? In that what percentage of teachers are with PG as highest qualification?

The above-mentioned examinations are applicable only to the Basic Sciences faculty members of the college. In the year 2016-2017, 29.41% of basic sciences faculty have qualified UGC-CSIR-NET, UGC-NET & SLET. All faculty members are PG qualified.

2.4.5. Does the College encourage diversity in its faculty recruitment? Provide the following department-wise details. (in the last four years)

Department	Year	% of faculty who are product of the same college	% of faculty from other colleges within the state	% of faculty from other states	% of faculty from abroad
BSH	2016-17	0	77.77	22.22	0
	2015-16	0	80.76	19.23	0

	2014-15	0	77.77	18.51	3.70
	2013-14	0	84.00	16.00	0
Computer	2016-17	20.51	69.23	10.25	0
	2015-16	18.42	68.42	13.16	0
	2014-15	18.91	67.56	13.51	0
	2013-14	16.66	69.04	14.28	0
E n TC	2016-17	15.55	71.11	11.11	2.22
	2015-16	18.6	72.9	9.3	0
	2014-15	19.04	71.42	7.14	2.38
	2013-14	16.66	71.42	9.52	2.38
Instrumentati on	2016-17	50	43.75	0	6.25
	2015-16	50	43.75	0	6.25
	2014-15	47.05	41.17	5.88	5.88
	2013-14	43.75	43.75	6.25	6.25
IT	2016-17	20	66.66	13.33	0
	2015-16	20	66.66	13.33	0
	2014-15	21.40	64.32	14.28	0
	2013-14	21.40	64.32	14.28	0

Mechanical	2016-17	0	93.75	0	6.25
	2015-16	0	94.73	0	5.26
	2014-15	0	94.44	0	5.55
	2013-14	0	94.11	0	5.88

2.4.6 Does the College have the required number of qualified and competent teachers to handle all the courses for all departments? If not, how do you cope with the requirements? How many faculty members were appointed during the last four years?

The college has the required number of qualified and competent teachers as prescribed by AICTE to handle all the courses for all departments. The number of faculty members appointed during the last four years is as follows:

2016-17	2015-16	2014-15	2013-14
154	169	168	165

2.4.7 How many visiting Professors are on the roll of the College?

In the year 2016-17 there are 5 visiting professors on the roll of the college.

2.4.8 What policies / systems are in place to recharge teachers? (e. g. providing research grants, study leave, nomination to national/international conferences/Seminars, in-service training, organizing national/international conferences etc.)

Many college level policies are implemented to recharge the teachers, which have resulted in high level of retention of faculty. These involve –

- Two years of fully paid leave for pursuing doctoral work

- Fully paid sabbatical leave
- Procurement of necessary equipment, software etc. to promote in-house research activities
- Encouragement to attend FDPs / STTPs / Seminars / Workshops etc. (registration and to-and-fro travel fees sponsored by the college)
- Financial assistance up to 50,000/- for presenting paper in national / international level conferences; sponsorship to publish papers in National and International journals and also in the conferences proceedings
- On duty leave to attend Ph. D. related coursework
- Special leave for faculty members acting as resource persons in Conferences or as chair for technical sessions or attending university level BOS meetings
- Encouragement and financial support for organizing national / international level conferences / workshops

2.4.9. Give the number of faculty who received awards / recognitions for excellence in teaching at the state, national and international level during the last four years.

Following faculty members have received Best teacher award :-

- Prof. Manisha Jail from Basic sciences and humanities department have received best teacher award by Uttar Bhartiya Sangh, Pune in 2016-17.
- Prof. Sunil Divekar from mechanical department have received best teacher award by Uttar Bhartiya Sangh, Pune in 2016-17.

2.4.10. Provide the number of faculty members who have undergone staff development programs during the last four years:

Academic Development Programmes	Staff	Number of faculty			
		2016-2017	2015-2016	2014-2015	2013-2014
Refresher courses*		-	-	-	-

HRD programmes	30	8	10	2
Orientation programmes	34	42	28	21
Staff training conducted by the College	31	5	28	9
Staff training conducted by University/other Colleges	32	29	26	22
Summer / winter schools, workshops, etc.	4	1	6	3
Any other (please Specify)	0	1	4	0
Total	131	86	102	57

***Faculty members have attended refresher courses organized by ISTE-MHRD & other agencies. However, they have not attended refresher courses conducted by the UGC academic staff college in the last four years.**

2.4.11. What percentage of the faculty have been?

Percentage of faculty	Average of four years
Invited as resource persons in Workshops/Seminars/Conferences organized by external professional agencies	10.97%
Participated in external Workshops/ Seminars/Conferences recognized by national/international professional bodies	31.08%
Presented papers in Workshops/ Seminars/Conferences conducted or recognized by professional agencies	16.35%

Teaching experience in other universities/ national institutions and others	37.97%
Industrial engagement	44.15%

2.4.12 How often does the College organize academic development programs for its faculty, leading to enrichment of teaching- learning process?

The college management encourages organization of faculty development programs. College has organized 15 number of faculty development programs in past 5 years in collaboration with SPPU, AICTE, ISTE, CSI.

Curricular Development: For curricular development frequent meetings of faculty members are conducted. Invited lectures of eminent academicians are arranged. BOS meetings are conducted minimum twice a year for curricular development. Academic council meetings are also scheduled for development of curriculum.

Teaching-learning methods: College is one of the remote centers for the ISTE workshops conducted by the IITs. Under this facility a workshop on teaching-learning method was organized.

Examination Reforms: Meetings are conducted regularly to review the evaluation system. For theory courses the college conducts two in-semester examinations. Assessment Mode for one of the in-semester examinations can be either of the types such as open book tests, quizzes, projects, seminars, poster making, model preparation etc.

Content / Knowledge Management: Faculty members are made aware of the management of the content pertaining to their courses and also of the knowledge management policies of the college.

2.4.13. What are the teaching innovations made during the last five years? How are innovations rewarded?

A number of innovative teaching methods have been adapted for effective teaching. These efforts are encouraged by the college:

- Working models for demonstrating concepts
- Mini projects

- Game based teaching (Role play, quiz)
- Mathematical puzzles and riddles
- Group discussions / brainstorming at classroom level
- Use of social platforms such as WIKSATE for teaching
- Clicker Test: Some of the faculty members have used ‘clicker test’ (developed by IIT-Bombay) as an open source platform to conduct multiple choice examinations on android devices.

The college promotes and always supports such innovations in teaching.

2.4.14. Does the College have a mechanism to encourage

- **Mobility of faculty between institutions for teaching?**
- **Faculty exchange programmes with national and international bodies?**

The college does encourage faculty members to deliver talks and to engage in the research activities in external institutions.

Sr.No	Name of the faculty	College/institutions visited	Details
1.	Dr. Vikram Athalye	University of Turin, Turin, Italy	Research
2.	Dr. Vikram Athalye	Institute for Quantum Computing, University of Waterloo, Canada	Visiting scientist
3.	Prof. Chetana Gavankar	Monash university	Research
4.	Prof. Anagha Kulkarni	MIT, Pune	Teaching
5.	Prof. Chetana Gavankar	COEP, Pune	Teaching
6.	Prof. Harshad Wadkar	Institute of Engineers, Shivajinagar	Teaching
7.	Prof. Makarand velankar	Institute of Engineers, Shivajinagar, Pune	Teaching
8.	Prof. Manisha Jail	Dr. D. Y. Patil institute of engineering, Akurdi	Teaching

2.5 Evaluation Process and Reforms:

2.5.1. How does the College ensure that all the stakeholders are aware of the evaluation processes that are operative?

The college has published rules and regulations booklet, which includes examination and assessment related rules and regulations. College distributes this booklet to all the students on the very first day of academic session. Orientation programme is conducted by the college regarding the same for all students. Their queries are answered in orientation session as well as in classrooms. The rules and regulations are published on the college website. Parents' queries are addressed by Dean, Academics and Dean, Examinations. Relevant circulars are also displayed on college notice boards and website.

2.5.2. What are the major evaluation reforms initiated by the College and to what extent have they been implemented in the College? Cite a few examples which have positively impacted the evaluation management system?

The IQA cell of the college has structured the evaluation process for its autonomous courses by implementing the revised Bloom's Taxonomy (RBT), with an emphasis on testing higher levels of cognitions, such as the students' ability to analyze, evaluate and create. To effectively apply RBT for setting the question papers for various autonomous courses, the course instructors were asked to provide not only the unit-wise distribution of marks but also the level of cognition expected from the In-Semester and End-Semester examinations. **For example**, for the first year level BS 1202 Physics – II course, the following 'commitment chart' has been prepared by the course instructors. Here, C1 – C5 are the Cognitive Process Dimensions according to the revised Bloom's taxonomy (the 6th CPD, viz. Create is not included in this first year level course):

(C1 = Remember, C2 = Understand, C3 = Apply, C4 = Analyze, C5 = Evaluate)

← Distribution of Marks →									
Unit-wise		Exam-wise			CPD-wise				
Unit	W*	T1	T2	ESE	C1	C2	C3	C4	C5
I	12	4+4+4	0	0	3	4	2	2	1
II	13	0	4+4+5	0	3	4	2	2	2
III	12	0	0	4+4+4	3	4	2	2	1
IV	13	0	0	4+4+5	3	4	2	2	2
V	12	0	0	4+4+4	3	4	2	2	1
VI	13	0	0	4+4+5	3	4	2	2	2
Total →	75	12	13	50	18	24	12	12	09
	75	75			75				

*Weightage

2.5.3. What measures have been taken by the institution for continuous evaluation of students and ensuring their progress and improved performance?

The examination scheme for the autonomous courses consists of two components: 'In-Semester Examination (ISE)' and 'End-Semester Examination (ESE)'. For theory courses, the In-Semester Examination is conducted under two categories – 'Test-1' and 'Test-2'. These short duration tests are held each approximately after one-one month of teaching during the semester and hence, ensure continuous evaluation of students' performance.

For laboratory courses, students' performance in every session is evaluated on the basis of experiment / assignment performed, thereby ensuring the evaluation of the entire course on continuous basis throughout the semester.

The answer-books of T1 and T2 are made available to the students. Model answers are discussed in the class. This helps students to know their shortcomings and areas of improvement.

2.5.4 What percentage of marks is earmarked for continuous internal assessment?

Indicate the mechanisms strategized to ensure rigour of the internal assessment process?

S. No.	Type of Course	Marks for Internal Assessment	Mechanism Strategized
1	Theory Course	33 % to 50 %	In-semester Tests in the form of – paper-pencil, quizzes, poster making, model making, seminars etc.
2	Laboratory Course	0 % to 100 %	Performance of Experiment / Assignment, Inquisitiveness etc.
3.	Project Work	60 %	Project planning, documentation, completion, innovation etc.

2.5.5. Does the College adhere to the declared examination schedules? If not, what measures have been taken to address the delay?

Yes, the college adheres to the declared examination schedules.

2.5.6. What is the average time taken by the College for declaration of examination results? Indicate the mode / media adopted by the College for the publication of examination results e.g., website, SMS, email, etc.

For autonomous courses, the average time taken by the college for declaration of results is 8 working days, from the date of the last examination, for both the In-Semester and the End-Semester examinations. The college publishes the results on its website and also on the notice boards of the respective departments.

2.5.7. Does the college have an integrated examination platform for the following processes?

One of the faculty members from Cummins College took initiative to design highly customized integrated examination platform (web based portal), as per the needs and practices followed in the college. This online portal can be accessed from anywhere in the college (Intranet) as well as from anywhere outside the college (Internet).

Pre-examination processes:

College has an integrated examination platform using which examination time-table generation; invigilators' duties, attendance sheets etc. are generated. Examination section of the college office headed by Dean, Examinations performs all these activities well in advance.

Examination process:

During examination, students' attendance is captured.

Post examination process:

Post-examination integrated examination platform is used for marks entry, result preparation, result publication and result analysis. Finally, mark-sheets and certificate printing is done.

2.5.8. Has the College introduced any reforms in its Ph.D. evaluation process?

The evaluation process for Ph. D. programme is implemented as per the directives of SPPU.

2.5.9. What efforts are made by the College to streamline the operations at the Office of the Controller of Examinations? Mention any significant efforts which have improved process and functioning of the examination division/section?

Under the guidance of the Dean-Examinations the examination cell of the college conducts pre- and post-examination activities. To streamline the operations of the cell –

- Pre-examination activities such as exam time-table, hall-ticket printing, allocation of classrooms, assigning invigilation duties are carried out by using examination software.
- Question paper printing is done using heavy-duty printer and other equipment available with the examination cell. Purchase department helps in procurement of answer-books and other required stationary.
- After examination masked answer sheets are assessed by examiners centrally, which ensures impartial assessment.
- Marks entry, result preparation, result publication and result analysis are further carried out.

Significant efforts made towards improvement of the process and functioning of the examination cell include –

- Development of customized examination software
- Usage of heavy duty printer for fast printing
- Centralized assessment mechanism
- Availability of sufficient supporting staff

2.5.10. What is the mechanism for redressal of grievances with reference to evaluation?

For In-semester examinations, assessed answer-sheets are shown to students and concerned faculty members address the queries of the students. For End-semester

examination photocopy of the answer-sheets are made available to the students on demand. In case of any grievances revaluation of answer-sheets is done.

2.6 Student Performance and Learning Outcomes:

2.6.1 Does the College have clearly stated learning outcomes for its programs?

If yes, give details on how the students and staff are made aware of these?

The college has stated learning outcomes for its programme. While defining these outcomes graduate attribute requirements are considered. These are published on the website of the college as well as on the laboratory journals. Also, outcomes are clearly stated in classrooms as well as laboratories.

2.6.2 How does the institution monitor and ensure the achievement of learning outcomes?

The college ensures to facilitate students to achieve all the learning outcomes by providing the required resources. The Institution monitors the achievements of learning outcomes through the direct and indirect measures as given below:

Direct Measures:

- Performance in In-semester and End-semester examinations
- Innovations in project work

Indirect Measures:

- Performance in Co-curricular and Extra-curricular activities
- Number of in-campus job offers
- Recruiters' feedback
- Percentage of students enrolling for higher studies
- Research publications and patents of students

2.6.3 How does the institution collect and analyse data on student learning outcomes and use it for overcoming barriers of learning?

Following types of data are collected by the institute to analyze students' learning outcomes:

- In-semester and End-semester results

- Interaction with mentors and class-teachers
- Interaction during laboratory sessions and tutorials
- Students' feedback on teachers
- Recruiters' feedback
- Performance in technical competitions and competitive exams.

This analysis helps in identifying the attainment of students' learning outcomes. If it is not satisfactory accordingly efforts are taken to improve the teaching – learning process.

2.6.4 Give Programme-wise details of the pass percentage and completion rate of students.

UG Programmes	Pass Percentage			
Year	2015-2016	2014-2015	2013-2014	2012-2013
B.E. Computer Engineering	95.63	98.19	95.73	94.2
B.E. EnTC	93.94	98.28	96	92.75
B.E. Instrumentation & control	92.40	98.5	100	100
B.E. IT	93.54	96.77	98.18	96.82
B.E. Mechanical engineering	90.90	91.46	98.43	93.93
PG Programme	Passing percentage			

M.E EnTC	100	100	100	94.40
M.E Instrumentation	64.28	100	100	88.88

Criterion III

RESEARCH, CONSULTANCY AND EXTENSION

3.1: Promotion of Research:

3.1.1 Does the College have a research committee to monitor and address the Issues of research? If yes, what is its composition? Mention a few recommendations which have been implemented and their impact.

The Institute has formed a research committee recently. Composition of research committee is as follows:

Director (Chairperson)
Cummins Chair Professors
Dean – Research & Development
Dean – Academics
Dean – Quality Assurance
Dean – Student Affairs and
Academic Research Coordinator for SPPU

Few Recommendations of R&D Committee:

- Faculty should be facilitated to register for PhD program.
- Workshops/Lectures should be arranged periodically to motivate and guide faculty members to write research proposals for funding.
- Faculty members should publish research articles in the reputed journals/conferences.

Impacts:

- Faculty can avail paid study leave for PhD up to two years.
- Number of applications for funded research proposals is increased.
- Quality in research publications has improved.

3.1.2 What is the policy of the college to promote research culture in the college?

- Faculty members are encouraged to enroll in a PhD program.
- Faculty members enrolled for PhD can avail fully paid study leave up-to two years. Twenty-two faculty members have availed this facility.
- Faculty members are encouraged to present and publish papers in reputed

conferences and journals with financial support. Faculty members get up to Rs. 50,000 per paper towards the registration fees and travel expenses. Seventy faculty members got funding towards the publications in last five years.

- Faculty members are encouraged to apply for research funding to different agencies such BCUD, AICTE, DST, DRDO etc.
- Faculty members are encouraged to file patents. Financial support is provided to file the patents.
- Conduction of research area specific workshops/training programs are promoted.
- Consultancy culture is promoted by providing the faculty members 70% share of revenue earned through the consultancy.
- Budget is provided for High-end equipment required for the research work.

3.1.3 List details of prioritized research areas and the areas of expertise available with the College.

Expertise in the various departments is as follows:

Department	Expertise Area
Basic Sciences and Humanities	Quantum Physics, Relativity, Nanomaterial Synthesis, Organic Chemistry
Computer Engineering	Machine Learning, Cloud Computing, Multimedia, Bio-informatics, VLSI, High Performance Computing
Electronics and Telecommunication	Image & Signal Processing, VLSI Design, Computer Networks, Wireless Sensor Networks, Telecommunication
Instrumentation and Control Engineering	Emission Spectroscopy, Biomedical Engineering, Signal & Image Processing, Control Systems
Information Technology	Case Based Reasoning, WBSN and Signal Processing

Mechanical Engineering	Vibrations, Noise & Composites, Quality and Manufacturing Engineering
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3.1.4 What are the proactive mechanisms adopted by the College to facilitate smooth implementation of research schemes/projects?

- Seed money is provided for promoting research activity to the Principal Investigator.
- Advance funds are released as per the requirement of the projects sanctioned by external agencies.
- Autonomy is given to the principal investigator/coordinator to utilize overhead charges.
- Timely release of grants is facilitated.
- A timely annual external audit is conducted.
- Principal Investigator (PI) and Co-Principal Investigator (CO-PI) submit the utilization certificate along with the auditor's report, as per the prescribed format by the funding agencies.
- Implementation level problems faced by PI (if any) are discussed in research committee meetings.

3.1.5 How is an interdisciplinary research promoted?

- The college has five engineering departments. All final year students work on required outcome/problem statements given by Industry or faculty member as their project work. This requires inputs from interdisciplinary engineering fields. Faculty members and students take help of other departments' expertise and resources.
- Students are encouraged to undertake multidisciplinary engineering-projects related to areas such as biology, medicine, banking, psychology. With the help of faculty members and domain experts, students complete such projects. Some of such projects are listed below:

Sr. No.	Title of the Project
1	Classification of Human Emotions from EEG Signal using Support Vector Machine
2	Analysis of Breast Thermograms for Abnormality Detection
3	ECG Acquisition with VLSI Interface
4	Colour Analysis of Thermograms for Breast Cancer Detection

5	Classification of Human Emotions from EEG Signals using Neural Networks
6	Blood Pressure Measurement
7	Feature Extraction and Classification of EEG Signals
8	Secure M-Banking using Steganography
9	Secure E-tailing E-Commerce
10	E-Shopping Portal with Fraud Detection in Card Payments

3.1.6 Enumerate the efforts of the College in attracting researchers of eminence to visit the campus and interact with teachers and students?

Eminent scientists and professors are invited to visit the campus to interact with the students and faculty members during workshops, conferences, seminars and FDPs. They are also invited to deliver talks. Some examples are listed below:

Sr. No	Name of the Researcher	Organization	Type of Interaction
1.	Prof. Jamie Mustard, Dr. Morshed Chowdhury, Prof. John Rosenberg & Prof. Brian McGaw	La Trobe University, Australia	Invited Talks
2.	Dr. Anuradha Ganesh	Cummins India Ltd	Keynote Speech and Invited Talk
3.	Dr. Naveen Chilamkurti	La Trobe University, Australia	Invited Talk
4.	Prof. James Garrison	Purdue University, USA	Tutorial and Keynote speech-CASP Conference
5.	Prof. Guy Littlefair, Prof. Alex Stojcevski & Prof K Baskaran	Deakin University, Australia	Campus Visit
6.	Mr. Himanshu Warudkar	Barclays Technology	Awareness Session-ACMW Chapter
7.	Dr. Williams Oakes, Dr. Jay Gore & Ms. Margaret Maeve	Purdue University, USA	Discussion on Purdue EPICS Program
8.	Mr. Anant Talaulicar	Chairman, Cummins India Ltd	Session on Leadership

			Program
9.	Mrs. Meher Pudumjee	Chairperson, Thermax India Pvt Ltd	Chief Guest address for Soft Skill Program
10.	Mr. Sanjay Chalke	MD, EATON	Chief Guest address for Soft Skill Program
11.	Prof. Gregory Shaver	Purdue University, USA	Lecture for Students
12.	Hon. Smriti Irani	HRD Minister, Government of India	Address to Students
13.	DR. Anil Kakodkar	Nuclear Scientist, BARC	Interaction with Faculty Members
14.	Dr. Tom Linebarger	President Cummins Inc.	Address to Students
15.	Padamshree Sindhutai Sapkal	Social Activist	Address to Students and Faculty Members
16.	Padmavibhushan Dr. Raghunath Mashelkar	Eminent Scientist	Invited Talk on Inclusive Innovation
17.	Dr. Anil Sahasrabudhe	Chairman, AICTE	Address to Faculty Members on Autonomy
18.	Dr. Weiyi Meng, Dr. Krishnaswami Srihari & Elizabeth Kardjian	Binghamton University, NY, USA	Campus Visit

- The college has signed MOUs with Purdue University, Deakin University, Carnegie Mellon University and LaTrobe University. Sessions of the Professors and Researchers from these universities are arranged for the students and faculty members.
- Cummins India Ltd has instituted Chair Professor positions in the college. Prof. Chitta Amarnath - distinguished professor of IIT-Bombay and Prof. Lalit M. Patnaik is distinguished professor of IISc Bangalore are Cummins Chair Professors. They visit college regularly and guide students and the faculty members.
- Dr. Raghunath Mashelkar, eminent scientist and Dr. Sanjay Dhande, former

director IIT Kanpur are associated with college in the advisory role.

- Dr. Anuradhha Ganesh (Director, Cummins India Pvt Ltd), Dr. Vikram Gadre (Professor, IITB), Dr. Datta Kuvalekar (Director, Forbes Marshall) and Dr. Sachin Lodha (Principal Scientist, TCS) are members of the Academic Council.
- Eminent researchers such as Dr. Mandar Kulkarni (VP, Barklay Card), Dr. Parag Kulkarni (CEO, Anomlay Solutions), Dr M. S. Sutaone (Dean Academics, COEP), Dr. J. S. Chitode (Emeritus Professor, BVDU), Dr. S. R. Gengaje (HOD, WIT), Ms. Gitanjali Gadre (CDAC), Dr. Niranjana Khambete (Clinical Manager, DMH), Dr. S. L. Patil (Dean Student Affairs, COEP) are the members of Board of Studies.
- Dr. Patre (SGGS-Nanded), Dr. Uday Khedkar (IITB), Dr. M. A. Joshi (COEP) were invited for interaction with students and faculty members.

3.1.7 What percentage of faculty has utilized sabbatical leave for research activities? How has the provision contributed to the research quality and culture of the college?

- Twenty-two faculty members have utilized sabbatical for research by enrolling for PhD program.
- Faculty member from the department of Electronics & Telecommunication has completed fully paid sabbatical leave of six months at Cummins India Ltd.
- Six faculty members have been to the US University – Rose Hulman Institute of Technology, Terre Haute, Indiana for a sabbatical leave of three months.
- Faculty member of Basic Sciences and Humanities has been to the Institute of Quantum Computing, University of Waterloo, Canada for a sabbatical leave of three months.
- Faculty member of IT department has been to the Monash University, Australia for sabbatical leave of six months.

Following are the outcomes of sabbatical leave:

- It has provided exposure of global education systems, international trends in research.
- It has resulted into joint publications.
- It has resulted in interaction with Canada Excellence Research Chair Professor and offered an opportunity to contribute in the cutting edge problems in the field of Quantum Physics.
- Facility of sabbatical leave has improved number of PhD scholars. As they

are free from their routine responsibilities, their research quality is also improved.

3.1.8 Provide details of national and international conferences organized by the College highlighting the names of eminent scientists/scholars who participated in these events.

Following table shows the details about the National and International Conferences:

Name of Conference	National/International & Dates	Eminent Scientists/Scholars
CASP – Conference on Advances in Signal Processing – IEEE and IET sponsored	International Conference 10 th – 11 th June 2016	Prof. James Garrison Dr. P. K. Sinha Dr. Pramod Kale Dr. Hemant Patil Dr. Sanjay Dhande Dr. Aditya Abhyankar
ePGCON: Annual conference for Post Graduate Students	National Conference 23 rd – 24 th April 2012	Dr. G. K. Kharate Dr. M. S. Sutaone Dr. W. N. Gade Dr. P. M. Patil
ICI 2009: International Conference on Instrumentation NSI – 34: National Symposium on Instrumentation	International Conference & National Symposium 21 st – 23 rd January 2010	Prof. R. S. Sirohi Mr. Ramani Iyer Mr. C. S. Dhamankar Dr. J. Nagaraju Dr. Sudhir Agashe Dr. S. Asokan
AI Tools in Engineering	IEEE Conference 6 th – 8 th March 2008	Dr. Vijay Bhatkar Dr. Sunil Vadhera Dr. D. N. Ratnalikar Dr. Deepak Sharma Dr. Girish Palshikar Dr. P. K. Sinha

3.1.8 Details on the College initiative in transferring/advocating the relative findings of research of the College and elsewhere to the students and the community (lab to land).

College initiatives in transferring findings of research to research community:

- Subscription of various journals such as Springer, Elsevier, IEEE, Inderscience etc are made available to the students.
- The UG/PG project topics make use of findings of research done in college and elsewhere.
- Student and faculty publications are made available in the respective departmental libraries.
- Open project defence is arranged for the PG students.

College initiatives in transferring findings to the community:

Technical solutions are developed related to community problems through research.

- Students Projects on Biomedical Instrumentation are used by the Deenanath Mangeshkar Hospital, Pune. Following are the titles of those projects:
 - Measurement of Respiration rate using Bio-Impedance Technique
 - Ambulatory EEG monitoring device
- Students Projects on the area related to defense are used by the Defense R&D organization DRDO. Following are the titles of those projects:
 - Broadband Microstrip Patch Antenna design for Proximity Sensor for Artillery Shells
 - Design and Analysis of Stabilizing Mechanism for Supersonic Rocket
- Following are the titles of the Banking Applications based projects:
 - Secure M-Banking using Steganography
 - Secure E-tailing E-Commerce
 - E-Shopping Portal with Fraud Detection in Card Payments

3.1.10 Give details on the faculty actively involved in research (Guiding student research, leading research projects, engaged in individual or collaborative research activity etc.)

Most of the faculty members are actively involved in research in the form of guiding student research or individual or collaborative research.

- Following is the list of recognized PhD guides:
 1. Dr. Madhuri Khambete
 2. Dr. Prachi Mukherji
 3. Dr. Ravindra Ingale

4. Dr. Dipti Patil
5. Dr. Anand Bewoor
6. Dr. Gautam Chandekar
7. Dr. Reena Kulshrestha

- Details of the faculty members involved in the funded research projects as PI and CO-PI is as shown below:

Department	Name of Faculty	PI	CO-PI	Name of Funding Agency
Basic Sciences and Humanities	Dr. Vikram Athalye	Yes	-	University of Waterloo, Canada.
	Dr. Malini Bapat	Yes	-	BCUD, SPPU, Swaroop Agrochemical Industries, Nashik
Computer Engineering	Dr. Sunita Jahirabadkar	Yes	-	BCUD, SPPU
Electronics & Telecommunication	Dr. Madhuri Khambete	Yes	-	DRDO
	Dr. Prachi Mukherji	Yes	Yes	BCUD, SPPU
Instrumentation and Control	Dr. Anagha Panditrao	Yes	-	Ramchandra Dattatreya Prathishthan, Pune.
	Prof. Amruta Bahulikar	-	Yes	
Information Technology	Dr. Dipti Patil	-	Yes	BCUD, SPPU
	Prof. Praful Meshram	Yes	-	AICTE
Mechanical Engineering	Dr. Ravindra Ingale	Yes	-	BCUD, SPPU
	Dr. Ajit Bhosale	Yes	-	DST
	Dr. Anand Bewoor	-	Yes	BCUD, SPPU
	Prof. Parag Chaware	Yes	-	BCUD, SPPU
	Prof. Yashawant Munde	-	Yes	BCUD, SPPU
	Prof. Shridhar Kedar	Yes	-	BCUD, SPPU
	Prof. Harish Shinde	Yes	-	BCUD, SPPU

Faculty members involved in collaborative research activity:

- Dr. Vikram Athalye is involved in collaborative research with Dr. T. S. Mahesh, IISER Pune.

- Prof. Chetana Gawankar is involved in collaborative research with Dr. Yuan-Fang Li of Monash University, Australia.
- Dr. Gautam Chandekar is involved in collaborative research with Dr. Ajit D. Kelkar of Nanoengineering Dept, Joint School of Nanosciences and Nanoengineering, Greensboro, NC, USA.
- Dr. Anagha Panditrao and Prof. Asmita Wakankar are involved in collaborative research with Dr. Niranjana Khambete of Deenanath Mangeshkar Hospital, Pune.
- Prof. Atul Joshi is involved in collaborative research with Mr. Krishnan Kutty, Mr. Vinay Vaidya, Mr. Vijay Soni of KPIT Cummins Infosystems Ltd.
- Dr. Malini Bapat is involved in collaborative research with Dr. M. Murugan of Vishwakarma Institute of Information Technology, Pune and Dr. V. K. Kokate of College of Engineering, Pune.

3.2: Resource Mobilization for Research:

3.2.1 What percentage of total budget is earmarked for research? Give details of major heads of expenditure, financial allocation and actual utilization for last four years.

In the college budget, there is budget provision for following various activities associated with the research.

All the figures appearing in the following table are in lakhs (P: Proposed, U: Utilized):

Year	2012-2013		2013-2014		2014-2015		2015-2016	
	P	U	P	U	P	U	P	U
High end Equipment	70.00	63.64	90.00	100.94	20.00	12.89	50	66.97
Journal Subscription	16.00	17.49	16	18.74	18	20.19	20	27.06
Professional Society Membership	1.60	0.49	1.8	0.890	2	1.98	2	1.71
Sponsorship for Publications	1.50	1.45	1.5	1.98	1.5	0.69	1.5	1.26
Total	89.10	83.07	109.3	122.55	41.5	35.75	73.5	98.26

3.2.2 What is the financial provision made in the college budget for supporting student research projects?

- As a part of curriculum UG and PG students undertake mini and major engineering projects.
- For UG students Project topics are either provided by faculty members or sponsoring Industry or selected by students. Project topics fall under three categories i) Proof of concept ii) Product Development iii) Research
- Dissertation topics of most of the PG students have a research component.
- The institute makes provision for equipment purchases and consumables. It helps in establishing R&D facilities.
- Each year around rupees fifteen Lakhs are allocated for supporting consumable expenses of student projects.

3.2.3 Is there a provision in the institution to provide seed money to faculty for research? If so, what percentage of the faculty has received seed money in the last four years?

- Yes, the seed money is provided to faculty on demand.
- Provision is there to reimburse the expenditure towards research work and publications.
- Equipment and other facilities are provided to the faculty members for research as per the requirement.
- About 70% of the faculty has utilized seed money provision.

3.2.4 Are there any special efforts made by the College to encourage faculty to file for patents? If so, provide details of patents filed and enumerate the sanctioned patents.

- The institute encourages faculty for patenting their innovative work.
- Research committee helps interested faculty members towards filing patents.
- Regular Workshops are arranged to create awareness on patent filing procedure.
- Institute management reimburses part or whole of the patenting expenses.

Sr. No.	Name of the Faculty	Title	Filed/Sanctioned
1	Dr. Supriya Kelkar	System and method for finding faulty nodes in a distributed network	Filed Application No: TEMP/E- 1/39151/2016- MUM
2	Prof. Atul Joshi	Double focused spot pick up acoustic signals	Filed Application No: 2563/MUM/2015
3	Dr. Ajit Bhosale	An instrument for predicting shelf life of fruits and method of measurement there of	Filed File No: 3377/MUM/2014
4	Dr. Anand Bewoor	An improved exhaust gas heat recovery device	Filed File No: 315/MUM/2012
5	Dr. Anand Bewoor	Improved heater apparatus	Filed File No: 2199/MUM/2012
6	Prof. Chhaya Gosavi	System for piracy detection and method therefor	File No: 331/MUM/2012
7	Prof. Pranjali Despande	System and method for providing musical notations	Filed File No: 3693/MUM/2012
8	Dr. Malini Bapat	Green corrosion inhibitor and a process there of field	Filed Application No: 1230/MUM/2011-A
9	Prof. Atul Joshi	Method and apparatus to study fracture mechanical properties of nails and its usage as a diagnostic tool	Filed Application No: 1226/MUM/2009
10	Prof. Namrata Krandikar	A novel compression/encryption apparatus for file transfer	Filed Application No: 1066/MUM/2007

3.2.5 Provide the following details of ongoing research projects:

Type of Project	Year wise	No.	Name of the project	Name of the funding agency/industry	Total grant received
A. College Funded					
Minor Projects	NIL				
A. Other Agencies (National/International)					
Minor Projects		04			
	2016-18		1. Experimental investigation of Solar Desalination System Using Evacuated Tube Collector and Compound Parabolic Concentrator	BCUD, SPPU	1 Lakh
	2016-18		2. Experimental investigation of Influence of different oil mist parameters and lubrication oils on minimum quantity lubrication	BCUD, SPPU	1.15Lakhs

	2015-2016		3. Development of digital photographic technique for electrolyte estimation in liquid sample using flame photometry	Ramchandra Dattatreya Pratishthan	2 Lakhs
	2015-16		4. Mining Gene expression using micro array for cancer cell detection	BCUD, SPPU	44,000/-
Major Projects		01			
	2015-17		1. Feasibility Study For Shelf Life Prediction Machine For Fruits (Apple)	Department of Science and Technology - IDP	29.96 Lakhs
B. Industry Sponsored					
NIL					

3.2.6 How many departments of the College have been recognized for their research activities by national / international agencies. (UGC-SAP, CAS, DST - FIST; DBT, ICSSR, ICHR, ICPR, etc.) and what is the quantum of assistance received? Mention any two significant outcomes or breakthrough due to such recognition.

At present, no department is recognized by National/ International agencies for their research.

3.2.7 List details of completed research projects undertaken by the College faculty in the last four years and mention the details of grants received for such projects (funded by Industry/ National/International agencies) from 2012-2016.

The research Projects completed by the college faculty from 2012 are as follows:

Sr. No.	Project Title	Year of Commencement	Funding Agency	Amount Sanctioned
1	Quick effective method for Ag nanoparticles for Agrochemicals	2015	Industry sponsored project. Swaroop Agrochemicals, MIDC, Nashik	2.54 Lakhs
2	Spacetime: Pre-existing classical label vs acquired quantum observable	2015	Cummins College of Engineering for Women	50,000/-
3	Working towards better photoanodes and dye-sensitizers for efficient solar cells	2014	Cummins College of Engineering for Women	22,000/-
4	Experimental Investigation of biocomposites	2013	Board of College and University Development,	2.30 Lakhs

	reinforced with natural fibers		Savitribai Phule Pune University	
5	Biosynthesis of nanoparticles and its application	2012	Board of College and University Development, Savitribai Phule Pune University	1.10 Lakhs
6	Broad Band MS Patch Antenna design for proximity sensor of artillery shells	2012	DRDO	15 Lakhs
7	Investigation of Feasibility of coupling SAW resonator with thin films for Quantum computation	2012	Institute for quantum computing, University of waterloo, Canada	10.20 Lakhs
8	Setup Cloud Platform	2012	IBM Research Lab	13.6 Lakhs
9	Product Development	2012	BCUD	1.2 Lakhs
10	CFD analysis fluid flow through pipe with twisted tape inserts	2007	Board of College and University Development, Savitribai Phule Pune University	1.50 Lakhs

3.3: Research Facilities:

3.3.1 What efforts are made by the College to keep pace with the infrastructure requirements to facilitate Research? How and what strategies are evolved to meet the needs of researchers?

- College strives to provide infrastructure such as high end equipment, computers, softwares, internet facilities. In last four years equipment and software of total cost of Rupees 296 lakhs have been purchased to facilitate research.

- College has 1400 computer on the campus. Every faculty member is provided with computer with internet connection.
- Library has subscribed reputed print and e-journals. E journals such as IEEE, science direct, ASME can be accessed from any computer on the campus. College is institutional member of rich resource libraries such as British Library, Pune University Library, ARAI library. Faculty and students can avail research resources available in these libraries.

Strategies:

- Guest lectures, workshops and FDP are arranged in various upcoming areas of research.
- Faculty is encouraged to attend/participate in FDP and Workshops.
- Registration fees and travelling allowances are granted for research publications.
- Faculty members are encouraged for sabbatical leaves to work in industry to strengthen industry-institute interaction.
- Experts from IITs, Industries and R&D organizations are invited to elaborate on various research funding schemes.
- Seed money is granted to the researchers.

3.3.2 Does the College have an information resource center to cater to the needs of researchers? If yes, provide details on the facility.

The institute has following facilities to help researchers:

- Central library has all important journal subscriptions such as IEEE (hard and soft copies), Springer, Elsevier etc. E-journals are accessible from any computer in the campus. E-books and other resources are also accessible from any location.
- Library has rich collection of reference books. For any additional book requirement for the research immediate procurement is done. Sufficient budget is available for the same.
- IEEE membership is sponsored by the institute for more than two faculty members per department per year.
- College has institutional membership of British Library, Pune University Library and ARAI Library, which have rich research resources.

3.3.3 Does the College provide residential facilities (with computer and internet facilities) for research scholars and faculty?

- Women research scholars are given accommodation in the hostel with Wi-Fi connectivity on request.
- Internet and intranet facility is available through-out the campus.
- Central/Digital library references and browsing is available till late evening.

3.3.4 Does the College have a specialized research centre/ workstation to address challenges of research programmes? If yes, give details.

- College offers PhD program in E&TC. Department has workstations/server class machines. Softwares such as Cadence, Matlab with advanced tool boxes, Mentor Graphics and QualNet 6.1 are available. Dedicated lab with twenty i5 dual core processor machines are available for research students.
- Computer departments have Three IBM server-class machines, one Dell Workstation and 30 Intel Core i7 desktop machines.
- IT Department have developed labs to set up IBM X3500 M4 tower servers with Xeon E5-2650(6 core), 2.0GHz, 8 GB RAM configuration. The lab is used for the research work in the area of web mining, machine learning, information retrieval, cloud computing. Department have networking Infrastructure Cisco 2800.
- Mechanical department has five workstations with Linux Server HP24 core, 48GB RAM and updated softwares like LS-Dyna, HyperWorks 11.0, Enight for modeling, simulation and analysis work. Department is equipped with facilities for measurement of vibration and Noise viz.4-channel FFT Analyzer, LAB Quest, Arbitrary Generator, Multi Signal Oscilloscope and Impact Hammer.
- The instrumentation has established MEMS research and design centre with the help of central government program, National Program in Micro and Smart Systems (NPMASS). This R& D center has the facility of ten workstations and the software viz: Comsol Multiphysics, Coventor, Intellisuite and Tanner. The institute has Delta-V DCS of Emerson which is interfaced to pilot flow loop. Under this activity, students get acquainted with the steps involved in developing a DCS system for any plant like understanding the user requirements, mimic preparation, FBD & SFC programming, cold and hot commissioning, technical documentation. Proteus, Virtual Lab softwares helps to accelerate the design procedure.

3.3.5 Does the College have research facilities (centre, etc.) of regional, national and international recognition/repute? Give a brief description of

how these facilities are made use of by researchers from other laboratories.

The institute has Ph.D. research center in E&TC department approved by SPPU.

3.4: Research Publications and Awards:

3.4.1 Highlight the major research achievements of the College through the following:

Major papers presented in regional, national and international conferences.

- The institute has 52 publications in national conferences, 257 papers in international conferences and 178 papers in Scopus indexed conferences.
- The papers published in last 4 years in conferences like IEEE, CISCON, INDICON, Springer conferences are mentioned below:

Department	No of papers in National Conferences and International Conferences in last 4 years		
	National	International	Scopus Indexed
Basic Science and Humanities	-	03	-
Computer Engineering	02	14	08
Electronics & Telecommunication	29	115	97
Instrumentation and Control	16	81	51
Information Technology	02	30	16
Mechanical Engineering	02	14	07

Publications per faculty:

Papers published in conferences (during last four years) and journals (till date) per faculty are listed below:

Department	Name of the Faculty	No. of Publications
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Basic Science and Humanities	Dr. Vilas Todkar	12
	Dr. Madhuri Purandare	04
	Dr. Vikram Athalye	04
	Prof. Manisha Jail	03
	Dr. Malini Bapat	12
	Prof. Manjusha Bhosale	01
	Prof. Vishal Deore	01
	Dr. Anand Joshi	03
	Dr. Rujuta Barve	13
	Dr. Sayali Joshi- Mate	04
TOTAL		57

Department	Name of the Faculty	No. of Publications
Computer Engineering	Dr. Supriya Kelkar	05
	Dr. Sunita Jahirabadkar	03
	Prof. Shubhangi Tikhe	03
	Prof. Chhaya Gosavi	10
	Prof. Anjali Naik	04
	Prof. Madhuri Tasgaonkar	02
	Prof. Aparna Hajare	01
	Prof. Neeta Maitre	04
	Prof. Meenal Kamlakar	01
	Prof. Nutan Deshmukh	01
	Prof. Sakshi Mandke	01
	Prof. Pranjali Deshpande	01
	Prof. Varsha Pimprale	01
	Prof. Shilpa Pant	01
	Prof. Sheetal Barekar	02
	Prof. Prakash Date	01
	Prof. Sushila Shelke	03
	Prof. Swati Shirsath	01
	Dr. Sandhya Arora	11
	Prof. Rita Shelke	02
	Prof. Deore Mahendra	04
	Prof. Gitanjali Salunkhe	01
	Prof. Sulakshana Nagpurkar	03
Prof. Ravikiran Holkar	01	
Prof. Sarika Hulyalkar	01	
TOTAL		68

Department	Name of the Faculty	No. of Publications
Electronics & Telecommunication	Dr. Madhuri Khambete	09
	Dr. Prachi Mukherji	16
	Dr. Anita Patil	12
	Dr. P. V. S. Shastry	13
	Dr. Sharada Ohatkar	26
	Dr. Bageshree Pathak	14
	Dr. Shubhangi Chaudhary	10
	Dr. Mrudul Dixit	08
	Prof. Megha Borse	05
	Prof. Sachin Paranjape	06
	Prof. Ashok Khedkar	04
	Prof. Mangal Joshi	03
	Prof. Minal Pawar	02
	Prof. Amitkumar Khade	01
	Prof. Prachi Waghmare	01
	Prof. Ratnaprabha. Borhade	03
	Prof. Supriya Mangale	01
	Prof. Mugdha Dewasthale	10
	Prof. Aditi Divekar	01
	Dr. Ashwini Deshpande	21
	Prof. Sandya Potdar	01
	Dr. Reena Kulsrestha	33
Dr. Seema Rajput	19	
Dr. Anita Jain	20	
Prof. Manasi Pathade	01	
Prof. Sonal Patel	01	
TOTAL		241

Department	Name of the Faculty	No. of Publications
Instrumentation and Control	Dr. Angha Panditrao	05
	Dr. Vikas Hajare	06
	Prof. Atul Joshi	04
	Prof. Dipali Ramdasi	13
	Prof. Asmita Wakankar	14

	Dr. Jayanand Gawande	21
	Prof. Harishchandra Patil	36
	Prof. Vaishali Upadhye	09
	Prof. Revati Shriram	16
	Prof. Nivedita Daimiwal	19
	Prof. Swati Madhe	18
	Prof. Rakesh Borse	04
	Prof. Yashwant Adhav	04
TOTAL		169

Department	Name of the Faculty	No. of Publications
Information Technology	Dr. Anagha Kulkarni	08
	Dr. Dipti Patil	23
	Prof. Madhura Tokekar	01
	Prof. Sneha Thombre	04
	Prof. Makarand Velankar	12
	Prof. Chetana Gavankar	10
	Prof. Harshad Wadkar	01
	Prof. Praful Meshram	01
	Prof. Suraj Chavan	02
	Prof. Leena Sharma	01
	Prof. Radhika Bhagwat	02
	Prof. Suchitra Pakle	01
	Prof. Prajakta Deshpande	01
TOTAL		67

Department	Name of the Faculty	No. of Publications
Mechanical Engineering	Dr. Ravindra Ingle	17
	Dr. Anand Bewoor	13
	Dr. Gautam Chandekar	05

	Dr. Ajit Bhosale	07
	Prof. Parag Chaware	04
	Prof. Nitin Patil	02
	Prof. Harish Shinde	02
	Prof. Shridhar Kedar	04
	Prof. Avinash Shinde	01
	Prof. Yashwant Munde	02
	Prof. Mandar Vahadane	02
	TOTAL	59

- **Faculty serving on editorial boards of National/ International journals**

Dr. Anangha Panditrao, Editor of International STM Journals (Instrumentation Engineering).

- **Faculty Members on organization committees of International Conferences, recognized by reputed organizations/societies**

Faculty members on organization committees, reviewers, session chair and keynote speakers are listed below:

- Dr. Madhuri Khambete as a General Chair, Dr. Prachi Mukherji as a Co-Chair, Dr. Ashwini Deshpande, Dr. Anita Patil, Prof. S. N. Patil and all other faculty members from Electronics & Telecommunication were in organizing committee of Conference on Advances in signal Processing 2016 (CASP-2016).
- Prof. Hitendra Khairnar as a session chair for cPGCON 2016.
- Dr. Anagha Kulkarni Reviewer for IEEE Transaction for Knowledge and Data Engineering, 2014-15 and Technical Program Committee member of “IEEE International Conference on Computing, Analytics and Security Trends.” Pune – 2016.
- Prof. Pranjali Deshpande and Prof. Chhaya Gosavi as a reviewer of CASP 2016.
- Prof. Madhuri Tasgaonkar as reviewer of IEEE Transaction on Systems, MAN and Cybernetics: Systems, 2016.
- Dr. Dipti Pati:
 - Technical Program Committee member of “IEEE workshop

- ICTS4eHealth on ICT Solutions for Health, Messina, Italy” December 2016 (2015-16).
- Technical Program Committee member of “IEEE International Conference on Computing, Analytics and Security Trends.” Pune – 2016.
 - Technical Program Committee member of “IEEE workshop ICTS4eHealth on ICT Solutions for Health, Messina, Italy” December 2016 (2016-17).
 - Technical Program Committee member of “IEEE workshop ICTS4eHealth on ICT Solutions for Health, Messina, Italy” December 2016 (2016-17).
 - Reviewer for cPGCON 2015, ICRTET’ 2012, ICIEA 2012 at Singapore, ICCIA 2012.
 - Steering committee member for “IEEE international conference on Hybrid Intelligent Systems (HIS-2012)”, Pune (2012-13).
- Prof. Chetana Gavankar as a Technical Program Committee member of “IEEE International Conference on Computing, Analytics and Security Trends”, Pune, 2016.
 - Prof. Sneha Thombre as a Technical Program Committee member of “IEEE International Conference on Computing, Analytics and Security Trends”, Pune, 2016.
 - Prof. Nivedita Daimiwal has worked as reviewer for IEEE Transactions on Biomedical Engineering (TBME) and JEET (Journal of Electrical Engineering and Technology), 2015-16.
 - Dr. Anangha Panditrao has as a session chair and reviewer for IEEE conference at ICIC, GCOEP 2014-15.
 - Dr. Vikas Hazare, Dr. Jayanand Gawande, Prof. Harishchandra Patil, Prof. Revati Shriram, Prof. Nivedita Daimiwal, Prof. Asmita Wakankar, Prof. Dipali Ramdasi, Prof. Vaishali Upadhye have worked as reviewer for IEEE conference at ICIC, GCOEP 2014-15.
 - Dr. Anand Bewoor has worked as session chair of ICTIME 2016, NCMOC 2015 and NCTR2015.
 - Dr. Supriya Kelkar and Dr. Sunita Jahirabadkar has worked as a session chair for cPGCON 2014, cPGCON 2015 and as a reviewer of CAST 2015.
 - Dr. Supriya Kelkar has worked as a reviewer for IEEE Transactions on Industrial Electronics.
 - Prof. Shilpa Despande has worked as reviewer for cPGCON 2014 and ICIC 2015.
 - Dr. Sandhya Arora has worked as reviewer for IEEE conference on Information Processing, 2015.
 - Dr. Anand Bewoor was a key note speaker at NCTR2015 at A.P.C.O.E.R at Pune.

- Dr. Madhuri Khambete as a convener, Dr. Bageshree Pathak, Dr. Mrudula Dixit and all other faculty members from Electronics & Telecommunication were in organizing committee of ePGCON 2012.
- Prof. Chhaya Gosavi as reviewer of IEEE Transaction on Multimedia, 2012.
- Dr. Madhuri Khambete has worked as a Chair Person, ICI 2009: International Conference on Instrumentation, NSI – 34: National Symposium on Instrumentation organized by Instrumentation and Control Department in 2010.
- Dr. Madhuri Khambete as a convener, IEEE conference on AI Tools in Engineering was organized by Electronics & Telecommunication department, 2008.

3.4.2 Does the College publish research journal(s)? If yes, indicate the composition of the editorial board, publication policies and whether it is listed in international database?

The institute does not publish any research journal.

- Institute has published CASP conference proceedings. It has been indexed in SCOPUS and is available on IEEE Xplore.
- College also publishes proceedings for National level technical event ‘Innovation’.

3.4.3 Give details of publications by the faculty:

Number of papers published in peer reviewed journals (national / international)

Papers published in SCI, Scopus, National and International journals are listed below:

Department	Papers in National and International Journals			
	National	International	SCI	Scopus
Basic Science and Humanities	-	54	-	30
Computer Engineering	-	52	08	13
Electronics & Telecommunication	9	88	7	15

Instrumentation and Control	11	61	14	34
Information Technology	-	35	--	02
Mechanical Engineering	05	38	04	21

Chapters of Books:

Department	Author	Details
Computer Engineering	Dr. Supriya Kelkar	Embedded Systems Architecture, Programming and Design , Tata Mcgraw Hill, ISBN:10:0-07-066764-0
	Prof. Chhaya Gosavi	Advances in Computer vision and information Security. I. K. International Publication, ISBN:978-81-89866-74.2007.
Electronics & Telecommunication	Dr. Madhuri Khambete, Prof. Supriya Mangale	Intelligent system technology and applications 2016, “Camouflaged Target Detection and Tracking using Thermal Infrared and Visible Spectrum Imaging”, ISBN: 978-3-319-47951-4, pp.193-207.
	Dr. Prachi Mukherji	Cross disciplinary Application of artificial intelligence and Pattern Recognition: advancing

		Technologies, “Devanagari Script Recognition Technique and Challenges”, Chapter 14, pp 249-268.2012.
	Dr. Shubangi Chaudhary	Communication in computer and information Science, “Performance of WiMAX/IEEE 802.16 with different modulation and coding”, ISSN: 18650929, Springer Verlag, 2007.
Instrumentation and Control	Prof. Asmita Wakankar	Intelligent system technology and applications 2016, “Automatic Diagnosis of Breast cancer using Thermographic Color Analysis and SVM classifier”, ISBN:978-3-319-47951-4, pp.21-32.
	Dr. Anagha Panditrao	Lecture Notes in Electrical engineering 2009, Visible Light Source Temperature Estimation using Digital Camera Photography” ISBN: 978-0-387-76482-5 pp: 249-258
Information Technology	Dr. Anagha Kulkarni	Big data Analytics, “Long live king of big data: the context”, ch.4, pp.50-66.
	Dr. Dipti Patil	Springer's Advances in Computer Science, Engineering & Applications, “Concept

		Adapting Real-Time Data Stream Mining for Health Care Applications”, 2012. ISBN:978-3-642-30156-8.
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Books with ISBN numbers with details of Publishers:

Department	Author	Details
Basic science and Humanities	Prof. Manisha Jail	Applied Science I &II DISHA Publication (2003 course) Applied Science I &II Technical Publication (2008 course)
	Prof. Jyoti Jakhete	Entrepreneurship and project management, ISBN:979-93-80638-95-9, Prashant publications, Jalgaon, 2011.
	Prof. Jyoti Jakhete	Financial management, ISBN:978-93-80638-65-2, Prashant Publications, Jalgaon, 2011
Computer Engineering	Dr. Sunita Jahirabadkar	Knowledge Innovation Strategy. ISBN:10:9384898031 Publisher: Blooms Bury

		India.
	Dr. Sunita Jahirabadkar	Artificial Intelligence: Building Intelligent Systems. ISBN:10:8120350464 Publisher: PHI
	Dr. Sunita Jahirabadkar	Reinforcement and systemic machine Learning for Decision Making. ISBN:10:8126556250 Publisher: Wiley India Private Limited
	Dr. Sunita Jahirabadkar	E-Business. ISBN: 10:0198069847 Publisher: Oxford university Press.
	Dr. Sunita Jahirabadkar	BIG DATA Analytics (ISBN: 978-81-203-5116- 5), PHI Publication
	Prof. Jyoti Bangare	Advanced Database Management
Electronics &Telecommunication	Prof. Sonal Patel	Fast Converging MPPT control for Photovoltaic Application: DSP-based maximum power point tracking method for Photovoltaic applications.

		Lambert Academic Publishing (2012). ISBN:- 10:3847319035
	Prof. Anuradha Fukane	Theory and Solved Problems of control system, August 2010. Satya Prakashan, New Delhi. ISBN No:81-7684-597-3
	Prof. Ashok Khedkar	Microwave Engineering, Rajiv Gandhi Technological University, Bhopal, ISBN: 978-81-8492-373-5
Mechanical Engineering	Dr. Anand Bewoor	Hydraulics and Pneumatics, Nirali Prakashan(2014)
	Dr. Anand Bewoor	Manufacturing Engineering, Nirali Prakashan (2013)

- **Number listed in International Database (For e.g. Web of Science, Scopus, Humanities International Complete, Dare Database - International Social Sciences Directory, EBSCO host, etc.)**

Journal and conference papers listed in International Database:

Department	No. of Papers in International Database
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Basic sciences and Humanities	30	
Computer Engineering	29	
Electronics &Telecommunication	119	
Instrumentation and Control	106	
Information Technology	18	
Mechanical Engineering	32	
Citation Index (Range- Average) (It is the h Index of author-Author Metric)		
Department	Range	Average
Basic science and Humanities	1 - 5	2.8571
Computer Engineering	1 - 9	2
Electronics &Telecommunication	1 - 6	2.625
Instrumentation and Control	1 - 6	3.2
Information Technology	1 - 8	1.157
Mechanical Engineering	1 - 4	2.75
SNIP		
Department	Range	Average
Basic science and Humanities	0.29 - 1.388	0.8715
Computer Engineering	0.174 - 4.835	1.618
Electronics &Telecommunication	0.26 - 0.784	0.462
Instrumentation and Control	0.029 - 1.898	0.5496
Information Technology	0.006 - 2.065	0.597
Mechanical Engineering	0.0666 - 1.907	0.633

SJR		
Department	Range	Average
Basic science and Humanities	0.117 - 1.156	0.6204
Computer Engineering	0.157 - 3.301	0.7279
Electronics &Telecommunication	0.26 - 0.368	0.263
Instrumentation and Control	0.100 - 1.186	0.2902
Information Technology	0.1 - 0.675	0.22
Mechanical Engineering	0.105 - 1.512	0.446
Impact Factor (Range- Average)		
Department	Range	Average
Basic science and Humanities	0.18 - 7.645	1.9977
Computer Engineering	0.039 - 7.329	1.5209
Electronics &Telecommunication	0.14 - 3.559	1.386
Instrumentation and Control	0.14 - 2.6	0.751
Information Technology	0.358 - 0.821	0.098
Mechanical Engineering	0.16 - 3.807	1.453
h-Index (Its is the h Index of Journal: Journal Metric)		
Department	Range	Average
Basic science and Humanities	13 - 192	80
Computer Engineering	5 - 169	43.41
Electronics &Telecommunication	10 - 40	20.33
Instrumentation and Control	9 - 79	21
Information Technology	1 - 4	1.71
Mechanical Engineering	2 - 144	38.533

3.4.4 Indicate the average number of successful M.Phil. and Ph.D. Scholars guided per faculty.

- Successfully around six M.E. scholars are guided per faculty from Instrumentation and Control department.
- Around three M.E. scholars are guided per faculty from Electronics & Telecommunication department.

3.4.5 What is the stated policy of the College to check malpractices and misconduct in research?

- Institute discourages malpractices and misconduct such as plagiarism in research publications. To check plagiarism software tools made available by SPPU are used.
- Funds received for the research work are utilized as per the standard accounting practices for the defined research objectives.

3.4.6 Does the College promote interdisciplinary research? If yes, how many inter departmental / inter disciplinary research projects have been undertaken and mention the number of departments involved in such an endeavor.

Interdepartmental projects by the students are promoted by the college. Interdepartmental equipment resources and faculty expertise available are involved in such type of projects. Some of the examples of such projects are given below:

- Students from Instrumentation & Control Engineering and Electronics & Telecommunication Engineering have done interdisciplinary projects such as; ECG acquisition on VLSI, Classification of Human Emotions from EEG Signal using Support Vector Machine, Analysis of Breast Thermograms for Abnormality Detection.
- Students from Computer Engineering and Information Technology have done interdisciplinary projects such as; Secure M-Banking using Stegnography, Secure E-tailing E-Commerce and E-Shopping Portal with Fraud Detection in Card Payments.
- Students from Instrumentation & Control Engineering and Mechanical Engineering have done projects on automation of steffens boltzman

apparatus, automated pin sorting machine, thermal conductivity and heat dissipation testing are done by students from Instrumentation control and Mechanical Department:

Faculty members are involved in interdepartmental research:

- Prof. Atul Joshi from the department of Instrumentation & Control and Dr. Anand Bewoor from the department of Mechanical Engineering are working together on a research problem.

3.4.7 Mention the research awards instituted by the College

College recognizes research work done by the faculty members and the students through college magazine and news bulletin. College has policy to recognize research publication in reputed journals by providing Rs. 10, 000/- for SCI indexed and Rs. 5000/- for Scopus indexed journals. For any research funding received by the faculty member in the capacity of PI or Co-PI, PI or Co-PI gets an incentive of 3% or 2% of the grant amount, respectively.

3.4.8 Research awards received by the faculty (eg. Young research award, best paper)

Year	Name of the Faculty	Awards received	Organization
2015-2016	Prof. Revati Shriram	Best Paper Award, ENVISTA 2016	Sathyabama University, Chennai
2015-2016	Prof. Chetana Gavankar	Student award for ISWC, Kobe, Japan, 2016	Semantic Web Science Association (SWSA), Germany

2015-2016	Prof. Nivedita Daimiwal	Best Poster paper	DIAT, Pune
2014-2015	Dr. Bageshree Pathak	Excellent Paper award	International Conference on Industrial Electronics and electrical Engineering, ICIEEE-2014
2013-2014	Dr. Shubhangi Chaudhary	Best Paper award	ICAET-2013
2012-2013	Prof. Chetana Gavankar	Best Poster Oscar award	IIT Bombay-Monarch Research symposium

Recognition received by the faculty from reputed professional bodies and agencies

- Dr. Lalit Patnaik, Cummins Chair Professor is a Fellow of Institution of Electrical and Electronics Engineers.
- Dr. Madhuri Khambete has received appreciation by IEEE WIE for contribution in WIE activities.
- Dr. Madhuri Khambete has received recognition from IETE, Pune Chapter for contribution in the technical field.

3.4.9 State the incentives given to faculty for receiving state, national and international recognitions for research contributions.

The college has a policy to provide incentive of Rs. 10,000/- for publication in SCI indexed journals and Rs. 5000/- for publication in Scopus indexed journals.

3.5: Consultancy:

3.5.1 What is the stated policy of the College for structured consultancy? List a few important consultancy services undertaken by the College.

- The policy of the college is to encourage the consultancy and testing work by the faculty members.
- The institute has a structured, revenue sharing policy for consultancy. The amount received towards consultancy assignment is distributed among institute, the faculty coordinator and other staff members. Staff involved receives 70% of the revenue earned and 30% share goes to the parent institute and the college.
- Revenue generating consultancy and testing services undertaken by college are:
 - A quick, effective synthesis of Silver Nanoparticles for Agrochemicals.
 - Metallurgy Lab – Testing of metal rods on UTM
- Faculty members are also engaged in consultancy for industry without any charges. Some such examples are as follows:
 - Ultrasonic range finder sensor for KPIT Cummins
 - High speed disc cutting machine controller for KPIT Cummins
 - Valve leakage testing apparatus for BES Engineers
 - Micro-hardness tester control panel for Metatech
 - Wire harness tester Tekson Electronics

3.5.2 Does the College have College-industry cell? If yes, what is its scope and range of activities?

College has very good interaction with many industries for activities such as: students' projects, internships, lab development, curriculum development and faculty training.

- College has very close association with Cummins India Ltd and Cummins Inc. Cummins India Ltd has declared Cummins College as their 'Signature Project'. Under this project many initiatives towards infrastructure development, faculty development and student development are undertaken.
- MOUs are signed with various industries like EATON, HSBC, Citi Bank, Persistent Systems Ltd, Ericson for students' industrial training, students' projects and sabbatical for faculty members.
- Some of the institute laboratories are developed by the support of various industries like Forbes Marshall, Emerson, Cummins India Ltd, Rose-Mount

Systems, Honeywell, Videocon, IBM, CISCO etc.

- Collaborations with EATON provides a platform to women engineering students from vernacular, semi-vernacular and rural background to acquire appropriate soft and social skills that are critical to achieve individual and professional success.
- With the help of CIL, MOU is signed with internationally renowned university for masters' program fellowship at Purdue, USA.

3.5.3 What is the mode of publicizing the expertise of the College for consultancy services? Mention the departments from whom consultancy was sought.

- Department expertise is available on the institutional website.
- The expertise available in the college are briefed during interaction with industry experts on the occasion of curriculum formation and campus recruitment. The institutional presentation reflects various research area, facilities available and expertise available.
- Mechanical Engineering and Basic Sciences & Humanities are the departments involved in revenue generating consultancy and testing services. All other departments are involved in no-cost consultancy services in the form of UG/PG projects.

3.5.4 How does the College encourage the faculty to utilize the expertise for consultancy services?

- The expert lectures/workshops are arranged to motivate and guide the faculty for consultancy and R&D.
- Facilities and infrastructure is provided by the institute to the faculty and staff members involved in the consultancy and testing.
- Structured sharing is defined for consultancy fees.

3.5.5 List the broad areas of consultancy services provided by the College and the revenue generated during the last four years.

- Broad area in which consultancy services provided are:
 - Metallurgy-Testing of rods
 - A quick, effective synthesis of Silver Nanoparticles for Agrochemicals
- Consultancy details of Mechanical Department and Basic Sciences &

Humanities are as shown below:

Consultancy Activity	Co-coordinator	Year	Revenue Generated (Rs)
A quick, effective synthesis of Silver Nanoparticles for Agrochemicals	Dr. Malini Bapat	2015-2016	2,54,000
Metallurgy Lab – Testing of metal rods on UTM	Prof. Sunil Divekar	2013-2014	49,950
Metallurgy Lab – Testing of metal rods on UTM	Prof. Sunil Divekar	2012-2013	63,900

3.6: Extension Activities and Institutional Social Responsibility (ISR):

3.6.1 How does the College sensitize the faculty and students on Institutional Social Responsibilities? List the social outreach programmes which have created an impact on students' campus experience.

- Parent institution MKSSS is working towards social upliftment of women for more than 120 years. Many initiatives for upliftment of women such as providing hostel facility for girl students coming from rural and weak economic sections, providing education and boarding facilities to the girls without family support, learn and earn scheme etc. MKSSS also run old-age home. During first year induction program students are made aware of various activities conducted by the parent institution.
- College students and faculty members participate in various activities such as blood donation camp, campus cleaning, educating school children, NSS initiatives etc. During orientation session information about these activities is shared and appeal is made to the students to participate in such activities.
- The college has been sanctioned one unit of National Service Scheme (NSS) since 2012. Understating institution's social responsibility various activities conducted under NSS are:
 - Organization of awareness programmes for Plastic Waste and E -Waste

- management, Oral Health, Self-Defense tactics, Health awareness.
- Blood Donation by college students, Eye Check-up, Dental Check-up and Health Check-up camps for villagers.
- Activities conducted at Kalyan village: Tree Plantation, various educational activities at school. Visit of Kalyan village school children to Cummins College technical festival 'Innovation'.
- IEEE student chapter is also involved in activities towards social responsibility such as: Mula-Mutha river cleaning, teaching aid for blind students, assisting blind students for writing exams, assisting senior citizens from old-age home.
- College students along with Bhoomi Foundation teach school kids from underprivileged sector.

3.6.2 How does the College promote College-neighborhood network and student engagement, contributing to holistic development of students and sustained community development?

College promotes neighborhood network and student engagement by following ways:

- College students organize rallies to create awareness about social issues such as plastic waste and e-waste management.
- Students actively participate in traffic control around college campus with the help of traffic police.
- Water and energy saving campaign for the nearby residents.
- Students and faculty members visit nearby residents to give information about girl's education schemes available in MKSSS.
- NSS conducted the Smart City Survey in the college neighborhood and survey for school dropout children in association with Pune Municipal Corporation (PMC).

Above mentioned activities help towards holistic development of students by creating awareness about social problems such as waste management, traffic control, pollution and energy crises. It also helps to improve communication skills, teamwork and to grow them as socially sensitive human beings.

3.6.3 How does the College promote the participation of students and faculty in extension activities including participation in NSS, NCC, YRC and other National/ International agencies?

- College has been sanctioned NSS unit of 50 students. All the activities of this unit are financially supported by the college by providing sufficient budget.
- Students participating in NSS activities get appreciation certificate from the college and participation certificate from SPPU.
- College Provides flexibility in academic schedule for the students and faculty members.
- College encourages and provides flexibility in academic schedule for the students attending NCC camps.
- IEEE student branch organizes extension activities. College pays 50% membership fees of these students.

3.6.4 Give details on social surveys, research or extension work (if any) undertaken by the College to ensure social justice and empower the underprivileged and most vulnerable sections of society?

- Various surveys like ‘Number of Washrooms per house’, ‘Number of Cattles per house’ and many more are carried out by the NSS students at Kalyan village.
- NSS conducted the Smart City Survey in the college neighborhood and survey for school dropout children in association with Pune Municipal Corporation (PMC).
- With the generous monetary help from the institute faculty/staff members, washrooms were constructed for school children at Kalyan village.
- Printers were gifted to Kalyan village school.
- Workshop was organized for Kalyan villagers on clothes stitching to help them in self-employment.
- College students along with Bhoomi Foundation teach school kids from underprivileged sector of Ravivar Peth area.
- IEEE Student members developed a teaching aid for the blind students with latitude and longitude markings with wires on the globe.
- Donation was given by the college students and the staff members to a social activist Sindhutai Sapkal for supporting her work in raising orphaned children in India.
- Every year college provides financial assistance to the students coming from low income section.

3.6.5 Give details of awards / recognition received by the College for extension activities/ community development work.

- College has received third prize for ‘Green College Clean College’ from Kirloskar Vasundhara.
- College has received award and an appreciation certificate from Janakalyan Blood Bank.
- Pune Municipal Corporation has awarded College for Mula-Mutha river cleaning and Tree Plantation.
- College has received award in recognition of voluntary contribution for the empowerment of visual challenges from Indian Association for the Blind.

3.6.6 Reflecting on objectives and expected outcomes of the extension activities organized by the College, comment on how they complement students’ academic learning experience and specify the values and skills inculcated?

- Objective of the institute is to make the women leaders with strong ethics.
- The involvement of students in organization and/or participation in these extension activities has helped students to develop their leadership qualities and team spirit.
- The extension activities help students to imbibe not only social and cultural values but also organizing skills.
- The passion to help needy make them realize the need to serve society and in turn nation, it creates a path for experiential learning and life long experience to become responsible and ethical citizen.

3.6.7 How does the College ensure the involvement of the community in its outreach activities and contribute to the community development? Detail the initiatives of the College which have encouraged community participation in its activities.

College appeals community to participate in outreach activities through displaying banners and distributing leaflets. College also communicates these initiatives to students and parents to seek their participation. Some of the initiatives which have encouraged community participation are as follows:

- In summer 2016 Maharashtra state was affected by severe drought. College students and the faculty members collected funds for drought affected people by involving neighborhood.

- In order to generate funds for needy students and women, MKSSS involve community in fund generation through scheme known as 'Bhaubeej Nidhi'. Under this scheme volunteers visit people all over Maharashtra to collect funds.
- Eye checkup and Health checkup camps are organized under NSS for the Kalyan villagers with the help of medical practitioners.

3.6.8 Does the College have a mechanism to track the students' involvement in various social movements/activities which promote citizenship roles?

There are various social activities arranged for the students and are coordinated by the faculty member and student coordinators. The involvement of the students in social activities is monitored through faculty coordinators.

3.6.9 Give details on the constructive relationships (if any) with other institutions in the nearby locality in working on various outreach and extension activities.

College has good relation with other institutions for extension activities such as: Rotary Club, Janakalyan Blood Bank and Sofosh.

- Association between Janakalyan Blood Bank and college is since last 6 years and college has received appreciation certificate from Janakalyan Blood.
- Seminar on Traffic Control Rules and PUC checking at concessional rate are organized for the students by Rotary Club of Pune.
- Our students work as reader and writer for the Blind Students of MKSSS's Mahilashram High School for their exams.
- Our students visit Sofosh (Society of Friends of Sassoon Hospital) to teach the kids.

3.6.10 Give details of awards received by the institution for extension activities and/contributions to the social/community development during the last four years.

- College has received third prize for 'Green College Clean College' from Kirloskar Vasundhara.
- College has received award and an appreciation certificate from Janakalyan Blood Bank.
- Pune Municipal Corporation has awarded College for Mula-Mutha river cleaning and Tree Plantation.
- College has received award in recognition of voluntary contribution for the

empowerment of visual challenges from Indian Association for the Blind.

3.7 Collaboration:

3.7.1 How has the College's collaboration with other agencies impacted the visibility, identity and diversity of activities on the campus? To what extent has the College benefitted academically and financially because of collaborations?

The college has good collaboration with industries, academic institutes and professional bodies.

- Industry collaborations has resulted into their active involvement in co-curricular activities such as: project mentoring, project competitions, workshops, guest lectures and into sponsorships for co-curricular and extra-curricular activities thereby enhancing visibility and identity of the activities. Industries involved in above activities are Cummins India Ltd, Forbes Marshall, IBM, EATON, GE, Persistent Systems Ltd, SKF, Citi Bank, Gabriel, HSBC, Barclays etc.
- Industry collaborations has also led to internships and sponsored projects for the students.
- Collaborations with professional bodies for organizing conferences and workshops help to reach these activities to wider academic community through their network.

In addition to getting visibility and identity, college is benefitted financially and academically in big way. Such collaborations are listed below:

- Cummins India Ltd has declared Cummins College as their 'Signature Project'. Under this project college got financial support for lab development, students training program, participation in competitions, paid study leave for the faculty members. This project also includes mentoring of faculty and students by eminent professors and advisors.
- Cummins India Ltd has instituted Cummins Fellowship Program which provides opportunity to pursue MS Program at Purdue University, USA.
- Some of the laboratories are developed with the financial support of industries like Forbes Marshall, Emerson, Cummins India Ltd, Rose-Mount Systems, Honeywell, Videocon, IBM, CISCO etc.

- Industries like EATON, HSBC, IBM, Citi Bank, Persistent Systems Ltd. and Ericson provide training and projects to the students.
- EATON provides soft skill training to the students from vernacular and rural background.
- The institute had received IBM Shared University Research grant to promote research in cloud computing.
- College has signed MOU with Deakin University, Carnegie Mellon University, La Trobe University for collaborative research, scholarship for higher education and faculty exchange. One student received full financial support for PhD program. Professors from these Universities had visited the college to deliver talks.
- College has signed MOU with Purdue University, USA. Every year four students are selected for MS program at Purdue. These students get financial support in terms of Cummins Fellowship. College students are doing projects with the help of Purdue professors under EPICS Program.
- College has collaboration with University of Turin, Italy for research in foundations of Quantum Physics and Relativity.

3.7.2 Mention specific examples of, how these linkages promote

- **Curriculum development:**
- **Internship, On-the-job training**
- **Faculty exchange and development**
- **Research, Publication**
- **Consultancy, Extension**
- **Student placement**
- **Any other, please specify**

Curriculum Development:

- Experts from Cummins India Ltd, Persistent Systems Ltd, Barclays, Tata Technology, TCS, CDAC, IBM, Tata Motors, Forbes Marshall, iKnowlation, Reliscore are members of BOS and Academic Council. The requirements of the industry are discussed in the BOS and Academic Council meetings. Views expressed by the Industry experts help the college to design the curriculum as per industry requirements and latest technology trends.
- To discuss practical aspects of the course contents, industry experts are invited to deliver guest lectures. In last four years, more than 150 lectures were conducted by the industry experts from industries such as Cummins India Ltd, Emerson, EATON, Forbes Marshall, Persistent Systems Ltd,

HSBC, Citi Bank.

Internship, On-the-Job Training:

- At the end of the third year, during summer vacation students are encouraged to enroll for internships/on-the-job training. Twelve-week vacation period can be utilized for such internships/training. Students from Computer Engineering and Information Technology also register for Virtual Internships. Linkages with industries such as EATON, GE, DRDO, BSNL, Cummins India Ltd, Forbes Marshall, John Deere lead to internships and training opportunities for students.

Faculty Exchange and Development:

- Sabbatical in industry: During sabbatical leave, faculty can work in Cummins India Ltd. This enriches industry experience of the faculty.
- Sabbatical in institutes: During sabbatical leave, six faculty members visited Rose-Hulman Institute of Technology, USA. Faculty member of Basic Sciences and Humanities has worked as visiting scientist in the Institute of Quantum Computing, University of Waterloo, Canada.
- Invited Talks in Conference: Dr. Vikram Athalye was invited to deliver talk in 'Time Machine Factory' conference organized for centenary celebration of Einstein's Relativity at the University of Turin, Italy.
- Resource Persons in Seminars and Workshops: Many faculty members have been invited to various workshops and seminars as resource persons.
- Industry Organized Faculty Development Program: Faculty members participated in the faculty development programs organized by Persistent Systems Ltd, KPIT, Infosys, Cisco and Wipro.
- Training Program and Invited Talks for Industry: Faculty members had conducted training program for Forbes Marshall, Emerson and Honeywell. Faculty members were invited by Forbes Marshall to deliver talk.

Research, Publication:

- Due to the interaction with industry and R&D organizational experts/scientists, publications in International and National Journals has been increased progressively.
- Facility of sabbatical leave has improved number of PhD scholars. As they are free from their routine responsibilities, their research quality is also improved.

Consultancy, Extension:

- Industry linkages create opportunity to know areas of mutual interest and expertise available in the college. This has resulted into consultancy by faculty members. Some such examples are as follows:
 - Ultrasonic range finder sensor for KPIT Cummins
 - High speed disc cutting machine controller for KPIT Cummins
 - Valve leakage testing apparatus for BES Engineers
 - Micro-hardness tester control panel for Metatech
 - Wire harness tester Tekson Electronics
 - A quick, effective synthesis of Silver Nanoparticles for Agrochemicals
 - Metallurgy Lab – Testing of metal rods on UTM
 - In collaboration with Deenanath Mangeshkar Hospital, Pune following research projects are completed:
 - Measurement of Respiration rate using Bio-Impedance Technique
 - Ambulatory EEG monitoring device

Student Placement:

- The institution has gained the benefits of the interaction with various industries. More than 80% of the total students are placed every year in leading industries.
- Major Companies **visiting for Campus for placements are: Microsoft, Texas Instruments, ZS Associates, GE, John Deere, EATON, Honeywell, Alfa Laval, KPIT Cummins and many more.**

Any other, please specify:

- Forbes Marshall conducts the Project Competition every year since 1997 for the final year students.
- Sponsorship is provided by the Cummins India Ltd, Emerson, Forbes Marshall, EATON, Persistent Systems Ltd, HSBC and Honeywell for the national level technical event INNOVATION organized by the college.
- Soft skills training program, ‘Garnishing Talents’ is a joint initiative by Confederation of Indian Industry (CII), EATON and the college.

3.7.3 Does the College have MoUs nationally/internationally and with institutions of national importance/other universities/ industries/ corporate houses etc.? If yes, explain how the MoUs have contributed in enhancing the

quality and output of teaching-learning, research and development activities of the College?

The institute has MOUs with several esteemed organizations:

- College has signed MOU with Purdue University, USA. Under this MOU, every year four students are selected for MS program at Purdue. These students get financial support in terms of Cummins Fellowship. So far forty-three students are benefited by this MOU. Purdue being one of the top ranked universities in the world, students aspire to get this fellowship by putting their hardwork in academics and strive to improve their performance. Purdue offers project based education through the 'Engineering Projects in Community Service' program. Students are participating in this program under the guidance of Purdue professors. This is a good opportunity for the students to interact with Purdue professors and students, which enriches learning experience of the students.
- College has MOU with Deakin University, La Trobe University and Carnegie Mellon University, AUS. Sessions of the researchers and scientists from these universities are arranged for the students aiming to promote the importance of higher education and various research areas.
- College has signed MOU with Persistent Systems Ltd. Persistent offers projects to the students, best project award and faculty development program.
- College has signed MOU with HSBC and Citi Bank to promote Internships, Sessions to enhance domain knowledge, Faculty Connect Programs, Sponsorships etc.
- College has not signed any formal MOU with CIL. However, CIL has given financial and technical support to enhance quality of teaching-learning, research and development activities of the college. CIL has given financial support to conduct Aptitude Test (AMCAT) for all second and third year students, forty-five hours Employability Enhancement Program for third year students, participation in Baja competition. CIL has financially and technically supported research facilities in laboratories.

3.7.4 Have the College industry interactions resulted in the establishment/creation of highly specialized laboratories /facilities?

College industry interactions resulted in the establishment/creation of highly specialized laboratories/facilities in the different departments. The details are as

follows:

- Information Technology department's project laboratory received funding for thirty desktops and three servers.
- Computer Engineering department has received laboratory set up of thirty computer systems and a laptop. It has also received a high-end graphics DELL work-station and three IBM X 3500 servers.
- Mechanical Engineering department laboratories are equipped FFT Analyzer, Impact Hammer, Digital Barometer etc. by Cummins India Ltd (CIL) support.
- Instrumentation & Control department laboratories are supported by the various industries like, Emerson, Rose-Mount Systems, CIL and Forbes Marshall.
- Forbes Marshall has sponsored flow-loop consisting of various flow-meters, with a calibration facility using Magnetic-Flow Meter. They have also gifted Steam and Water Analysis System (SWAS).
- Emerson has donated a Delta-V distributed control system to improve process operations in an easy and interoperable way.

Each department has procured research level instruments and test equipment sponsored by various industries. Details of the same are mentioned in the following table.

Industry	Facilities/Equipments	Department
Cummins India Ltd.	Laboratory setup of 30 computer systems and a laptop	Computer Engineering
	Digital Storage Oscilloscope (100 MHz), Mixed Signal Oscilloscope (500 MHz), Spectrum Analyzer (4 MHz), Mentor Graphics Hep1 and Hep2 (25 Licenses), Cadence Mixed Signal Environment (10 Licenses) and QualNet6.1	Electronics and Telecommunication
	Laboratory setup of 30 Desktops and 03 Servers	Information Technology
	Work-Stations, PCB making machine, Drilling Machine, Soldering and De-soldering Stations, DC/Stepper Motors and Drives, Embedded Tools, Spectroflurometer,	Instrumentation & Control

	Fluke Thermal Camera etc.	
	Computerized 4 Cylinders 4 Stroke CRDI Turbo Engine, 5 - Exhaust Gas Analyzer, Cut sections of Diesel Engine Model and Turbocharger	Mechanical Engineering
	Dynamics of Machinery Laboratory: FFT Analyzer (4 Channels), Impact Hammer, Arbitrary Function Generator, Multi-Signal Oscilloscope	
	Computer Lab / Project Laboratory: Lenovo X1 Laptop (Qty. 06), HP Z420 Workstations with 6 core, 16 GB RAM (Qty. 05), Linux Server- HP 24 core, 48 GB RAM (Qty. 01), Software: Solid Works (60 licenses), ANSYS 14 th Ver, LS-DYNA, HYPERWORKS, EnSight.	
	Thermodynamics Laboratory: Digital Barometer, Humidity & Temperature sensor	
IBM	Two IBM 3650M4 Rack Servers (one each of six core and quad core)	Information Technology
Emerson	Automation Center (Delta-V DCS)	Instrumentation & Control
Forbes Marshall	Flow Loop, SWAS setup	Instrumentation & Control

CRITERION IV

INFRASTRUCTURE AND LEARNING RESOURCES

4.1: Physical Facilities:

4.1.1 How does the College plan and ensure adequate availability of physical infrastructure and ensure its optimal utilization?

- The College is situated on a sprawling 4 acres of lush green campus with built-up area of 26,430 square meters.
- The state-of-the-art infrastructure augments learning and promotes a good teaching-learning environment. Total 28 classrooms, 11 tutorial rooms 60 laboratories, common workshop, central library, 3 closed auditoriums, 1 open auditorium, canteen facility and playground are available in the campus.
- All the classrooms are equipped with multimedia teaching aids.
- All the departments have minimum ten laboratories. State of the art facilities are available in these laboratories. College has invested more than 15 crores in laboratory equipment. Each laboratory is equipped with sufficient number of required experimental setups.
- 1400 computers on the campus are connected to internet through LAN.
- Open access system, use of SLIM21 software, availability of good number of reference books and journals are the salient features of central library.
- College management ensures availability of adequate physical infrastructure considering AICTE and SPPU norms. Whenever additional course is started or curriculum needs arise it is ensured that required physical infrastructure is available on time.
- Every department has dedicated laboratories and classrooms. Considering the contact hours of each course, classroom and laboratory utilization time table is planned by the departments. Time required for maintenance of the labs, time slots required for practice sessions and examinations are considered in time table planning. Regular Classroom and laboratory sessions are conducted five days a week. On Saturday, laboratories and classrooms are available for additional lectures, tutorials and laboratory sessions.
- Resources are shared across departments whenever needed. Every department has computer laboratories which are utilized for on-line examinations, aptitude tests, project development and competitions by students of all departments.

- Students of all the departments utilize resources of mechanical workshop for their projects. College Baja team uses welding and other machine shop facilities to build Baja vehicle.
- The common facilities like auditoriums and conference halls may be utilized by booking in advance. These can be used for conducting guest lectures, training, conferences and workshops.
- Playground and sports facilities are accessible to all the students.

4.1.2 Does the College have a policy for creation and enhancement of infrastructure in order to promote a good teaching-learning environment? If yes, mention a few recent initiatives.

- The management shows keen interest in the creation and enhancement of infrastructure in the Institution for smooth running of all the academic, co-curricular and extracurricular activities. The infrastructure facilities ensure smooth teaching learning processes. The management promotes improvement in infrastructure and ensures maintenance of existing buildings. Necessary budget is allocated to upgrade and create needed infrastructure.
- Infrastructural facilities are provided such that it creates a better and congenial atmosphere for effective teaching and learning.

Few Initiatives in the last four years:

- Considering the infrastructure needs, additional building space of 3500sq meter is made available for laboratories, classrooms, office and other facilities.
- Equipment worth rupees 542 lakhs are procured in laboratories.
- Internet bandwidth is enhanced to 106Mbps.
- Research facilities are created.

4.1.3 Does the College provide all departments with facilities like office room, common room, and separate rest rooms for women students and staff?

The College provides all departments with the facilities like office room, common room, and separate rest rooms for women students and staff.

- All department office rooms are well equipped with infrastructure such as a computer system, internet connection and phone facility. All the Departments have sufficient number of notice boards.
- Separate rest rooms are available staff and students. Cleanliness and proper hygiene is maintained in these rest rooms.
- A common room with recreational facilities is available for the students.

4.1.4 How does the College ensure that the infrastructure facilities meet the requirements of students/staff with disabilities?

The college takes efforts to provide required facilities to the students/staff with disabilities.

- There are lifts provided in each building with access to students and faculty. These lifts are well maintained to ensure safety.
- Each building in the campus has a provision of ramp to reach to the ground floor through which a wheelchair can reach to any floor.
- The college makes necessary arrangements as and when students/staff come up with additional requirements.

4.1.5 How does the College cater to the residential requirements of students? Mention

Capacity of the hostels and occupancy (to be given separately for men and women):

The college has hostel facility for women students that can accommodate 1050 students. Hostel has 100 % occupancy.

Recreational facilities in hostel/s like gymnasium, yoga center, etc.:

Tejaswini health club is located in the hostel campus. This club has a provision of gymnasium, aerobics, yoga and zumba. The students can be the members of this club at discounted rates. The gymnasium has qualified and trained instructors. Gymnasium also provides yoga certification courses.

College has a playground of 2.5 acres. The ground has several sports facilities for games such as volleyball, football, handball, kabaddi, kho-kho, box cricket, netball, basketball and athletic track. Apart from outdoor games, the college provides facilities for indoor games such as table tennis, carom, chess and fencing.

Broadband connectivity / wi-fi facility in hostels:

Hostel students can access the internet facility by a wi-fi connection.

4.1.6 How does the College cope with the health related support services for its students, faculty and non-teaching staff on the campus and beyond?

- There is an on-campus medical facility available for students and staff. Full time qualified doctor and a team of nurses are available in the campus.
- In case of medical emergency, the teaching and non-teaching staff members can avail medical insurance facility provided by 'Mediassist'.
- The college staff and students can avail medical facilities provided by Deenanath Mangeshkar Hospital and Shashwat Hospital at concessional rates.
- Various lectures and camps are arranged to make students and staff aware on diet and exercises for healthy life.
- The college arranges special workshops for health check-ups of students.

4.1.7 What special facilities are made available on the campus to promote interest in sports and cultural events?

To promote interest in sports and cultural events, the college encourages students by providing adequate budget and resources.

Facilities for Sports Activities:

- College has a playground of 2.5 acres. The ground has many sports facilities like basket ball, volleyball, Football, Handball, Kabaddi, KhoKho, Box Cricket, Netball and Athletic track.
- Apart from outdoor games college has made provision of indoor games such as Table tennis, carom, chess etc.
- College has a well-equipped gymnasium with facilities such as machine exercises, free weight exercises, aerobics, zumba, massage, steam bath and a separate hall for yoga and meditation. These facilities are made available in concessional rate for the students. The gymnasium has qualified and trained instructors. Gymnasium also provides yoga certification courses.
- Specialized coaches are appointed to train the students participating in various zonal, all India and Inter-university level tournaments.

Facilities and promotion of Cultural Activities:

- College has sound system, music system, drum set, light system and various allied equipment.
- To promote Indian classical music culture among students, Art Circle of Cummins College and SPIC Macay jointly organizes concerts of renowned artists.
- College conducts workshops by inviting professionals on drama, painting, paper quilling, etc.
- College has many cultural clubs such as Photography Club, Film Club, Dance club, Heritage club. Students organize various activities under these clubs.
- Every year an art exhibition is conducted to render the students an opportunity to express in the form of art. A display of the exhibits, including photographs, paper quilling art, canvas painting, pencil sketching, sculpture, rangoli, abstract paintings.
- Every year students organize cultural event named “Gandhar”.
- The students from college have participated in various state and national level competitions and also won prizes in the same. Students are motivated to participate in intercollegiate competitions like “Purushottam” drama competition, “Firodiya Karandak” ,”Mood Indigo”, “Astitva”, etc.
- College has included an audit course to promote and nurture students’ interest in art forms in the curriculum.

- College publishes annual magazine named “Kshitij”. Student magazine committee along with the faculty coordinator looks after the magazine activity.

4.2: Library as a learning resource:

4.2.1 Does the library have an Advisory Committee? Specify the composition of such a committee. What significant initiatives have been implemented by the committee to render the library, student/user friendly?

The library has an Advisory Committee, whose composition is as follows:

- Chairman: Director
- Secretary: Librarian
- Members: Vice Principal, Assistant Librarian, Training & Placement officer and one faculty representative from each department

This committee plays a vital role in designing policy matters / decisions for smooth running of the Library. Significant initiatives implemented by the library committee are:

- Open access system
- Digital library access from anywhere
- Orientation program for first year students
- Recognition to the most active student borrower
- Encouragement to general reading through book club activity
- Email alerts for staff and students on new arrivals

4.2.2 Provide details of the following:

- **Total area of the library (in sq. mts.):** 800 sq. mts.
- **Total seating capacity:** Library has a reading room with 260 seating capacity.
- **Working hours (on working days, on holidays, before examination days, during examination days, during vacation):**
 - **Week days:** 7.30 a.m. to 7.30 p.m. (Monday to Saturday)
 - **On Sundays:** 9.00 am to 6.00 pm
 - **Examination days and Vacation:** 7.30 a.m. to 9.00 p.m.
- **Layout of the library (individual reading carrels, lounge area for browsing and relaxed reading, IT zone for accessing e-resources):**
 - The central Library has Stack section, Circulation Section, Periodicals section, Reference section.
 - The central library also has a Reading Hall with seating capacity of 260.
 - Digital library section and reprographic facility section are available.

- **Access to the premises through prominent display of clearly laid out floor plan; adequate signage; fire alarm; access to differently abled users and mode of access to collection)**

There is prominent display of clearly laid out floor plan for easy access to the library. All book cases are provided with adequate signage. Library follows open access system to book collection. To ensure safety within library, fire extinguishers are made available.

4.2.3 Give details on the library holdings

a) **Print**

(Books, back volumes and thesis)

- There are 54448 Print Books with 15984 titles, 4930 reference books and 1892 bound volumes of periodicals.
- Institutional membership to Savitribai Phule Pune University (SPPU) and British Library and Automotive Research Association of India are made available to students.

b) **Non Print (Microfiche, AV)**

There is a collection of 139 CDs in the library. The CDs include technical lectures, videos and demos pertaining to subject areas such as computer, information technology, and electronics engineering.

c) **Electronic (e-books, e-Journals)**

Access to Engineering **363 e-books and 642 e-journals** are subscribed and made available to students. College provides online access to a number of refereed journals to promote research culture. Library has received IEEE certificate of recognition and Elsevier certificate for enriching years of relationship with online resources.

Following is the list of some of the most accessed international journals:

- **IEEE ASPP+POP:** 169 e-journals and 2695 proceedings are subscribed through this collection in a wide range of technology areas, including computer engineering, biomedical technology, telecommunications, electric power, aerospace, consumer electronics etc.
- **Science Direct:** Under this title 275 e-journals are available.
- **Springer:** 198 e-journals are subscribed from Springer comprising electrical, electronics, mechanical, and computer related subjects.
- **ASTM Digital Library:** 1737 standards can be accessed through this platform. It covers broad range of engineering disciplines such as aerospace, biomedical, health, industrial, materials science, mechanical, solar engineering etc.

4.2.4 What tools does the library deploy to provide access to the collection?

- **OPAC:** Online Public Access Catalogue (OPAC) allows students to browse a book by author, title or any keyword. The Library uses library management software 'SLIM 21'. It consists of Acquisition, Cataloging, Circulation, Serials control and Web OPAC. Barcode based circulation of books is practiced.
- **Library Website:** On college website www.cumminscollege.org, information about library resources, library working system and link to the resources is provided.
- **In-house access to e-publications:** All students and faculty can access all electronic journals, e-books and previous years' question papers from any machine in the campus.

4.2.5 To what extent is the ICT deployed in the library?

- **Library automation:** Library functions such as Acquisition, Cataloging, Circulation, Serials control are automated using the software 'SLIM 21'. Computers in the library are connected through the LAN for information access as well as management.
- **Total number of computers for public access in library:** 14 machines
- **Total numbers of printers for public access** – One networked printer with reprographic and scanning facility
- **Internet band width speed** – 106Mbps
- **Participation in Resource sharing networks/consortia (like Inflibnet):** The College is having membership of national digital library and Inflibnet for 'E-shodh-sindhu'.

4.2.6 Provide details (per month) with regard to.

- **Average number of walk-ins:** 4284 readers per month on-an-average.
- **Average number of books issued/returned:** 4673 per month on-an-average.
- **Ratio of library books to students enrolled:** 21:1
- **Average number of books added during last three years:** 3192
- **Average number of login per month to OPAC :** 285
- **Average number of login to e-resources:** The e-resources are openly available from within the campus.
- **Average number of e-resources downloaded/printed per month:** 3785

4.2.7 Give details of the specialized services provided by the library

- **Reference:**
 - Faculty and students both have access to the reference section in the library. Total 4930 reference books and 1892 bound volumes of periodicals are available in the reference section. Core reference collection of McGraw Hill is also available to all readers through McGraw hill Online Access.
 - Faculty members and students have access to CDs, handbooks, and manuals in addition to reference books.
- **Reprography:** Reprography facility is available in the library for open access publications.
- **ILL (Inter Library Loan Service):** College is a member of the British library, SPPU library and ARAI library. Students and faculty members can avail loan services of these libraries.
- **Information Deployment and Notification:** Link for the digital library resources is published on the college website. Students and faculty members are informed through emails about library services and new book arrivals.
- **OPAC:**
 - The Library uses SLIM 21 software, which consists of Acquisition, Cataloging, Barcode based Circulation, Serials control and Web OPAC.
 - OPAC allows students to browse a book by author, title or any keyword and provides links to all electronic resources available in Library.
- **Internet Access:**

Every machine in the campus is provided with internet access.
- **Downloads:**

Students can download e-books content as well as journal articles from any machine in the campus.
- **Printouts:**
 - Printout facility is available in all laboratories as well as in library.
 - Reading list/ Bibliography compilation: Reading list and Bibliography compilation facility is available through OPAC.

- In-house access to e-resources
- Faculty members and students can access various resources such as e-journals, e-books, NPTEL video lectures, MOOCs resources.
- **User Orientation:**
 - Every year orientation programme about library usage is conducted for the first year students. It involves information on library resources, OPAC system, library circulation system etc.
 - The students and faculty members are informed about the access and usage of digital library through email communications.
- **Assistance in searching Databases:**
The library staff provides assistance in searching databases.
- **INFLIBNET/IUC facilities:** The College is a member of INFLIBNET for 'E-shodha sindhu'.

4.2.8 Provide details on the annual library budget and the amount spent for purchasing new books and journals.

- Average annual library budget of last three years is Rs. 40,00,000.00
- Average amount spent for purchasing new books for last three years is Rs.19,79,664.96
- Average amount spent for journal subscription for last three years is Rs. 8,02,987.56

4.2.9 Does the library get the feedback from its users? If yes, how is it analyzed and used for improving the library services.

Library collects feedback from students every year on library services. The feedback is analyzed and discussed in Library Committee meeting. It was found that more than 60% of the students are satisfied by library services. Based on the feedback library services are improved as follows:

- 'Book Borrowing Limit' is increased.
- Library hours are extended during preparatory leave till 9pm
- For interested students Book bank scheme is started.
- Book club activity which includes book reading, interactive session with book writer, book review is started.
- Library is open for all weekdays including Sunday.
- Reading hall capacity is increased.

4.2.10 List the infrastructural development of the library over the last four years.

Infrastructural development of the library over the last four years:

- Reading hall capacity is increased.
- Library and reading hall furniture are renovated.
- Additional computers are added in digital library section.

4.2.11 Did the library organize workshop/s for students, teachers, non-teaching staff of the College to facilitate better Library usage?

- Library organizes sessions for students and faculty members to facilitate better library usage.
- Library received 'Award for Innovative Usage' from System for Library Information and Management (SLIM).

4.3: IT Infrastructure:

4.3.1 Does the College have a comprehensive IT policy addressing standards on IT Service Management, Information Security, Network Security, Risk Management and Software Asset Management?

College has IT policy addressing standards on IT Service Management, Information Security, Network Security, Risk Management and Software Asset Management. It outlines the responsible use of the Information Technology infrastructure at the college such as use of licensed software only, procurement of IP based licenses wherever possible, annual maintenance contract for application software, antivirus on every machine, restricted access through firewall, regular information backup, encouragement for usage of open source software.

4.3.2 Give details of the College's computing facilities (hardware and software).

- **Number of systems with configuration**
The college has 1400 computer systems with PV and above configuration.
- **Computer-student ratio**
Computer to student ratio is 1:2. However, in the laboratories, for every student separate computer is provided.
- **Dedicated computing facility**
Every department has dedicated computer lab. In addition to these labs, computer centre with 60 higher configuration machines is available.
- **LAN facility**
All the systems available in the college are connected and are provided with Internet facility via LAN with 106 Mbps speed.

- **Wifi facility**
Wifi facility is available in the hostels.
- **Proprietary software / Open source software's**
College makes use of large number of open source software's and OS such as Ubuntu14, Fedora 20.
College also has licenses for list of OS such as Microsoft Campus Agreement License and Microsoft Base licenses, VM ware Vsphere Plus 4 for 3 Host, Red-hat Linux, Windows N.T. Workstation 4.0, and Windows N.T. Server 4.0
- **Number of nodes/ computers with internet facility**
All the 1400 computers available in the college are provided with internet facility.

4.3.3 What are the institutional plans and strategies for deploying and upgrading the IT infrastructure and associated facilities?

Deployment of IT infrastructure is done through system administration team. All the academic and administrative IT infrastructure requirements are addressed by this team. The College regularly upgrades both the software and the hardware facilities as per academic requirements. The following are the strategies for deploying and upgrading IT infrastructure and associated facilities.

- Computers are replaced periodically.
- Software's are purchased and licenses upgraded as per requirement.
- Firewall and Anti-virus software are upgraded regularly.

4.3.4 Give details on access to online teaching and learning resources and other knowledge, and information provided to the staff and students for quality teaching, learning and research.

For quality teaching, learning and research the college provides access to a variety of online resources as follows:

- All the classrooms and laboratories are well equipped with the computer systems connected to internet for access to online resources.
- Students and faculty members can access electronic journals and e-books from any machine.
- Students and faculty members can access NPTEL and MOOCs resources.
- Access to the INFLIBNET – E-shodha-sindhu is available for research content.
- Access to the national digital library resources is also available to the students and faculty members.

4.3.5 Give details on the ICT enabled classrooms/learning spaces available within the College and how they are utilized for enhancing the quality of teaching and learning.

Details on ICT enabled classrooms/learning spaces available within the College are as follows:

- All the classrooms are ICT enabled with a computer, LCD facility, LAN and internet connectivity for enhancing teaching-learning process.
- All the laboratories are provided with internet connectivity and computing systems to access worldwide web and e-learning materials
- Seminar halls are equipped with multimedia facilities.
- Video Conferencing facilities are available for interaction with Industry experts and academicians.

These facilities are utilized to enhance quality of teaching and learning in the following manner:

- ICT facilities are used to prepare and deliver lectures and to conduct laboratory sessions.
- Invited talks and webinars are conducted in seminar halls using ICT facilities.
- College is one of the remote centers for workshops organized by ISTE and conducted by IITs. These workshops are held in ICT enabled seminar hall.
- Video conferencing facility is used for interactive sessions with professors from other universities, industry experts and recruiters.
- Teaching materials prepared by the faculty members are shared with the students through email groups.

4.3.6 How are the faculty facilitated to prepare computer aided teaching-learning materials? What are the facilities available in the College or affiliating University for such initiatives?

Every faculty member is provided with computers with internet connection to prepare computer aided teaching-learning materials. In addition to this, printing and reprographic facilities are available in every department. To customize video contents to be used in lectures, college has subscribed to the software tool developed by 'Yen-for-Ken'.

4.3.7 How are the computers and their accessories maintained? (AMC, etc.)

AMC is outsourced to external agencies on yearly basis. Engineers from the service provider company maintain all machines and printers of the college. AMC coordinators from departments along with lab in-charges coordinate the activity to ensure all computers and printers are in properly working condition.

4.3.8 Does the College avail of the National Knowledge Network connectivity directly or through the affiliating University? If so, what are the services availed of?

The College is not a part of the National Knowledge Network.

4.3.9 Provide details on the provision made in the annual budget for update, deployment and maintenance of the computers in the College?

The annual budget for update, deployment and maintenance of the computers in the College is Rs. 25 lakhs for the year 2016-17 and Rs. 30 lakhs for the year 2017-18.

4.4 Maintenance of Campus Facilities

4.4.1 Does the College have an Estate Office / designated officer for overseeing maintenance of buildings, classrooms and laboratories? If yes, mention a few campus specific initiatives undertaken to improve the physical ambience.

The parent institution of the college has estate office and designated officer for monitoring the maintenance of buildings, classrooms and laboratories.

A few specific initiatives undertaken to improve the physical ambience in the last four year are:

- Concreting of the parking area
- Coloring of buildings
- Changing window shutters
- Renovation of washrooms
- Planting of new trees

4.4.2 Does the College appoint staff for maintenance and repair? If not, how are the infrastructure facilities, services and equipment maintained? Give details.

- The college has appointed external agencies for maintenance and repair of infrastructure, equipment and other facilities.
- The estate office appoints agencies for maintenance of lifts, fire extinguishers, fire systems and generator. Physical infrastructure repair work is carried out by appointing external agency.

- AMC contract is given to external agency for the maintenance all computers within the college. Engineers from the service provider company are available in the campus for maintaining the computers and peripherals.
- Other laboratory equipment is maintained by technical supporting staff. In case of any repair requirement, service is hired from outside agencies.
- To maintain internet connectivity and CCTV security system, network and system administration team is appointed.
- LCD projectors, EPBX system, air conditioners and water coolers are maintained with the help of external agencies.

CRITERION V

STUDENT SUPPORT AND PROGRESSION

5.1 Student Mentoring and Support:

5.1.1 Does the College have an independent system for student support and mentoring? If yes, what are its structural and functional characteristics?

The institute provides a number of mechanisms for student support and mentoring. The support is provided for –

- **Mentor-mentee scheme:**
 1. The institute has a mentorship scheme. For a group of 25-30 students one faculty member is assigned as Mentor. This aims at helping students in curricular and other activities. The mentor guides for the overall development of the mentees, which includes academic performance, career development and personal development.
 2. The schedule for the mentor - mentees meeting is mentioned in the academic calendar. The mentees can meet the mentors additionally any time during the semester.
 3. The issues/ difficulties raised in such meetings are further escalated if required.
- **Dean of student affairs** – Dean of Student Affairs addresses the problems faced by the students. Students can approach Dean of student affairs for their problems and assistance.
- **Elected students' representatives** – every year students' elections are conducted. Elected students share various responsibilities such as organizing events, publishing magazine, etc. They communicate problems, expectations of students to the Institute's administration and act as a support system among themselves.
- **The medical support** – Medical facility and residential doctor are available on the campus.
- **Counsellor** - Qualified counsellor is appointed by the institute to help students in case of any personal level issue.
- **Financial support** – Students from economically weaker section, socially underprivileged section get scholarships from the Government. However, still some students face challenges in meeting educational cost and living expenses. Institute with the help of parent trust supports such students from its own fund or try to get financial aid from other donors.

- **Meetings with the Director and the Heads of Departments** – students’ meetings are conducted regularly with the Heads and the Director to understand the problems faced by the students.
- **Placement Cell** – The Institute has Training and Placement Cell. The Cell mentors and guides students in placement activities. The cell not only supports the current students but also helps passed out students for recruitment.

5.1.2 **What provisions exist for academic mentoring apart from classroom work?**

For academic mentoring of the students apart from classroom sessions opportunities and resources are made available.

- **Final year Projects:** It is an important academic activity in engineering education. Mentoring by faculty supervisors and industry experts from the sponsoring industry enriches students’ technical knowledge.
- **Internships:** During summer internships experienced professionals mentor students.
- **Guest Lectures:** On various topics guest lectures are arranged for students. Experts from industry and academics are invited for such sessions. Alumnae are also invited to share their experiences. Students get the opportunity to interact with domain experts during such lectures. More than 150 guest lectures were organized in the last four years. Some of the topics of the lectures were Advanced ‘C’, Recent trends in Broadband Communication, Life Skills, Machine Learning, Business Intelligence, Virtualization, Fluid Mechanics and Heat Transfer etc.
- **Professional Society Activities:** Institute has chapters of professional societies such as CSI, IEEE, The IET, ISA, ACM-W and SAE. These chapters organize guest lectures, seminars, project competitions, workshops etc. which supplements academic mentoring.

5.1.3 **Does the College provide personal enhancement and development schemes for students? If yes, describe techniques employed e.g., career counseling, soft skill development, etc.**

The institute provides various schemes for personal enhancement and development of students. The details are given below:

Employability Enhancement Program – Institute conducts a unique 40 hours certification training program on “Innovation, Employability Skills Enhancement and Career Building” to all third year students. This program is offered without charging any fees to the students. The program has modules like – Psychometry tests, Video Analysis and English Language Tips, Transactional Analysis, Group Discussion, Corporate grooming and Effective Resume Writing, etc.

Soft skills and English communication training – With the help of

Confederation of Indian Industry (CII) and EATON, the institute offers soft skill training especially for students from vernacular and rural background. Volunteers from CII and Eaton, having rich experience of corporate working, conduct the sessions. Pre and post assessment of students is also done by experts. The institute has been conducting this program for last seven years and it has been proved as a successful program.

Quantitative aptitude - It is one of the important skills tested at the time of recruitment. Institute conducts quantitative aptitude test practice and guidance sessions.

Aspiring Minds Creativity Aptitude Test (AMCAT) – Every second and third year student takes Aptitude test designed by ‘Aspiring Minds’. This test is approved by many reputed industries. Outcome of test helps the students to know their skill-set level and respective national average. The students are mentored to improve on the skill-set level further. Test charges are borne by Cummins India Ltd.

Professional society chapters – Institute has student chapters / branches of IEEE, The IET, CSI, ISA, ASME, SAE, ACM-W. Activities conducted by these chapters such as workshops, industrial visits and project competitions provide experience of organizing the events, gives confidence and develops leadership qualities.

Counseling for higher studies – The Institute encourages the students to pursue higher education activities. The institute has signed various MoUs with foreign universities like Purdue University (USA), Carnegie Mellon University (Australia), Deakin University (Australia), La Trobe University (Australia). The students get scholarships to pursue higher education through these MoUs.

5.1.4 Does the College publish its updated prospectus and handbook annually? If yes, what are the activities / information included / provided to students through these documents? Is there a provision for online access?

The College publishes its updated prospectus and other information annually.

Prospectus – It includes information about parent institute (samstha), programs offered, admission procedure, facilities available on the campus, hostel facility, departmental information, industry tie ups, placements etc. Prospectus can also be accessed from college website www.cumminscollege.in.

Website – The College hosts the website, which is regularly updated and accessed by students, parents and faculty. It provides the updated information on the following topics:

- Programs offered, intake, admission procedure, fees
- Profile of Departments and faculty members
- Academic calendar, syllabus
- Library access, e-journal access
- Various scholarship schemes, fellowship programs, placement announcements, events, news and notices
- Quick links for Internal Quality Assurance Cell and information of various committees like anti-ragging, harassment etc.

5.1.5 Specify the type and number of scholarships / freeships given to students (UG/PG/M.Phil/Ph.D./Diploma/others in tabular form) by the College Management during the last four years. Indicate whether the financial aid was available on time.

The parent institution Maharshi Karve Stree Shikshan Samstha is dedicated for education and empowerment of women since 1896. The samstha and the institute have been always supportive for education of needy and economically backward women. The students receive the aid on time.

Funding by samstha (parent institution): More than 100 endowment scholarships are instituted by the ‘samstha’ through public donations. The interest received on these donations is utilized for awarding scholarships to a number of needy and topper students.

Budget allocation by the institute: Every year, financial assistance is given by the institution. The budgetary provisions are allocated in addition to endowment. This amount is utilized for the students from low income strata.

Scholarship / Freeship type	2015 – 16	2014 – 15	2013 – 14	2012 – 13
Endowment Scholarship	67	71	65	Nil
Scholarships from institute funds	60	56	42	30

5.1.6 What percentage of students receives financial assistance from state government, central government and other national agencies? (e.g., Kishore Vaigyanik Protsahan Yojana (KVPY), SN Bose Fellow, etc.)

The central and state governments provide financial assistance to meritorious students from poor and backward families for pursuing professional and higher studies.

- **Funding by central government:**

- Bharat sarkar central sector scholarship: Students who have secured above 80% marks at 12th standard examination can get this scholarship.
- Minority scholarship: Central government gives scholarship to the students who belong to the minority community (Muslim, Sikh, Parsi, Buddha, Jain etc). Students get 50% of the tuition fees as scholarship.
- **State Government Scholarship:** Students from socially backward and economically backward class get scholarships from the state government.

The details of these scholarships are as given below:

Type and Name of the Scholarship		2015-16	2014-15	2013-14	2012-13
		Students receiving scholarship in %			
State Government	STC	0.30	1.21	0.19	0.21
	PTC	0.26	0.23	0.12	0.12
	S.C. SCHOLARSHIP	4.38	3.75	2.84	2.49
	N.T. SCHOLARSHIP	3.66	3.48	3.54	3.44
	O.B.C. SCHOLARSHIP	5.77	5.90	5.65	5.22
	S.B.C. SCHOLARSHIP	0.91	0.91	0.62	0.66
	S.T. SCHOLARSHIP	0.26	0.38	0.51	0.66
	S.C. FREESHIP	5.81	5.52	5.77	5.06
	O.B.C. FREESHIP	5.43	6.36	5.45	8.75
	N.T. FREESHIP	2.41	2.65	2.30	3.61
	S.B.C. FREESHIP	0.87	0.72	0.70	0.58
S.T. FREESHIP	0.53	0.61	0.51	0.54	

	EBC SCHOLARSHIP	6.41	7.15	7.09	7.34
	Total in %	37	38.86	35.29	38.68
Central Sector	NATIONAL MERITE SCHOLARSHIP	0.15	0.11	0.12	0.12
	CENTRAL SECTOR SCHOLARSHIP (Above 68.83%)	1.36	2.04	1.17	2.94
	MINORITY SCHOLARSHIP	0.41	0.42	0.78	0.66
	Rashtriya Pratibha Khoj Yojana From NCRT	-	-	-	-
	Handicap Post Matric Scholarship from Zilla Parishad	0.15	-	0.04	0.08
	GOI Nominee from other State Scholar-ship	0.15	0.04	0.04	-
	Total	2.23	2.61	2.14	3.73

5.1.7 Does the College have an International Student Cell to cater to the needs of foreign students? If so, what measures have been taken to attract foreign students?

To admit foreign students, special permission is required from AICTE. The institute has not applied for such permission so far.

5.1.8 What types of support services are available for

- **Overseas students** – There are no overseas students admitted so far in the institute.
- **Physically challenged / differently abled students** – Being a professional programme there are a very few number of students who are physically challenged or differently abled. The college

infrastructure provides lifts and ramps at appropriate locations in all buildings.

- **SC/ST, OBC and economically weaker sections** – The state and central government funding schemes are available to such students. The College provides financial assistance for economically weaker students.
- **Students to participate in various competitions/conferences in India and abroad** –
 - Students are encouraged and facilitated to participate in national level, state level and intercollegiate level competitions. Students participate regularly in National level prestigious technical competitions such as ‘Baja’, Robocon, IIT-Techfest, National Creativity Aptitude Test.
 - College pays registration fees for students’ publications in conferences India and abroad.
 - Registration fees are provided to the students in various sports and cultural competitions. Travelling allowance is given to the students representing the institute in various events and competitions.
 - One of our students went to Antarctica expedition. Her partial expenses were borne by the college.
 - The students are also given flexibility in laboratory attendance or submission for participation in various activities.
- **Health center, health insurance** –
 - The institute has full time residential doctor and counselor available on campus.
 - As college is affiliated to Savitribai Phule Pune University (SPPU), every student gets insurance scheme offered by SPPU.
- **Skill development (spoken English, computer literacy, etc.)** –
 - Soft skill – Soft skill training is included in the curriculum. Three full time qualified faculty members conduct training sessions. The institute has developed Digital Language lab which provides a platform to conduct various assignments to improve spoken English.
 - For the students from rural area and vernacular medium, special soft skill is conducted with the help of CII and Eaton Experts from corporate sector engage these sessions.
 - Course on English communication is available on campus. In third and final year, students give seminars on technical topics. Faculty members guide students on presentation and report writing.

- The institute offers various engineering programs; most of the students are well versed with computer and its various applications. Nevertheless, workshops and seminars are organized on software tools, research trends and applications. Some such sessions were on topics like – Bio-imaging techniques, Hands on workshop for COMSOL, Image Processing in MATLAB, etc.
- To develop advanced programming skills code club is formed.
- The students are offered the platform for organizing various activities, events and competitions arranged under student chapters of different professional bodies. The students develop organizational skills, leadership qualities and team working through these events and competitions.
- **Performance enhancement for slow learners / students who are at risk of failure and dropouts –**
 - Slow learners or the students who are at the risk at the failures are identified by continuous evaluation process. Extra sessions are conducted for such students. Individually students are mentored for performance enhancement.
 - The students who are directly admitted through central admission procedure to the second year join the institute late. They are at the risk of the failure as they miss some of the course and laboratory sessions. These students are helped with extra sessions.
 - The institute has made provision of summer term to academically weaker students.
- **Exposure of students to other institutions of higher learning/ corporate/business houses, etc. –**

The college supports students' exposure to professional life, industrial training as well as higher education in various ways.

 - The college has signed MOUs with foreign Universities namely Purdue University, Latrobe University, Deakin University and Carnegie Mellon University. Every year four students are selected for MS program at Purdue under 'Cummins Fellowship Program'. They get tuition waiver and funding for meeting other expenses from Cummins Inc. Till date 40 students are benefited by this program. Professors / Deans of other Universities visit college regularly to give information and insight of higher education opportunities at these Universities.
 - College has good interaction with many industries. Professionals from these industries interact with students and give inputs on latest technology and business functioning.

- The industrial tours and visits are conducted to give students exposure to the functioning of industries.
- The students are allowed for internships in industry. The students get exposure to real life projects, professional ethics, modern tools and techniques.
- The guest lectures, workshops and similar activities are conducted by industry experts with the help of student chapters under various professional bodies and student clubs.
- The industry sponsored projects, as a part of final year curriculum, expose students to recent trends and techniques. The project work helps to inculcate professional values, leadership qualities, team work, technical documentation etc.
- Some such corporate business interactions are listed below:

Name of the industry	Type of interaction/exposure
Cummins India	<ul style="list-style-type: none"> • Sponsorship to Employability Enhancement and Innovation Program for third year students • Interaction with Cummins Leadership, Internships, • Projects
Avaya	<ul style="list-style-type: none"> • Elective Course designed and delivered on 'Unified communication and Contact Center Application' • A session and exhibition on Avaya Technologies
KPIT	<ul style="list-style-type: none"> • Projects in Automotive Electronics • Elective Course designed and delivered on 'Automotive Electronics'
Barclays	<ul style="list-style-type: none"> • Sessions on 'Banking and Investment'
Citi bank	<ul style="list-style-type: none"> • Session on banking and investment and a 100 hrs. training for third year students • Projects to final year students
Persistent	<ul style="list-style-type: none"> • Elective Course designed and delivered on 'Business Analytics' • Projects given to final year students • Project competition and awards to final year students
Forbes Marshall	<ul style="list-style-type: none"> • Conducts sessions on Communication skills for second and third year students • Conducts sessions on Process Components and

	Control for third and final year students <ul style="list-style-type: none"> • Internships to third year students • Project competition and awards to final year students
Eaton	<ul style="list-style-type: none"> • Developing Communication skills for second year students through the program Garnishing Talent • Pratibha Award – Eaton Excellence award
Honeywell	<ul style="list-style-type: none"> • Course in building automation for final year Instrumentation and Control students
BSNL	<ul style="list-style-type: none"> • Training to 10 – 15 third year Electronics and Telecom students
Google	<ul style="list-style-type: none"> • Workshop in Android App development • Seminar, Entrepreneurship meet
IBM	<ul style="list-style-type: none"> • Webinars and Seminars on latest technologies
Microsoft	<ul style="list-style-type: none"> • App fest
Mozilla firefox	<ul style="list-style-type: none"> • Webinars and seminars on Mozilla firefox

The companies like TCS, Accenture, Infosys, etc. conduct sessions on campus selection, Interview techniques, etc.

- **Publication of student magazines:**
 - The elected student council members with the help of student volunteers and faculty coordinator publish annual college magazine “Kshitij”. The institute supports the publication by providing budget. Students and staff articles, interviews are published here. Students’ team manages all activities such as cover page design, editing and publishing.
 - Students also publish College Newspaper, ‘Wordsmith’. It contains articles from students on various events in and outside the college, general awareness, interviews from industry experts and alumni. All departments publish newsletters. The newsletter contains the technical articles by staff and students, department level activities and achievements of students and faculty members. The college provides budget for publishing newspaper and newsletters.

5.1.9 Does the College provide guidance / coaching classes for Civil Services, Defense Services, NET/SLET and any other competitive examinations? If yes, what is the outcome?

College provides guidance to the students for career in Civil services and defense services by inviting guest speakers.

For guidance of other competitive exams such as GATE, GRE, CAT also guest speakers are invited. The parent Institution offers coaching facility for GRE and GMAT.

Preparation material is made available in Library for all the above competitive exams.

Many students of the college have appeared for these competitive exams.

5.1.10 Mention the policies of the College for enhancing student participation in sports and extracurricular activities through strategies such as

- **Additional academic support and Flexibility in examinations**
- **Special dietary requirements, sports uniform and materials**
- **Any other**

The students are always encouraged and supported in their participation in sports, cultural activities and competitions. The institute has policy for funding to all these activities.

- **The additional academic support and flexibility in examination:**
 - Considering the schedule of practice sessions and competition, laboratory time table of participating students is kept flexible. Academic support is provided by faculty members for individual level guidance.
 - Examination of the students participating in sports competitions is rescheduled as per their availability.
- **Special dietary requirements, sports uniform and materials:**
 - The students are given sports uniform, all the facilities and materials.
 - The institute gives travelling and diet allowance to students participating in intercollegiate and zonal levels.
 - The coaches are appointed as per the requirement of various games.
 - College has a well-equipped gymnasium with facilities such as machine exercises, free weight exercises, aerobics, Zumba, massage, steam bath and a separate hall for yoga and meditation.
 - Since academic year 1998-99, every year one student is awarded by 'Sudha Murthy Award' for outstanding performance in sports.
 - Due to the consistent efforts by institution and motivation to the students, around 435 students participated in various tournaments in the last four years.

- In the last four years, 20 students have received Best Player Awards in intercollegiate, inter-university tournaments.
- **Any other:**
 - The institute supports students' participation in cultural activities by providing budget and required resources. A faculty coordinator looks after all their requirements.
 - Our students participate regularly in various state level and intercollegiate competitions such as 'Purushottam', 'Firodiya karandak', etc. Students have also won prizes in these competitions.
 - In the last 3 years, 9 awards were bagged by the students in the areas like Best Acting, Best Direction, The Best Writing etc. In the academic year 2016 – 17, the team won 2nd prestigious position named 'Jayaram Hardikar Karandak' and total 9 different awards.

5.1.11 Does the College have an institutionalized mechanism for placement of its students? What services are provided to help students identify job opportunities, prepare themselves for interview, and develop entrepreneurship skills?

The college has an institutionalized mechanism for the placement of its students through placement cell.

Identifying Job Opportunities:

- The placement cell contacts software and manufacturing industries and other organizations to explore job opportunities.
- The cell also finds job opportunities through advertisements and public announcements by government and non-government organizations.
- The college is a member of federation of training & placement officers working in other engineering colleges under SPPU. This network also helps to find job opportunities.
- Interaction with alumnae is also the source for the information about job opportunities.

Preparing Students for Interview:

- The Placement Cell of the college conducts orientation session in the very first semester and makes students aware about academic criteria, skill sets such as quantitative aptitude, soft skills and technical domain knowledge requirements for recruitment.
- Placement cell invites HR officials of companies to conduct practice group discussion and interview sessions.
- Placement cell coordinates training programs with the help of recruiting companies, e.g. sessions were conducted by Barclays, Citi bank to give inputs on finance and banking operations.

- The Cell coordinates placement activities such as tests, group discussions and interviews for the interested students for particular Job.
- The web links for the sample papers, technical subjects are also shared with students.
- Placement officer and faculty members mentor ‘not placed’ students. Not placed students are given opportunity to register for all placement activities for one more year.

Development of Entrepreneurship Skills:

- The college has E-Cell “Yukta” to develop entrepreneurship skills among students. This is well supported by NEN (National Entrepreneurship Network) an initiative by Wadhvani Foundation for promoting entrepreneurship in India.
- Orientation on ‘entrepreneurship’ is conducted under this cell by inviting entrepreneurs.

5.1.12 Give the number of students selected during campus interviews by different employers (list the employers and the number of companies who visited the campus annually for the last four years).

On an average 55 – 60 companies visit college every year. Following is the table showing the number of companies visited and the number of students placed.

Sr. No.	Academic Year	Number of companies visited	Number of students placed
1.	2015 – 16	67	431
2.	2014 – 15	61	364
3.	2013 – 14	51	328
4.	2012 – 13	46	286

Following is the list of employers who visited the campus in last four years:

3 DPLM	Deloitte	JCB	Schneider Electric
Accenture	Eaton	John Deere	Seagate
Acellere Software	Ebay	Johnson Control	Siemens
AGC Essar	Electronica	Kone Cranes	SKF
Airtight	Emerson	KPIT	SNS Technologies
Alfa Laval	Emerson Design Centre	KPIT - Automotive	Softlink
Amdocs	Equal Expert	KPIT Cummins	Sokrati
Anand Corporate	Equilibrium	KSB Pumps	Sungard

	Sloutions		
Anand Group	Ericsson	L&T Infotech	Symantec
Anveshak	Exfo	L&T	Symantec QA
Aricent	Faurecia	M&M	Synechron
Atlas Copco	First Cry	Mediaocean	Syntel
Atos Origin	Fleetguard	Mercedes-Benz	Target
Avaya	Flour Daniel	Microsoft	Tata Communication
Barclays	Forbes Marshall	Microsoft - MSIT	Tata Motors
Barclays Card	Ford Motors	Mind Tree	Tata Power
Belzabar	Forgeahead	Mindbrowser	Tata Technologies
Bharat Forge	Fulham	Mindtree	TCS
Bosch	GE	Morgan Stanley	TE Connectivity
Bridgestone	GE Aviation	Mu Sigma	Tech Mahindra
Cadbury	GE OMLP	NVIDIA	Tetra Pak
Calsoft	General Mills	Oracle	Texas Instruments
Capgemini	Geometric	Paramatrix	Thermax
Captronic	Gradmener	Parker Hannifin	Thinking Hut
Carwale	Halliburton	Patni	Thoughtworks
Caterpillar	Harbinger	Persistent	Trans Lang ways
CDK	Headroom Learning	Praj	Visa
CIL	Hexaware	Premium Transmission	Vodafone
Cisco	Honeywell	Principal Financial	Webtech Developers
Clarice Technology	HSBC	Pubmatic	White Apple
CLSA	IBM	Quinnox	Wipro
Continental Automotive Components	Ideas	Rieter India	Wipro VLSI
Crest	Igate	Saba	Yardi
Cummins Group	Inbetween	SAP	Zensar
Cummins India	Infosys	Sap Labs	ZS Associates

Ltd			
Cybage	Inopen	SAS R & D	
CYPRESS	Ittiam	Schaeffler India	

5.1.13 Does the College have a registered Alumni association? If yes, what are its activities and contributions to the development of the College?

The college has alumni association. Alumnae meet is conducted every year. Alumnae from various parts of the world enthusiastically participate in the meet. In the silver jubilee year (2015-16) some of the alumnae from abroad joined this meet through google hangouts. The alumnae participate and contribute to the development of the institute in the following ways:

- Internal Quality Assurance Cell (IQAC) has alumnae of the college as members. These members contribute to the improvement of teaching-learning processes.
- Alumnae have active participation in syllabus framing as BOS members.
- The alumnae are invited to deliver guest lectures and also as the resource persons for workshops and seminars on recent trends in technology.
- They also share their professional experience and motivate the students.
- The alumnae actively participate as judges in various technical and non-technical competitions organized at the institute.
- Alumnae also provide the sponsorship for national level technical event 'Innovation' organized by the college.

5.1.14 Does the College have a student grievance Redressal cell? Give details of the nature of grievances reported and how they were redressed.

The college has mechanisms to address student grievances by various ways:

- The college has students' grievance redressal cell. The students can approach for any grievances related to facilities, support systems and academic activities.
 - The institute conducts students' elections every year. The elected panel members communicate their problems, difficulties and grievances to the Director and Dean – student affairs.
 - The meetings of students with the Director also act as a platform to convey their grievances.

Grievances reported were mainly related to library timings, reading hall facility, hostel facilities, canteen facility and internet bandwidth. To redress the grievances following corrective actions were taken:

- Reading hall capacity is increased. The Library is now open also on Sunday. Non-technical books are issued along with technical books.
- Coupon system is started in the canteen for better management. As the canteen sitting area is very small, construction of well-furnished cafeteria is under consideration.
- Internet bandwidth is increased from 12 mbps to 106 mbps.

5.1.15 Does the College have a cell and a mechanism to resolve issues of sexual harassment?

The institute has formed Women's Grievance Cell against sexual harassment.

- As per the directives given by Supreme Court Institute Level "Women's Grievance Cell against Sexual Harassment" is formed.
- The head of the institute, the representation of non-government organization and a faculty member constitute this committee.
- Committee members' details are available on the College website. Committee meetings are conducted regularly.
- There are no cases of sexual harassment reported till date.

5.1.16 Is there an anti-ragging committee? How many instances (if any) have been reported during the last four years and what action has been taken on these?

The college has anti ragging committee constituted as per the norm F.No.37-3/Legal/AICTE/2009 dated July 1, 2009. Director of the institution, Dean Student affairs, hostel warden, faculty member representative, student's representatives, non-teaching staff member representative, parent representative, local police station nominee and non-government organization nominee are the members of the committee.

- The ragging is strictly prohibited in the institute. Helpline numbers are displayed in college and hostel premises. The institute provides open and healthy learning environment for students. The nominated dorm students look after the freshly joined students in hostel and communicate their problems to hostel coordinator.
- One of the students had lodged ragging complaint. The complaint was related to miscommunication among hostel room-mates. Hostel warden and Director counseled the students and the issue was resolved.

5.1.17 How does the College elicit the cooperation from all stakeholders to ensure overall development of the students considering the curricular and co-curricular activities, research, community orientation, etc.?

Main stakeholders of the college are management, faculty members, employers and parents. Co-operation of all stakeholders is important to ensure overall development of students.

Management: The college management proactively takes initiative for curricular and co-curricular development of the students. The management explores opportunities for collaboration with industries and academic institutes for overall development of the students.

Faculty:

- The faculty members ensure the curricular development of the students by making classroom sessions interactive and by providing individual attention during laboratory and tutorial sessions to address their queries and difficulties. In addition to this, industrial visits and guest lectures are arranged to know practical and real world aspects of the curriculum.
- The faculty members encourage and guide students to participate in technical competitions such as Baja, Robocon, TechFest, NCAT etc. They also encourage and guide the students for research projects, publications and patent filing. Professional society activities are encouraged and supported for the overall development of the students.
- The institute invites guest speakers to sensitize students about community issues. Faculty members encourage undertaking projects, such as low cost water purifier, medicine dispenser for senior citizens, and design of incision tool etc. aiming at addressing community problems. Faculty members coordinate many NSS activities for community development.

Employers:

- Employers' representatives are members of all the statutory bodies of institute, namely Governing Body, IQAC, Academic Council and BOS.
- Some of the employers have come forward to provide domain knowledge as well as soft skill training; e.g. Eaton provides soft skill training to second year students from vernacular background, Barclays Bank, Citibank, Avaya are offering domain knowledge courses.
- The industry provides project sponsorships to final year students. It enhances engineering abilities like handling real world problems, modern tool usage, technical writing, professional ethics etc. It provides an exposure to the best practices in industry.
- Some employers provide awards to meritorious students and scholarships to meritorious and needy students. Examples include 'Pratibha Award' by Eaton, 'Best Project' award by Persistent and Forbes Marshall, Scholarships by Tata Communications, Cummins India Ltd. and Mercedes-Benz.
- Some of the employers offer summer internships.

- Employers such as Cummins India Ltd., Forbes Marshall and Cisco have helped in laboratory development by sponsoring equipment and software.
- Employers share feedback about the students' technical competency and soft skills. This helps to find gaps and to decide action plan for further improvement.

Parents: Parents support and contribute in all the college activities whole heartedly. Many parents from the technical background and expertise are invited as guest lecturers and judges for various competitions. Parents voluntarily offer sponsorships to various events. Their feedbacks, suggestions and views help institute to improve curricular and co-curricular activities.

5.1.18 What special schemes/mechanisms are in place to motivate students for participation in extracurricular activities such as sports, cultural events, etc.?

The institute strongly promotes active involvement of students in sports and cultural activities.

- **Mechanisms for motivating sports activity:**
 - The sports facilities like playground and gymnasium are made available to the students. Coaches are appointed for guidance. The college funds all the sports activities.
 - To motivate and encourage the students, college recognizes the talent in sports and rewards young women who achieve excellence in sports by delivering annual award of best player of the academic year (Sudha Murthy Award). Also, the students who are selected for Inter Zonal, Inter University and National tournaments are awarded with cash prizes.
 - To encourage participation in sports, the college organizes annual intercollegiate sports tournament 'pentacle'. Parent trust organizes annual intra-trust tournament 'Damini' every year.
 - In last four years, 430 students participated in sports and 50 students have been selected for zonal. Around 20 students have been selected for West zone Inter University and All India Nationals.
- **Mechanisms for motivating cultural activities:**
 - The institute provides facilities like stage, room for practice, sound and light systems, various musical instruments.
 - Students are encouraged to participate in intercollegiate competitions such as Purushottam and Firodiya Karandak, Mood Indigo, Astitva etc.

- Annual cultural festival “Gandhar” is celebrated by the college every year. Intercollegiate dance, music and debate competitions are organized during Gandhar.
- To increase students’ participation in cultural activities non-credit course ‘self-expression’ is included in the curriculum. Under this course students are given training for various art forms.
- **Other activities:** College has an active NSS unit. Various community development activities under NSS are supported by the college.

5.1.19 How does the College ensure participation of women in ‘intra’ and ‘inter’ institutional sports competitions and cultural activities? Provides details of sports and cultural activities in which such efforts were made?

The institute runs engineering program for women only. The college ensures that students will participate in intra- and inter-institutional sports as well as cultural activities not only at the local level but also at the state and national level.

Details of Sports Activities:

Every year college organizes intercollegiate sports tournament ‘Pentacle’. Due to the efforts of the college students have participated and have won awards in sports tournaments such as COEP – ZEST, MIT – SUMMIT, BITS - Goa

Many of our students have been selected as team members in inter-zonal and inter-university competitions for the games volleyball, handball, football, basketball, badminton and swimming.

In the last four years 20 students have participated in the west zone inter-university and inter-zonal sports tournaments.

Students have also represented the state for the national level competitions on Judo and badminton.

Details of Cultural Activities:

To promote participation of students in cultural activities, the college organizes annual cultural festival ‘Gandhar’. This includes intra- and inter-collegiate cultural competitions.

Students participate in prestigious drama competition ‘Purushottam’ every year. They have won team-level and individual-level prizes in this competition.

Students also participate in cultural competitions such as ‘Mood Indigo’, Sinhgad – Mahakarandak etc.

5.2 Student Progression:

5.2.1 Provide details of programme-wise success rate of the College for the last four years. How does the College compare itself with the performance of other autonomous Colleges / universities (if available)

The college has become autonomous from the academic year 2016-17. No batch has passed out till date in the autonomous scheme.

The program-wise success rate of all the courses in the examination conducted by SPPU is listed in following table:

	2015 – 16	2014 -15	2013-14	2012 – 13
B.E. Computer Engineering	95.63	98.19	95.73	94.2
B.E. Electronics and Telecommunication Engineering	93.94	98.28	96.00	92.75
B.E. Instrumentation and Control	92.40	98.50	100	100
B.E. Information Technology	93.54	96.77	98.18	96.82
B.E. Mechanical Engineering	90.9	91.46	98.43	93.93
M.E. Electronics and Telecommunication Engineering	100	100	100	94.44
M.E. Instrumentation and Control Engineering	81.25	87.50	55.55	62.50

Compared to the results of the other non-autonomous colleges affiliated to SPPU, results of our college are very good.

Every year Outlook magazine conducts survey of professional engineering colleges in India. Colleges are ranked based on parameters such as admission process, academic excellence, personality development, industry interface, infrastructure and placement. The institute has participated in this survey for last three years and has been ranked in top 75 engineering colleges in India.

Among 3500 colleges in India, the institute has been awarded high ranking. The consistent effort by faculty members, students and management has resulted into improved ranking in 2015 – 16.

The ranks awarded for last three years are as follows

Academic year	Rank
2015 – 16	57
2014 – 15	69

2013 – 14	68
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5.2.2 Provide the percentage of students progressing to higher education or employment (for the last four batches) highlight the observed trends.

The teaching-learning process, co-curricular activities and value-addition programs have resulted into good job offers. Reputed industries/organizations visit college for campus recruitment. Many students enroll themselves for higher education immediately after the graduation. Some of the students pursue higher education after work experience of 2-3 years.

Student progression	Academic Year 2015 – 16	Academic Year 2014 – 15	Academic Year 2013 – 14	Academic Year 2012 – 13
UG to PG	13.70	12.96	12.96	14.76
PG to M.Phil.	NA			
PG to Ph.D.	5.55	0	0	0
Employed				
• Campus selection	79.815	67.407	60.926	68.095
• Other than campus recruitment	Data Not Available			

It is observed that around 13% of the total students pursue higher studies after graduation in universities/institutions abroad. Around 70 % of the students are placed every year in reputed industries/organizations through campus recruitment.

5.2.3 What is the Programme-wise completion rate/dropout rate within the time span as stipulated by the College/University?

The programme-wise completion rate and dropout rate are as below:

		AY 2015– 16	AY 2014– 15	AY 2013– 14	AY 2012 – 13
B. E. Computer Engineering	Dropout rate	2.69	5.69	2.67	0.65
	Completion rate	97.30	94.31	97.32	99.34
B. E. Electronics and Telecommunication Engineering	Dropout rate	3.72	3.09	4.11	5.97
	Completion rate	96.28	96.46	95.89	96.28
B. E. Instrumentation and Control	Dropout rate	0	5.26	1.47	0
	Completion rate	100	94.84	98.57	100
B. E. Information	Dropout rate	1.42	1.25	0	0

and Technology	Completion rate	98.58	98.75	100	100
B. E. Mechanical Engineering	Dropout rate	0	2.74	1.38	1.45
	Completion rate	100	97.26	98.62	98.55
M.E. Electronics and Telecommunication Engineering	Dropout rate	5.56	0	5.56	5.56
	Completion rate	94.44	100	94.44	94.44
M.E. Instrumentation and Control	Dropout rate	0	0	0	6.25
	Completion rate	100	100	100	93.75

5.2.4 What is the number and percentage of students who appeared/qualified in examinations like UGC-CSIR-NET, UGC-NET, SLET, ATE / CAT / GRE / TOFEL / GMAT / Central / State services, Defense, Civil Services, etc.

The table below provides programme-wise number and percentage of students who appeared / qualified in examinations.

	AY 2015 –16	AY 2014 -15	AY 2013-14	AY 2012 – 13
GRE	66	56	54	53
TOFEL	66	56	54	53

Many students appear for UPSC, MPSC, CAT, GATE and GMAT examinations. However, exact records for the same are not available with the college.

5.2.5 Provide details regarding the number of Ph.D./D.Sc./D.Litt. theses submitted, accepted, resubmitted and rejected in the last four years.

Ph.D. program, affiliated to SPPU, has started in the year 2014-15. Currently 4 research scholars are admitted to the program.

5.3 Student Participation and Activities

5.3.1 List the range of sports and games, cultural and extracurricular activities available to students. Provide details of participation and program calendar.

The college students participate and organize various indoor, outdoor games, co-curricular, cultural and extracurricular activities at the inter-collegiate level, state level and national level.

Details of the participation in sports activities are as follows:

Sports activities Participation count				
Type	2015-16	2014 – 15	2013 – 14	2012 – 13
Inter-college	102	88	67	57
Zonal	12	08	05	06
University	03	01	04	04
National	03	01	04	04
International	0	0	1	0

- Participation in Cultural and extracurricular activities College
The students' participation in various activities is as listed below.

Cultural and extra-curricular activities Participation and winner count				
Type	2015-16	2014 – 15	2013 – 14	2012 – 13
Inter-college	5	3	1	1
State	9	1	5	21
Zonal	0	0	1	0
University	29	0	12	0
National	12	4	0	3
International	0	0	0	0

The program calendar for academic year 2016 – 17 is listed below.

Month	Sports	Cultural and extra-curricular activities
July 2016	International Yoga Day	Overview of NSS in FE induction programme
August 2016	Independence Day, SPPU Intercollegiate and Interzonal competitions	Intercollegiate – Purushottam Karandak Bharat karandak NSS Activities
September 2016	MIT SUMMIT tournament, SPPU Intercollegiate and Interzonal competitions	NSS Activities Art Exhibition (art circle)
October 2016	SPPU Intercollegiate, Interzonal and west Zone Inter university competitions	
November 2016	SPPU Interzonal, West Zone Inter university and All India Inter University competitions	
December 2016	SPPU Intercollegiate and Interzonal competitions	NSS Winter Camp
January 2017	Republic Day, SPPU Intercollegiate and All India Inter University competitions, Inter samstha competitions –	Intercollegiate – Mood Indigo Sinhagad Karandak NSS Activities

	DAMINI, Inter engineering competitions – COEP ZEST	
February 2017	Inter engineering competitions – PENTACLE, VIT, FLAME, PICT, AISSMS, RMD Sinhgad	Intercollegiate –Gandhar (Annual cultural fest organized by college) Firodiya Karandak BMCC Astitva VIT Milange

5.3.2 Provide details of the previous four years regarding the achievements of students in co-curricular, extracurricular activities and cultural activities at different levels: University / State / Zonal / National / International, etc.

The table below gives details of the previous four years regarding the achievements of students in co-curricular, extracurricular activities and cultural activities at different levels.

Sports activities Winner count				
Type	2015-16	2014 – 15	2013 – 14	2012 – 13
Inter-college	57	57	54	46
Zonal	12	08	05	06
University	03	01	04	04
National	03	01	04	04
International	0	0	0	0

Co-curricular activities Winner count				
Type	2015-16	2014 – 15	2013 – 14	2012 – 13
Inter-college	19	28	5	5
State	6	25	48	19
Zonal	0	0	0	0
University	12	0	0	0
National	68	65	132	71
International	21	5	1	7

Cultural and extra- curricular activities Winner count				
Type	2015-16	2014 – 15	2013 – 14	2012 – 13
Inter-college	4	0	0	0
State	2	1	0	20
Zonal	0	0	1	0

University	29	0	12	0
National	3	2	0	3
International	0	0	0	0

One of our students was the only Indian student among 66 others, who took part in Antarctic research expedition. She could visit and know about the operations of two research stations there. Her tuition fees were waived by the college as partial aid towards her expedition.

5.3.3 How often does the College collect feedback from students for improving the support services? How is the feedback used?

College collects various types of feedback from students during their program period, which includes feedback on support systems as well.

- Feedback on support systems – feedback from final year students is collected on the following points:

- The infrastructure facilities like classroom cleanliness, ventilation, washroom cleanliness, and department laboratory facilities, canteen facility, canteen service, availability and quality of food.

The feedback is discussed by the Director and HOD of respective department. Some of the actions taken over the years are as follows:

- The college has moved to an open source operating system – Linux in most of its laboratories.
- All the college laboratories are now equipped with network laser printers.
- Wi-Fi is made available to the students in the institute and hostel campus, on the need basis.
- The institute has enhanced the bandwidth of the internet connection from 18 mbps to 106 mbps.
- To assist and interact with training-placement officer, student coordinator committee is formed.
- Annual Library feedback is taken from UG and PG students. The feedback is taken on following points:
 - Feedback on all the services provided by the library
 - Feedback on library system for number of books titles and copies, journals available, number of reference books.

The library feedback is used to improve library services in following ways.

- As per students demand, the number of books borrowing limit is increased.
- Number of non-technical books is increased.
- Library is kept open on Sundays as well.

- Efforts are made to inform the students by sending for library facilities on mails.

5.3.4 Does the College have a mechanism to seek and use data and feedback from its graduates and employers, to improve the growth and development of the College?

The college has a mechanism to take the feedback from its graduates and employers.

- The TPO annually collects the feedback from its employers at the time recruitments.
 - This feedback helps to know students' employability level, their readiness level to work as engineers.
 - Feedback analysis is forwarded to respective department Heads.
 - The corrective actions are taken such as modifications in syllabi, addition of elective courses on latest or upcoming areas, soft skill training etc.
 - Some Employers also communicate feedback on students' performance.
- During alumnae meet college collects feedback from graduates. College faculty also receives informal feedback from alumnae. This feedback helps college development.
- Alumnae and employers are the members of IQAC and BOS. In the meetings, they provide overall feedback for the development of the institute.

5.3.5 How does the College involve and encourage students to publish materials like catalogues, wall magazines, College magazine, and other material? List the major publications/ materials brought out by the students during the previous academic session.

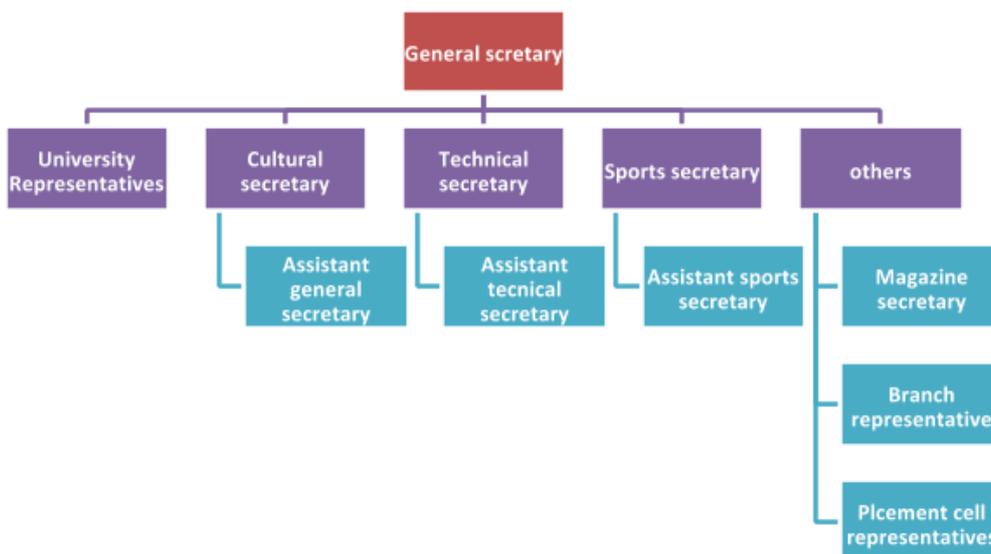
The Institute encourages publications by students. The college magazine "Kshitij" is published annually. Also, students are involved in publications of department newsletters. The institute provides budget for the publication of magazines and newsletters.

- **College Magazine- ‘Kshitij’:** It provides a platform to students to showcase their talent and creativity. The elected student members act as editors and assistant editors. The student team carries the responsibility of collection of articles, design and edition of magazine along with a staff coordinator. Different articles, stories, interviews and poems related to the theme are collected, reviewed and published by the student volunteers. It includes technical articles, departmental reports and also reports related to different activities such as NSS, cultural, Sports, placement, E -cell activities.
- **Department newsletters:** Every department publishes their newsletters. A team of students collect the documents and is involved in the publication activities. It showcases information about placements, sport events, paper presentations; conferences organized and attended, guest lectures, details of the best outgoing students, etc. It also highlights the achievers in the University examinations. The different activities of staff members are also included in the magazine.
- **The newspaper ‘Wordsmith’:** It was founded with the aim of providing a platform for students to present their take on current events – from college news to international ongoing. From designing the edition, deciding which software(s) to use, to sending off an issue for printing – the Wordsmith team is highly involved in every step of the process.
- **The Cummins Chronicle:** It is online college newspaper that is published semester wise. It focuses on current affairs and events in the college. It also includes alumni interviews, technical pieces and other general articles.
- **Scilab Textbook Companion Project:** The students along with a faculty member have published a book under Scilab Textbook Companion Project. This project aims to provide the solutions to the solved examples from standard textbooks using open source software.

5.3.6 Does the College have a Student Council or any similar body? Give details on its constitution, major activities and funding.

The college has an elected student council.

- Student council constitution:



Activities organized by student council – Various co-curricular, extracurricular and cultural activities are organized by the student council members along with the faculty coordinators.

- Annual tech-fest ‘Innovation’, various workshops and seminars are organized and looked after by technical secretary and assistant technical secretary along with student volunteers.
- The placement cell representatives help TPO in various placement activities. They also act as interface between students and TPO, for any issues or problems faced by students.
- The magazine team under the leadership of magazine secretary publishes college magazine Kshitij and various department newsletters. The processes like collecting the material, editing, designing and publishing are conducted by students.
- The sports secretary organizes and conduct intercollegiate sports tournament Pentacle.
- The students enthusiastically organize and participate in various cultural events. The university representative, general secretary and cultural secretary play major role in the organization of the annual cultural festival ‘Gandhar’.
- The treasurer along with assistant treasurers takes care of the budget planning and expenses required for various events.

- There are various technical and non-technical clubs run by the students in the institute. The elected members and other student volunteers run the events organized under these clubs.

Majority portion of the expenses incurred towards above activities is borne by the college. Some part of the expenses is supported by employers, parents and alumnae.

5.3.7 Give details of various academic and administrative bodies that have student representatives on them. Provide details of their activities.

Various academic and administrative bodies that have student representatives on them are described as follows:

- Internal Quality Assurance Cell (IQAC) – The General Secretary, Cultural Secretary and University Representative are members of IQAC. They provide the feedback on various student issues and contribute towards improvement in the institute's working.
- Anti-ragging committee – One senior student and one junior student are members of the committee. Their feedback helps to understand issues, if any, at an early stage.
- Training and Placement Cell – Elected placement representatives help TPO in arrangement of various activities related to placement.
- In Hostel, the some of the students are nominated as Dorm representatives. They act as an interface between hostel administration and students.
- The elected student representatives and other students are active in organizing and conducting various technical and non-technical events in the institute.

Criterion – VI

GOVERNANCE, LEADERSHIP AND MANAGEMENT

6.1 Institutional Vision and Leadership:

6.1.1 State the Vision and mission of college

Vision of College:

- To be globally renowned institute for imparting quality education and to develop women leaders in engineering and technology.

Mission of College:

- To develop women professionals who are academically & technically competent with strong professional ethics.

6.1.2 Does the mission statement define the College's distinctive characteristics in terms of addressing the needs of the society, the students it seeks to serve, the College's tradition and value orientations, its vision for the future, etc.?

The mission statement clearly defines the College's distinctive characteristic in terms of:

Addressing the needs of the society: MKSSS's Cummins College of Engineering for Women (CCEW) is the first women engineering college established in India. As percentage of women engineers is low, recognizing this need of the society, MKSSS started all women Engineering College. Objective of the college is to provide quality education in engineering to women, from various strata of the society, to make them academically and technically competent. This objective is clearly reflected in the mission statement.

The College's tradition and value orientations: CCEW comes under the umbrella of its parent institution, Maharshi Karve Stree Shikshan Samstha (MKSSS). Bharatratna Maharshi Dhondo Keshav Karve, a visionary and social reformer, is the founder of the samstha. He established MKSSS in the year 1896 with the objective of empowering women through education. The college believes that graduates of this college should be not only academically sound but should also have values and strong professional ethics. Mission statement has highlighted this expectation.

Vision for the future: Vision of the college is to become globally renowned institute for imparting quality education in engineering. The college aims to achieve this by incorporating experimental and project-based learning in teaching-learning process alongwith strong Institute-Industry Interaction and research opportunities. These efforts will develop graduates who are academically and technically competent thereby making the college a globally renowned institute.

6.1.3 How is the leadership involved in

*** ensuring the organization's management system development, implementation and continuous improvement**

*** interaction with stakeholders**

*** reinforcing culture of excellence**

*** identifying needs and championing organizational development (OD)?**

Leadership involved in ensuring the organization's management system development, implementation and continuous improvement:

Leadership i.e. the MKSSS management committee members, the members of the governing body and local managing committee, Director, Deans and Heads of Departments are actively involved in ensuring organization's management system development, implementation and continuous improvement.

- Parent organization (MKSSS) has managing committee comprising of elected management members, life workers, staff representatives. Committee meets every month and frames policies of development. It also reviews implementation of the same.
- At the college level governing body is formed as per the UGC and AICTE norms. Director, and Dean (Academics) are the members of these committees. The college has also local managing committee (LMC) as per the University guidelines. Director, elected faculty and non-teaching staff representatives are members alongwith the managing committee members. Through Regular meetings of the Governing body and LMC, members guide on system development and its implementation methodology.
- Director and Heads of department meet every week to discuss on academic initiatives, students and faculty development and administrative support required for all the activities. Department Heads interact with the faculty regularly to convey the policies and take the related feedback.
- Director and Deans meet regularly to review and monitor the overall functioning of the college.

Leadership involved in interaction with its stakeholders

Leadership is in regular interaction with the students, alumni, employers and the parents.

Director and Dean (students) conduct meetings with elected student representatives. Students' inputs for infrastructure and facilities development are welcomed in such meetings.

The Director and the Heads of Departments conduct meeting with group of students regularly. Students share their problems and expectations in such meetings.

Every year college organizes alumni meet. This is a very good opportunity for the director and department heads, deans and management members to interact with the alumni in person.

Interaction of alumni also happens through mails and social media. Alumni members are members of various committees such as IQAC, Board of Studies (BOS).

Management committee members, Director and Department Heads have good interaction with employers. Some of the employers have signed MoU for students and staff development. Employers are also involved in Syllabi framing. Some of the employers are members of Governing Body, Academic Council and BOS.

Leadership involved in reinforcing a culture of excellence:

- College vision statement reflects its desire to be globally renowned by achieving excellence in teaching, learning, research and facilities.
- To enforce culture of excellence among faculty members, leadership has promoted many initiatives. Faculty members are encouraged and sponsored to attend workshops, national and international conferences, which helps them to update their knowledge and achieve excellence in teaching as well as research.
- Leadership not only encourages students to achieve academic excellence but also facilitates their overall development. Value addition programs such as 'employability enhancement program', third party evaluation by 'aspiring minds', quantitative aptitude training are offered to the students at no cost. Sports and other extracurricular activities are supported by leadership. Leadership appreciates students' achievements through website, college magazine, newsletter, meetings, noticeboards, awards which inspires students to achieve excellence.
- Dean Quality Assurance and Internal Quality Assurance Committee (IQAC) monitor the academic quality regularly.

- Leadership takes review of infrastructure needs or any enhancement required. Leadership decides policies and execution plans for the same.

Leadership involved in identifying needs and championing organizational development (OD):

- Leadership reviews the stakeholders' feedback and audit reports to identify needs pertaining to the organizational development. Leadership takes into account the reports from national level accreditation bodies such as NAAC and NBA to identify gaps existing in the current academic and other practices.
- The leadership considers best practices in academic institutes to define benchmarks of outcomes and accordingly guides to define strategy plan to achieve the same.
- Members of the Internal Quality Assurance Cell (IQAC) discuss, plan and assure organizational development activities.
- Deans of the college lead and monitor academic as well as administrative development of the organization.

6.1.4 Were any of the top leadership positions of the College vacant for more than a year? If so, state the reasons.

The top leadership positions of the College were not vacant.

6.1.5 Does the College ensure that all positions in its various statutory bodies are filled and conduct of meetings at the stipulated intervals?

Meetings of the statutory bodies such as Governing Council, Academic council, LMC and IQAC are conducted regularly. Minutes are recorded after the meetings. Most of the positions in statutory bodies are filled.

6.1.6 Does the college promote a culture of participative management? If yes, indicate the levels of participative management.

The college promotes culture of participative management at various levels. The college involves its stakeholders in important decision making and management process.

- Before applying to UGC for autonomous status, students' opinions were taken by survey. Teaching and non-teaching staff members' meetings were conducted to know their views. Employers and parents were also involved in decision making.
- Student representatives and alumnae are members of IQAC. They participate in decision making and management through discussion.
- Students' activities are managed by student council members.

- Employers are members of governing body, academic council and BOS. They participate by offering their expertise for college management.
- Every financial year, financial budget is prepared by the Director with the help of Deans and Heads of the Departments.
- Through regular meetings of staff members with department Heads as well as weekly meetings of department Heads, Deans and Director ensure participation of the staff in framing policies and making decisions.

6.1.7 Give details of the academic and administrative leadership provided by the University to the College?

- University representatives are members of statutory bodies such as Governing Council, academic council and Board of studies. These members have rich experience in academics, research and administration. They participate actively in framing academic policies, evaluation rules and regulations. The BOS members provide guidance to other members for syllabus framing and its implementation.
- University conducts workshops for faculty and administrative staff members to guide them on implementation of various schemes such as NSS, sports activities, student welfare activities, national level surveys, workshops and research grants.
- University also conducts workshops for administrative staff on implementation of career advancement schemes, usage of software etc.

6.1.8 How does the College groom the leadership at various levels?

The College grooms the leadership among faculty and students through a variety of ways.

• **Leadership in Students :**

Grooming through value addition programs and invited talks:

- Every year college conducts soft-skill program for second year students. This program is conducted with the help of CII and Eaton. This program includes sessions on team building and leadership.
- Every year college conducts a 40-hour training under the ‘employability enhancement program’ for all third year students. This program includes sessions on grooming leadership.
- College invites corporate leaders, technical leaders and social leaders for talks. Some of the examples are:

1. Interactive session with the students by Mr. Anant Talaulicar (Cummins India Chairperson) on leadership
2. Invited talk by eminent scientist Dr. Raghunath Mashelkar on 'Inclusive Innovation'
3. Invited talk by renowned social activist Mrs. Sindhutai Sakpal

Event organization:

- The student elections are held every year and the elected members form the student council. The student council organizes intercollegiate events such as Tech fest –'Innovation', Cultural fest – 'Gandhar', Sports tournament – 'Pentacle' etc.
- The professional society chapters/ branches namely, IEEE, IET, CSI, ACM-W provide platform for the students to organize events, workshops, etc. thereby grooming leadership qualities among students.

Participation in team activities and competitions:

Students participate in intra and intercollege technical and non technical competitions. For most of the competitions such as 'Baja', 'Robocon', drama competition 'Purshottam' or various sports tournaments, they participate as a team under their leader or captain. This is a very good opportunity to develop team building and leadership qualities.

Grooming Faculty Leadership:

College encourages all faculty members to participate and lead different activities of the college.

- Heads of the departments and Deans are the leaders of academic activities. College encourages senior faculty members to take these roles in rotation, so that more faculty members will get experience and opportunity to be the leaders.
- Faculty representatives in IQAC and LMC present faculty views and problems in meetings of IQAC and LMC. This way they get opportunity to understand views and problems of the management in such meetings and play the role of leading the interface between staff and management.
- Faculty members work as team heads for technical events, workshops, seminars, FDPs, conferences, co-curricular and extra-curricular activities organized by the college. All these activities help to understand their strengths, build confidence and groom leadership qualities.

6.1.9 Has the College evolved any strategy for knowledge management? If yes, give details.

The college has the following strategies for knowledge management:

- There is a common repository of publications of the faculty members which is accessible to all the students and faculty members.
- The data base of students' project reports is available for ready reference.
- The notes and presentations of the lectures are shared by the faculty with the students.
- The college has subscription of e-journals and e-books, which are accessible from any of the computers within campus.
- The central library has vast collection of technical & non-technical books, DVDs, NPTEL lectures. The library has OPAC software through which the online search of the books and other resources is possible.
- Laboratory manuals are prepared by the concerned faculty members. These manuals are shared with the students during laboratory sessions.

6.1.10 How are the following values reflected in various functions of the College?

Contributing to national development:

MKSSS's Cummins College of Engineering for Women (CCEW) is an engineering college exclusively for girls. The development of nation is contributed by:

- Providing higher education to girl students from various strata of the society
- Promoting greater involvement of women in science and technology
- Developing women leaders in engineering and technology
- Motivating the students for Entrepreneurship, thus producing Job creators, rather than Job seekers
- Encouraging NSS and other professional bodies' activities through which community development programs are organized to contribute towards the National as well as Regional developments
- Contributing to the development of technical field by Indian patents and publications
- Providing solutions to the problems in health care, banking, mobile communication, energy, defence services etc. through final year projects

Fostering Global competency through Curriculum:

The college fosters global competency through curriculum as follows:

- Framing of the curriculum and the course contents is done by considering current global trends and inputs from industry and academia.
- Teaching-learning and evaluation processes give emphasis on the development of attributes such as self-learning ability, life-long learnability, technical competency and soft skills to make students globally competent.
- Students are encouraged to register and complete online courses offered by renowned Universities.

Global competency by Exposure to the outside world:

Several avenues are available for students to get exposure to the outside world:

- Domain experts from Multinational companies are invited for guest lectures.
- Students take technical projects from multinational companies.
- College has MOU with Purdue University, La Trobe University, Deakin University and Carnegie Mellon University. Professors from these universities visit and interact with students as well as faculty. This helps students to know state of the art technology.
- College has strong association with Cummins Inc. Occasionally the global leaders from Cummins Inc visit and interact with the students.
- Students participate in intercollegiate competitions and other activities.

Global competency by overall development:

- Introducing students to the activities of professional societies and thereby giving them opportunity to explore upcoming technologies, which supports students' technical development.
- Special emphasis on soft skills and English communication training to sustain in global competition.
- Students are encouraged to participate in intra and intercollege events. This develops abilities such as working in diverse teams, leadership qualities, planning and documentation skills.

All these abilities develop global competency for engineering profession.

Inculcating a value system among students:

- College is run by 120 years old trust dedicated to women empowerment through education. College functioning adheres to the value system with the motto 'शीलं परं भूषणं' laid down by the trust.
- At the first year level value education is included in the curriculum.
- Faculty discourages any unethical behaviour of the students.
- Through Class room sessions, informal interactions, mentoring sessions faculty members emphasize the importance of value system.

- Through NSS and the professional society activities students undertake community activities such as Blood Donation, Tree plantation etc. This inculcates the sense of social responsibility among students.

Promoting use of technology:

Faculty and students use technology for various activities such as –

Teaching-Learning: All classrooms are equipped with multimedia teaching aids and internet connectivity. Faculty members use power point presentation and open web resources during classroom sessions. Lecture materials, notes, assignments are shared through email group and social media platforms. Facilities for MOOCs are provided to the students. Students use simulation softwares in labs.

Feedback: College uses online feedback system to understand students views and suggestions.

Communication: For the communication between faculty members, office and students email groups are created. Students get alerts and email communication for events, exams and other activities. Important notifications are also published on website.

Administration:

- Library resources are managed by OPAC software.
- Faculty members use ERP software for maintaining students' attendance record, choosing examination duties etc.
- ERP software is used for examination related activities such as result analysis, marklist and examination report generation etc.
- Biometric system is used to create record of the faculty members' daily in-and out-timings.
- Financial transaction records are maintained using 'Tally' software.

Quest for excellence:

Institution leadership has taken many initiatives and steps to achieve excellence in terms of infrastructure and other facilities as well as faculty, staff and students development schemes.

Infrastructure development initiatives in the last three years -

- Laboratories with high end equipment set-ups are developed for students' projects and research.
- Computing facilities are improved in terms of upgraded configuration and enhanced quantity. At present college has 1400 computers and 300 printers on campus.
- Bandwidth of Internet facility is increased upto 106 Mbps.
- All classrooms and labs are equipped with LCD projectors.

Faculty development initiatives:

- The faculty members are encouraged to register for Ph.D. by giving full paid study leave up to two years.
- Faculty publications are supported by paying registration fees for national and international conferences. Faculty members are provided with incentives for research publications in reputed journals. College also pays registration fees for workshops and seminars.
- College takes initiative in promoting faculty sabbaticals and consultancy work.

Student development:

- Students are encouraged to participate in and organize various techno-cultural and sports events, entrepreneurship activities, paper presentation etc.
- College offers soft skills training, quantitative aptitude test training, value addition courses at no cost.
- Guest lectures, industry visits are arranged for students.
- College has signed MOU with Purdue University, Deakin University and La Trobe University. MOU with Purdue University provides higher education opportunities under Cummins fellowship program.
- College conducts aptitude assessment with the help of the agency 'Aspiring Minds'. The test helps to find strengths and weaknesses of individual students.

6.1.11 Give details of the UGC autonomous review committee's recommendations and its compliance.

The college became autonomous from the academic year 2016-17. The autonomous review committee has not visited yet.

6.2 Strategy Development and Deployment:**6.2.1 Does the College have a Perspective Plan for development? If so, give the aspects considered in development of policy and strategy.**

The college has a perspective plan for its development, which includes perspective planning for teaching and learning, research and development, community engagement, human resource planning and development, industry interaction, internationalization.

The goal and actions for **teaching and learning** in the perspective plan are as follows:

- a. **Goal:** To explore, experiment, adopt and follow best practices in teaching and facilitate an environment for self-learning and develop life-long learnability.
- b. **Action:**
 - Dissemination of best practices in leading institutes to the faculty members
 - Encouragement for their experimentation and adaption
 - Encourage faculty to implement methodologies of active learning, Project Based Learning, Flipped Classroom
 - Encourage faculty for the creation and use of digital content, MOOCS
 - Encourage students for self-learning, active learning and project based learning

The goal and actions for **research and development** in the perspective plan are as follows:

- a. **Goal:** Institute will be recognized for its significant contributions in research and development in science, engineering and technology
- b. **Action:**
 - To establish design center and center of excellence
 - To encourage and facilitate faculty members for consultancy
 - To promote collaborative research
 - To create awareness on intellectual property rights among students
 - To start Ph.D. programs in all departments

The goal and actions for **community engagement** in the perspective plan are as follows:

- a. **Goal:** To strengthen community engagement through collaborations with society, industry and academia – both at the local and the global level
- b. **Action:**
 - Identify and explore ways to collaborate with other organizations for community development
 - Promote NSS and professional societies activities for community development
 - Sensitize students on community issues

The goal and actions for **Human resource planning and development** in the perspective plan are as follows:

- a. **Goal:** To develop human resources to achieve academic and

administrative excellence.

b. Action:

- To foresee and plan additional human resource requirement considering institution's growth plans
- To organize need-based workshops for teaching and non-teaching staff members
- To depute faculty and staff for development programmes
- To mentor faculty for research
- To create awareness on various policies and trends related to education
- To groom leadership qualities and communication skills

The goal and actions for **Industry Interaction** in the perspective plan are as follows:

a. Goal: To establish close industry interaction for giving industry exposure to students and faculty members.

b. Action:

- To invite industry experts for providing business aspect of technology to the students
- To invite industry experts for curriculum development for making it more industry relevant
- To explore opportunities for consultancy to the industry
- To organize student and faculty visits to industries

The goal and actions for **Internationalization** in the perspective plan are as follows:

a. Goal: To enhance visibility of the institute beyond national boundaries in terms of academic quality.

b. Action:

- To develop curriculum as per the global technology trends and opportunities
- To develop and make available online courses open to international students
- To explore collaborations with academia and industries abroad for research, curriculum development, workshops etc.
- To encourage faculty members to visit institutions abroad

6.2.2 Enunciate the internal organizational structure of the College for decision making processes and their effectiveness.

The college has a well framed internal organizational structure of the College for decision making processes and their effectiveness.

- Governing body is the apex body who decides academic and administrative policies. It approves new programs. It also sanctions budget. Chairman MKSSS is the chairperson of the committee. UGC nominee, SPPU nominee, AICTE and DTE nominee, management representatives, CIL chairperson are the other members. Director is secretary of the council. Minutes of the meetings are recorded and are available to the staff and students. Director communicates decisions to the faculty and staff through meetings. Director also monitors effectiveness of the decisions.
- Academic Council chaired by the Director is the statutory body who approves curriculum, examination schemes etc. Dean-Academics, all Heads of departments, BoS chairmen, University nominee, Industry nominees are members of the body. Dean-Academics maintains records of all decisions and communicates to the staff and students.
- BoS of each department works under the guidance of the BoS chairman. Faculty members and experts frame the curriculum.
- Other committees such as finance committee, IQAC, Library Committee, placement committee, Anti-ragging committee, Grievance committee work under the guidance of the Director. Discussions and decisions are communicated to the faculty, staff and students. Effectiveness of the organizational structure is monitored through surveys.

6.2.3 Specify how many planned proposals were initiated / implemented, during the last four years. Give details.

Planned proposals were initiated/implemented, during the last four years

Year	Sr. No.	Title	Type	Letter details
2016-17	1	Cyber security and evolving technology	National Level Seminar	QIP(2016-17) Letter no. Ccew-687/2016-17
	2	Application of mathematics in engineering streams	State Level Workshop	
	3	Internet of things (IoT)- Analysis, computing techniques in smart cities	State Level Workshop	
2015-16	1	Handwritten Character recognition for Devnagari Script using density based clustering	Research Proposal	Date 2 July 2015 (University Research Grant proposal (2015-17)Letter no. OSD/BCUD/130 28 th April 2015)
	2	Experimental investigation of influence of different oil mist parameters and lubrications oil on minimum quality lubrication- MQL shaping process	Research Proposal	
	3	Experimental investigation of solar desalination system using evacuated tube collector and compound parabolic concentrator	Research Proposal	
	4	Quantitative analysis of delay sensitive performance parameters for transport layer	Research Proposal	

		protocols in internet traffic		
	5	Enhancing security using multiple biometric features using higher level security applications	Research Proposal	
	6	Prediction epileptic seizer condition using EEG signal monitoring	Research Proposal	
	7	Design and implementation of high speed low power Vedic multiplier using field programmable gate array	Research Proposal	
	8	Border surveillance using moving object detection system	Research Proposal	
2014-15	1	Statistics for Engineers	National Level Workshop	Date 14 Oct. 2014 (Proposals under QIP Letter no. Saphupuvi/nivavi/1604 dated 23 rd Sept. 2014)
	2	Soft skills a Key to Professional Excellence	State Level Workshop	
	3	Modern Hydraulic Systems with proportional and servo control	State Level Workshop	
2013-14	1	High Performance Computing: Theory and applications	Seminar	26 th July 2013 (Proposals under QIP Letter no. Puvi/nivavi/1092 dated 8 th July 2013)

6.2.4 Does the College have a formally stated quality policy? How is it designed, driven, deployed and reviewed?

Policy of the college is to take efforts to improve the quality of teaching-learning, research, student support systems and governance.

This quality policy has been framed by involving all the stakeholders i.e. students, faculty, parents and industry. It has been designed by considering the vision, mission, values and the perspective plan of the college. It is driven by statutory bodies and well-defined organizational structure with the help of all the stakeholders.

IQAC reviews and gives guidelines on quality assurance initiatives. Dean – Quality Assurance ensures the deployment of quality checks in academic and administrative activities.

6.2.5 How does the College ensure that grievances / complaints are promptly attended to and resolved effectively? Is there a mechanism to analyze the nature of grievances for promoting better stakeholder-relationship?

Students' grievances/complaints:

- The college has grievance redressal cell, Anti-ragging Committee, Anti-sexual harassment Committee. These committees make every attempt to resolve students' problems.
- Each department has a mentor system through which the communication with the students is possible at the personal level.
- Every year the final year students' feedback is taken on the facilities and infrastructure. Through this feedback, the complaints of the students are understood and efforts are made to rectify them.
 - The college has a counsellor who helps students to tackle psychological problems if any.
 - Director also conducts meetings with the students to understand students' views. Accordingly, possible changes are made in the administrative work.

Faculty grievances:

The College has Human Resource Development Committee (HRD). Management Representative, the Director & the Heads of the Departments are members of the HRD Committee. Staff members can put forward their views through HoDs in the HRD Committee.

6.2.6 Does the College have a mechanism for analyzing student feedback on institutional performance? If yes, what was the institutional response?

- In every semester after the course syllabus is completed feedback from the students is taken related to every course. Feedback given by the students is analysed at the Departmental level for every aspect like teaching methodology, communication skills, syllabus coverage, punctuality, effectiveness of the teaching- learning process and helpfulness towards the students. To improve the effectiveness of the lectures suggestions are given by HoD. This improves the quality of lectures. Suggestions are also given regarding the use of modern tools and to enhance laboratory facilities.
- College also takes feedback on infrastructure facilities, library resources, placement and project guidance. Institute analyses the feedback and strives for the improvement.

Some of the actions taken considering students' feedback: extending library timings, borrowing more books, change in placement policies, increased internet bandwidth, installation of water purifiers etc.

6.2.7 In what way the affiliating University helped the College to identify the developmental needs of the College?

- College has become autonomous from 2016-17. University nominees in the governing body and academic council help college to identify development needs.
- University has informative website. It helps college to identify development opportunities.
- College faculty members are nominated in various university committees. It helps to identify development needs.
- University provides grants for Faculty development programs, seminars, workshops. The grants are also given for the infrastructural development. The faculty members are provided with the travel expenses for the conferences and the R & D projects.

6.2.8 Does the affiliating university have a functional College Development Council (CDC) or Board of College and University Development (BCUD)? If yes, in what way College is benefitted?

The university has BCUD through which the college is benefitted.

- BCUD gives grants to the faculty members for their research and development work.
- BCUD encourages faculty members to attend international conferences by travel grant.
- BCUD financially supports organization and conduction of various seminars and workshops.
- The various training programmes conducted by BCUD for the teachers help in the orientation of the new faculty.

6.2.9 How does the College get feedback from non-teaching, teaching, parents and alumni on its functioning and how it is utilized?

The HoD conducts meetings with teaching and the nonteaching staff periodically. In these meetings the issues related to college functioning are discussed. The representatives from teaching faculty and nonteaching staff are a part of the Local Managing Committee (LMC). In LMC meetings views of the faculty and staff are discussed. Interaction between the parents and faculty members help to obtain feedback on college systems. Alumnae who are members of various committees such as IQAC, BOS express their views and share feedback.

This feedback helps to understand the scope for improvement.

6.2.10 Does the College encourage autonomy to its academic departments and how does it ensure accountability?

- The college encourages autonomy to the academic departments. HoD who is also the Chairman of BoS frames curriculum with the help of the department's faculty members.
- HoD and senior faculty members decide budget for lab expenses. After due approval, the department plans expenses. Departments have dedicated resources of labs, classrooms, lab equipment etc. Utilization of these resources is done as per the departments' planning.
- Departments plan and execute departmental activities independently.
- Every year academic audit of the departments is carried out by other departments' senior faculty. This ensures accountability.

6.2.11 Does the College conduct performance auditing of its various departments?

At the institute level, academic audit is conducted every year in the month of October. Institute level criteria for the academic audit assessment are decided by the Director and all the Heads of the Departments. Under academic audit the points assessed are: Student intake at the first year, Student intake via lateral entry, Total number of faculty members in the department, Student-Faculty ratio (SFR), Faculty-Cadre ratio, Quality of Teaching / Learning Processes, Co-curricular and Extra-curricular activities, Student performance, Student performance in higher studies, placements and entrepreneurship, Faculty contributions, Additional facilities created to enhance the quality of Teaching and Learning Experience.

6.3 Faculty Empowerment Strategies:

6.3.1 What efforts are made by the college to enhance the professional development of teaching and non-teaching staff?

- **Encouragement to faculty members for qualification up gradation:** faculty members get paid study leave for two years for Ph.D. program.
- **Updating domain knowledge:** The faculty members attend various workshops, seminars and refresher courses to update their domain knowledge. Faculty members are provided with the financial sponsorship for the same.
- **Paper presentation / conference participation:** Faculty is motivated to publish and present their work at International conferences in India and Abroad. This gives faculty members an opportunity to interact with other researchers and to get know the current research trends.
- **Organization of Conferences, Workshops, refresher programmes and Seminars:** Faculty is encouraged to organize conferences, workshops,

- refresher programmes and seminars. This helps them to enhance professional skills such as leadership, team building, social skills, planning and documentation etc.
- **Encouraging faculty to take up various roles in professional societies (IEEE, IETE, CSI):** Faculty members work as the co-ordinators/branch counsellors for various professional societies. This gives them opportunity to build professional network.

The professional development of the non-teaching staff is enhanced in following way:

- **Technical skill development:** Seminars and workshops are conducted for technical skill development.
- **Soft skill development:** Sessions are conducted to improve the interpersonal relations, social skills, communication skills, team building, improving leadership qualities for the non-teaching staff

6.3.2 What is the outcome of the review of the Performance Appraisal Reports? List the major decisions.

The college performance appraisal system consists of the following components:

- Self-appraisal: The faculty submits self-appraisal report at the end of every academic year.
- Student feedback on teaching: Every semester the students give feedback about their course teachers.
- Staff Appraisal by the Head of the Department: At the end of every academic year, report of the contributions of the staff members in college activities and their performance is reported by the Head of the Department.
- The outcome of the review of the Performance Appraisal Reports:
 - The self-appraisal report and the student feedback are analyzed by the HoD. Based on the student feedback, the HoD gives suggestions for improvement in teaching, if required. The self-appraisal helps to improve an individual's performance and his/her contribution to the institutional activities.
 - Staff Appraisal by the Head of the Department is reviewed by the Director and HRD committee. Staff members' performance is discussed and opportunities are created to improve the same.
- Some of the major decisions on the basis of Performance Appraisal Reports are as follows:
 - To motivate and guide faculty members for quality publications, senior retired professors from IIT and IISc are appointed as Chair professors.

- Given the difficulty faced by the faculty members in pursuing Ph.D. programs along with their teaching responsibilities, it is decided to approve two years paid study leave to pursue Ph.D.
- It is decided to provide incentives for quality publications and funded research in order to motivate faculty members for quality publications and research projects.

6.3.3 What are the welfare schemes available for teaching and non-teaching staff? What percentage of staff have availed the benefit of such schemes in the last four years?

- **Employees Provident fund:** As per the government rules maximum of Rs. 1800 is credited to employees PF account by MKSSS and the equal amount is contributed by the employee. 8.33% of MKSSS's contribution of PF goes to PF pension scheme and remaining in employees PF. All eligible staff members have availed benefit of the scheme.
- **MKSSS contributes** for Employees Deposit Linked Insurance Scheme applicable in case of unfortunate death during service. All staff members are part of the scheme.
- **Gratuity** is payable to the employees after 5 years of permanent service. All staff members are eligible for this benefit.
- **Group Insurance:** In case of an unfortunate incidence staff members get insurance benefit. All permanent staff members are part of the scheme.
- **Maternity leave:** 180 days of maternity leave is applicable with full pay.
- **Medical Health Centre facility** is available for all the staff members.
- **Fee concession:** Wards of non-teaching staff members studying in any institute under MKSSS get 10 % fee concession.
- **Mediclaim Facility:** Staff members can avail services of selected hospitals in case of medical emergencies costing up to rupees One lakh without any payment.

6.3.4 What are the measures taken by the College for attracting and retaining eminent faculty?

There is very good faculty retention ratio (99%) due to good working environment, fair policies, and development opportunities. Work culture has attracted Eminent faculty members.

College has Instituted Chair professor positions. Distinguished professors are holding these positions. College also invites eminent faculty members as adjunct professor.

6.3.5 Has the College conducted a gender audit during the last four years? If yes, mention a few salient findings.

- The college is all girls' college. The institute imparts quality education to develop women leaders and professionals academically & technically competent with strong professional ethics.
- The Pune University and State government norms are followed in recruitments.
- The Teaching and Non-Teaching faculty have majority in women employees.

6.3.6 Does the College conduct any gender sensitization programs for its staff?

- College conducts awareness sessions with the help of police department for the safety and security of students and women staff.
- Cyber security awareness programs related to the safety and security of women employees and students are also conducted.
- Health awareness programs on the issues specifically related to women are organized for staff and students.
- For any assistance required, qualified female psychological counsellor is available.
- Awareness programs about 'Vishakha' guidelines are conducted.

6.3.7 What is the impact of the University's UGC-Academic Staff College Programmes in enhancing competencies of the College faculty?

Librarian has attended program conducted by academic staff college. Non-teaching staff members have also attended orientation programs organized by UGC-Academic Staff College. These programmes have helped in enhancing competencies of the college staff.

6.4 Financial Management and Resource Mobilization:

6.4.1 What is the institutional mechanism to monitor effective and efficient use of financial resources?

The mechanisms used to monitor effective and efficient use of financial resources are as below:

- Before the financial year begins, Director, Heads of Departments prepare college budget. College budget includes recurring expenses such as salary, electricity and internet charges, equipment and facilities maintenance cost, stationery and other consumable etc. It includes planned expenses such as lab equipment purchases, furniture and other

development expenses. Budget is scrutinized and approved by LMC and Governing Council.

- Accounts department and Purchase department monitor whether expenses are exceeding budget provision.
- There is a separate Internal Audit department of MKSSS which monitors the utilization of finances. There are seven members in the internal audit team.
- Statutory auditors are also appointed who certify the financial statements in every financial year.
- The grants received by the college are also audited by certified auditors for their utilization.

6.4.2 Does the College have a mechanism for internal and external audit? Give details.

The College has a mechanism for internal and external audit. The details are as given below:

- Internal Audit :
 - MKSSS has appointed internal auditors. Quarterly audits are carried out by internal auditor team.
 - Auditor's report is presented to director and secretary of MKSSS.
- External Audit:
 - An external auditor is appointed by the college which performs an audit of the financial statements of the college.
 - The financial records of the College are audited after the end of each fiscal year and are certified.

6.4.3 Provide audited income and expenditure statement of academic and administrative activities of the previous four years.

The audited income and expenditure statement of academic and administrative activities of the previous four financial years from 2012-13 to 2015-16 is attached as Annexure – 6.

6.4.4 Have the accounts been audited regularly? What are the major audit objections and how are they complied with?

Yes the accounts are audited regularly, every year. There are no major audit objections raised by statutory auditors.

6.4.5 Narrate the efforts taken by the College for resource mobilization.

- The college is self-financed and primary source of income is tuition fees received from the students. Fee regulating authority of State government approves the tuition fees.

- Cummins India funds some of the development activities of the college.
 - College receives grants from external agencies such as AICTE, DST, University for research, seminars, workshops, travel grants, lab development etc.
 - College also gets Financial sponsorship from industries for co-curricular and extra-curricular activities of the students.

6.4.6 Is there any provision for the College to maintain the ‘corpus fund’? If yes, give details.

Yes, there is a provision for the College to maintain the ‘corpus fund’. The corpus fund is maintained by the MKSSS. Funds are made available whenever required.

6.5 Internal Quality Assurance System:

6.5.1 Does the college conduct an academic audit of its departments? If yes, give details.

At the institute level, academic audit is conducted every year. Institute level criteria for the academic audit assessment are decided by the Director and all the Heads of the Departments. Internal academic auditors are faculty from various departments of the college.

Under academic audit the points assessed are:

- Quality of Teaching / Learning Processes
- Co-curricular activities
- Student performance in In-SEM and End-SEM examinations
- Placements
- Faculty contributions in research
- Quality of question papers
- Attainment of course outcomes

Heads of the departments take necessary corrective actions as per the assessment.

6.5.2 Based on the recommendations of the academic audit, what specific measures have been taken by the College to improve teaching, learning and evaluation?

Based on recommendations, specific measures taken are as follows:

- **Teaching and Learning:**
 - Classroom sessions are made more interactive involving group discussions.
 - Courses are designed using world-class master texts.
 - Teaching is made more ‘conceptual knowledge’ oriented.
 - Tutorial and Laboratory contact hours are increased.

- **Evaluation:**

- In question papers inclusion of questions testing higher levels of cognition such as apply, analyse, evaluate and create as per the revised Bloom's taxonomy
- Implementation of innovative methods such as crossword, quizzes, poster making, etc. for evaluation of students
- Provision of supplementary examination along with supportive classroom sessions to be conducted in the summer break to give additional opportunity for the weak students to clear the courses

6.5.3 Is there a central body within the College to continuously review the teaching learning process? Give details of its structure, methodologies of operations and outcome?

A central body consisting of the Director, Deans and Heads of the Departments exists within the college to continuously review the teaching learning process.

Methodologies of Operation and Outcome:

- The college collects students' feedback on teaching-learning process for all courses every semester. Regular students and faculty-mentor meetings are conducted. In these meetings informal feedback on teaching-learning process is received. Both these feedbacks are reviewed by the central body and suggestions for improvement are conveyed to the concerned faculty members, if required.
- The central body also reviews the performance of students in the In-SEM and End-SEM examinations. If required, the central body recommends the conduction of additional lectures and laboratory practice sessions.

6.5.4 How has IQAC contributed to institutionalizing quality assurance strategies and processes?

The Internal Quality Assurance Cell of the college has contributed to institutionalizing quality assurance strategies and processes in the following manner:

- It provided guidelines for framing question papers by taking into account the cognitive structure provided by the revised Bloom's taxonomy (RBT).
- The cell has been instrumental in defining the perspective plan of the college.
- It has come up with quality guidelines for – conduction of laboratory sessions, designing and reviewing course contents by considering the 'Knowledge' dimension of RBT etc.
- IQAC has been instrumental in revising the feedback questionnaire on teaching.

6.5.5 Does the IQAC have external members on its committees? If so, mention any significant contribution made by such members.

The external members of IQAC are experts from industry, society and alumnae. These members are contributing by giving valuable suggestions such as:

- To reduce gap between classroom teaching and industry.
- To encourage interactive learning.
- To enhance Industry-Institute Interaction.
- To strengthen entrepreneurship development activities.

6.5.6 Has the IQAC conducted any study on the incremental academic growth of students from disadvantaged sections of society?

The IQAC of the college has conducted study on the incremental academic growth of all the students on the basis of their performance in examinations and performance in aptitude test conducted by 'Aspiring Minds'. However, it has not conducted any study of students from any specifically disadvantaged sections of society.

6.5.7 What policies are in place for the periodic review of administrative and academic departments, subject areas, research centres, etc.?

- Weekly meetings of the Director, Deans and the Heads of the departments are conducted to review the working of the administrative and academic departments of the college.
- Monthly departmental meetings by the Heads are conducted to review the progress and performance of the department.
- Subject in-charges conduct periodic meetings with the subject teachers to review teaching-learning processes.
- The Director and the Dean, Research and Development conduct meetings to review on-going research.

Criterion VII INNOVATIONS AND BEST PRACTICES

7.1 Environment Consciousness:

7.1.1 Does the college conduct Green Audit of its campus?

To maintain green campus, audit is conducted regularly. It covers solid waste and recycling, electricity and natural gas use, water and waste water treatment, emission and air quality, food services, initiatives to make campus eco-friendly.

7.1.2 What are the initiatives taken by the college to make the campus eco-friendly?

College has taken a lot of positive measures to maintain the campus eco-friendly. Some of the initiatives in this direction are as follows:

Energy Conservation:

- Notices regarding switching off fans, tubes and electrical appliances when not in use are placed throughout the campus to avoid wastage of energy.
- The architecture of the college buildings is such that maximum advantage of day light can be taken.
- CPCB approved diesel generators are used in the institute.
- Air Conditioning systems on campus use environment friendly refrigerants.
- There is a course “Energy Audit and Management” for final year students of Mechanical Branch. As a part of that course, students carry out energy audit of the Mechanical Building.
- Planeteers’ club has placed posters near elevators explaining benefits of taking stairs instead of elevators.

Use of renewable energy:

- Solar water heaters have been fitted in all the hostels and guest houses. The capacity of solar water heater system is 18 kW with total number of panels 48. Around 3000 litre of hot water is daily made available through the system.
- Biogas plant has been installed in campus which utilizes around 160 kg of food waste from hostels. The capacity of this plant is 20 m³. Biogas thus generated is used for cooking in hostels.

Water harvesting:

- On campus three plants of water harvesting are in operation. Each plant can recycle around 3000 litre of water daily. In Monsoon season, plant can accommodate 1,40,000 litre of rain water.

Check Dam Construction:

- The NSS unit of the college has constructed check dam in kalyan village.

Efforts for Carbon neutrality:

- Use of Bio sanitizer technology for garbage composting in campus– Oxygen rich water, treated with bio sanitizer is sprayed on garbage heap to ensure eco-friendly bio-conversion in to compost. In this process, there is no heat generation and minimal emission of greenhouse gases. The capacity of this plant is 6 ton per six month.
- Dry leaves and waste papers are not allowed to be put on fire in campus.
- The college campus consists of a good number of trees. This helps to achieve carbon neutrality.

Plantation:

- In the college campus around 2000 trees have already been planted and are being maintained.
- To create awareness on the importance of tree plantation, every year the college conducts plantation activity with the help of students.
- In addition to this, the NSS unit of the college carries out tree plantation in Kalyan village.

Hazardous waste management:

- Hazardous waste from the workshop and the chemistry lab is disposed with due precautions.

E-waste management:

- Bins are set up in college campus to collect e-waste. This helps to create awareness on e-waste among students.
- E-waste is collected and given to authorized agency (SWaCH) for dismantling and recycling as per NPCB norms.

Any Other:

1. Environmental Quality:
 - A course entitled “Environmental Studies” is introduced in the F.Y. B. Tech curriculum to create awareness about NEP (National Environmental Policy), Carbon Foot print Verification (ISO 14064), Environmental management (ISO 14001), Environmental impact assessment, Green building etc.
 - There is a separate estate maintenance department to look after green environment in the campus. With proper landscaping and well maintained lawns campus looks green.

- Through NSS unit and ‘EcoRangers’ club, PUC certification drive is organized from time to time.
- The college promotes paperless academic and administrative functioning. Some of the examples are –
 - i. Online attendance record maintenance
 - ii. Students’ submissions in CD format
 - iii. Online display of examination results
 - iv. Online voting (e-ballots) for college election
 - v. Online Students’ feedback for teaching-learning process
 - vi. Circulation of notices via e-mail
 - vii. Department newsletter in electronic form
- To create/generate environmental quality awareness, various activities are organized like guest lecturers of eminent speakers, poster exhibitions; the list of some of the activities is as follows.

Sr. No.	Date	Title/ activity
1	July 2014	Mutha river cleaning
2	Feb 16	Plastic Kachra Drive
3	Aug 2016	Lecture on ‘Plastic waste management’ by Mr. Vinod Bodhankar from ‘Sagar Mitra Abhiyan’
4	Jan 2017	Lecture on ‘Plastic waste management’ by Mrs. Amita Deshpande from ‘Aarohana’
5	Feb 2017	Poster exhibition on Environmental Issues

- Students are encouraged to participate in competitions related to renewable energy usage, green campus etc. Our college students have secured third position in “Green campus Clean Campus” presentation competition organized by Kirloskar Vasundhara Film Festival, Pune on January 23, 2015. Students also participated in “My Pune Smart Pune” competition organized by Kirloskar Vasundhara Film Festival, Pune on January 12, 2016.
2. Water Conservation:
 - Drip irrigation and sprinklers are used on campus.
 - Low flush toilets are used in college buildings.
 - Waste water utilization is done for garden trees.
 3. Waste Disposal:
 - Biodegradable and non-biodegradable waste is segregated and bio degradable waste is used for compost.

7.2 Innovations:

7.2.1 Provide details of innovations introduced during last four years which have created a positive impact on the functioning of the college.

1. Nurturing innovation among students:

“Innovation” is one of the most important objectives of engineering education. By keeping this in mind, the institute has started a program entitled “Innovative Minds” for all the Second Year Students. The program comprises of five sessions of two hours each. These sessions are designed to enhance abilities and skills such as Observation, Analysis, Application and Questioning. These sessions are conducted using active learning techniques such as games, puzzles, videos, songs etc.

2. Industry engagement in all-round development of Institute:

College has close engagement with Cummins India Ltd. (CIL), leading industry, for the development of infrastructure, students and faculty members.

- Infrastructure development – Cummins College has developed laboratories for student projects and research with financial and technical help from CIL.
- Student Development – College has taken many initiatives for student development with financial sponsorship and active participation from CIL. The details are as follows:
 - “Innovation, Career Building and Employability Enhancement Program”: For all third year students a 45-hour value addition program is conducted by ‘MoebiusSutra’ consultancy.
 - “AMCAT Test”: Aspiring Minds conducts aptitude test of engineering students across nation. This test helps to know suitability of the students for the engineering profession. Since year 2015, college has been conducting this test for all second and third year students.
 - Participation in National Level Competitions and Student Activities
 - Cummins Fellowship Program: Every year four students are selected for MS program of Purdue University. The students get Cummins fellowship, which covers all the expenses.
- Faculty Development –
 - CIL offers sabbaticals for the faculty members of the college.
 - Faculty members can avail two years of fully paid study leave for pursuing Ph. D. program. 50 % expenses are sponsored by CIL.

3. ERP System:

Institute has successfully developed ERP system with the help of external agency for improving efficiency and productivity of academic and administrative processes. This ERP system has various modules such as

- Student and Faculty master- These are used to maintain student and faculty databases.
- Paper Master- It has modules which are used for recoding attendance, conduction of examinations, result analysis etc.

4. Use of Communication Technology for interaction between faculty and students beyond classroom:

- Every faculty member and student has been assigned an email-id, which are grouped with the domain name @cumminscollege.in. Assignments, journal write-ups, circulars are communicated to the students through email groups.
- Some of the faculty members have created their webpages for communications with students.
- Social learning platforms are being used for student-faculty interaction.

5. Most active student borrower award:

To encourage students to read more books, the library has instituted 'Most active student borrower award. The students who borrow maximum books receive this award. These students get two books in addition to their regular quota.

7.3 Best Practices

7.3.1 Give details of any two best practices which have contributed to better academic and administrative functioning of the College.

Best Practice 1:

- **Title: "Innovation, Employability Skills Enhancement and Career Building Program"- an initiative under Cummins Signature Project**
- **Objective:**
The objective of this practice is to provide training to third year students of all branches to enhance employability skills, innovation ability. The program also aims to help students in overall career development.

- **The Context:**

After graduation, when students enter the engineering profession, in addition to domain knowledge, other skills and abilities such as communication skills, leadership, innovation, team building are very much required to become successful in the profession, which are not directly covered in the curriculum. To address this need a unique certificate course on Innovation, Employability Skills Enhancement and Career Building is designed which focuses on Self Awareness, Professional Skills, Innovation and Communications.

- **The Practice:**

The 40-hour course was introduced from academic year 2013-14 for third year students for all the branches of engineering. Students are divided in five batches. In a week, each batch attends one session of two hours duration. Total 20 sessions are planned throughout the academic year for all batches. These sessions include as follows

1. Icebreakers, Introductions, MOOCs, Opportunities Abroad
2. Mind map- Theory, Individual Mind map, Group Mind map
3. DBDA and psychometric Test Administered
4. Creativity Workshop
5. DBDA and Psychometric Result Discussion
6. Video Analysis and English Language Tips
7. Transactional Analysis (TA) and Presentation Skills
8. Corporate Grooming +Business Ethics
9. Project Selection and SWAF Analysis (JW Skipped since it was done in 2nd year)
10. Team Building Games
11. Effective Resume Writing Theory
12. Profile building, Innovation(IP) and feedback (Resume Book Distributed)
13. Review and Interview Theory
14. 6 Thinking Hats workshop
15. HR and Technical Round 1 (with External Evaluators)
16. HR and Technical Round 2 (with Industry experts)
17. HR and Technical Round 3 (with industry experts)
18. Aptitude Test Prep Tips and Aptitude Test delivery
19. GD theory and GD Round
20. Conclusions, SOP Tips and Feedback

At the end of the training Program, every student gets course completion certificate.

- **Evidence of Success:**

Assessment of the students is carried out at the end to understand the impact of the program which is conveyed to the students individually. Following generalized statements can be drawn on the basis of students' feedback.

- The course is observed to help students improve their skills such as individual report writing, creative and strategic thinking etc.
- There is a noticeable positive change in the overall personality of the students who have completed this course.
- As a direct consequence of the innovation aspect of the program, 15 students have filed patents till date. This is a key differentiator, giving the students an upper edge as they embark on their search for careers in the industry or pursue higher education in India or overseas.
- Mock interviews and group discussion sessions conducted under this program have resulted into positive feedback from the companies visiting the campus.

- **Problems encountered and resources required:**

This program is sponsored by CIL, under its Signature project initiative and hence offered to the students without charging fees.

This program needs to be planned beyond the students' regular academic engagements. Hence, it becomes challenging to identify free time-slots for large groups of students.

A separate faculty coordinator had to be assigned for the smooth conduction of the program.

The college has made an auditorium available for all the sessions and to all the batches.

Best Practice 2:

- **Title: Faculty Development Schemes**

- **Objective:**

The objective of the practice is to motivate the faculty members to do research, organize and attend conferences, workshops, seminars and symposiatio get to know emerging technology trends and also to update their domain knowledge.

- **The Context:**

For effective teaching as well as research engagements, faculty members are expected to have holistic idea of their area of specialization. To accomplish this, they require exposure to various inter-faculty interactions taking place via conferences, workshops, seminars, symposia etc. This situation is addressed by introducing various faculty development schemes.

- **The Practice:**

Research and Development Committee of the institution promotes and facilitates research undertakings of the faculty members. The faculty members are sponsored by the institute to attend the national / international conferences. To encourage quality research work by faculty members, various monetary incentives are in place. If the paper gets published in Scopus indexed journals, faculty gets reward of Rs.5000/-. If the faculty member receives grant from funding agencies, then 5% of the grant amount is rewarded to the faculty member by the institute. Faculty members pursuing Ph. D. programs are provided with two years of fully paid study leave from the institute.

- **Evidence of Success:**

- Enhancement in the number of faculty members registering for Ph.D. programs
- Enhancement in the number of quality publications by faculty members
- Increase in the number of workshops, seminars attended by the faculty members
- Increase in the number of faculty members implementing best pedagogic practices

- **Problems encountered and resources required:**

Workload of the faculty members availing Ph. D. study leave is required to be allocated to faculty members on contract basis. Fund allocation is required for supporting research activities and Ph. D. programs.

Best Practice 3:

- **Title of the Practice: Financial assistance schemes for students**
- **Objective of the Practice:**
The aim of this practice is to provide the financial support to the meritorious and the needy students.
- **The Context:**
The students admitted to the college are from different backgrounds. Students, not capable of paying tuition and other fees due to their financial conditions are required to be supported for continuing their higher education. In view of this, the college and its parent organization have instituted various scholarships for such students.
- **The Practice:**
At the beginning of every academic year, students apply for financial assistance. At the time of application, they need to submit their academic progress report as well as proof of their family income. Based on the submitted documents, students are shortlisted for interview. A committee appointed by the college conducts interviews of these students and a list of students eligible for financial assistance is displayed.
- **Evidence of Success:**
Following table shows the data of the number of students benefitted through the financial assistance schemes:

Academic Year	No. of students	Amount (Rs)
2012-13	30	4,30,000
2013-14	42	5,00,000
2014-15	56	6,03,715
2015-16	60	7,00,000

- **Problem Encountered and Resources Required:**

Additional human resources are required to implement the scheme. Fund allocation is required for supporting meritorious and needy students.

Evaluative Report of the Departments

Evaluative Report Department of Computer Engineering

1. Name of the Department & its year of establishment:

Department of Computer Engineering was established in the year 1991.

2. Names of Programmes / Courses offered: (UG, PG, M.Phil., Ph.D., Integrated Masters; Integrated Ph.D., etc.)

The program currently offered is Bachelor of Technology (B. Tech.) in Computer Engineering.

3. Interdisciplinary courses and departments involved:

Sr. No.	Name of the subject	Department Involved
1.	Basic Electrical and Electronics Engineering (I and II)	Other engineering departments
2.	Basic Mechanical Engineering	
3.	Environmental Studies	
4.	Engineering Mechanics	
5.	Engineering Graphics	

Second year onwards interdisciplinary courses on humanities and management are offered. Students can also opt for interdisciplinary courses under open elective course category offered by other departments.

4. Annual/ semester/choice based credit system:

The department follows semester based credit system.

5. Participation of the department in the courses offered by other departments

Sr. No.	Name of the subject	Course offered by
1.	Design and Analysis of Algorithms (PG)	Department of Electronics and Telecommunication Engineering
2.	Automotive Electronics	

6. Number of teaching posts sanctioned and filled (Professors/Associate Professors/ Asst. Professors)

Numbers of teaching posts sanctioned and filled are as follows:

	Sanctioned	Filled
Professors	4	03
Associate Professors	9	NIL

Asst. Professors	28	29
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7. Faculty profile with name, qualification, designation, specialization, (D.Sc./D.Litt. /Ph.D. / M. Phil. etc.,)

Name	Qualification	Designation	Specialization	Nos of years of Experience	No. of Ph.D students guided for last 4 years
Dr. Supriya M. Kelkar	Ph.D.	Professor (HOD Comp Department)	Embedded Systems, Distributed Systems, Automotive Networks	Teaching: 20 Years Industry: 3 Year	NIL
Dr. Sunita A. Jahirabadkar	Ph.D.	Professor Dean (R&D) Professor (Comp Dept)	Databases, Artificial Intelligence	Teaching: 17 Years Industry: 3 Years	NIL
Dr. Sandhya Arora	Ph.D.	Professor	Soft Computing, Online Learning, Intelligent Tutoring System, Pattern Recognition, Image processing	Teaching: 19 years	NIL
Ms. Shilpa S. Deshpande	M.E. (Computer Engg.) Pursuing Phd.	Assistant Professor	Distributed Systems	Teaching: 17 Years	-
Mr. A. N. Muchrikar	M. Tech. (Computer)	Assistant Professor	Software Engineering, Software architecture, Distributed Systems, Databases, Cloud computing	Teaching: 25 Years Industry: 4.5 Year	-
Mrs. Shubhangi V. Tikhe	M.E. (Control System) Pursuing Ph.D.	Assistant Professor	Signal processing, Computer networks	Teaching: 30 Years Industry: 1 Year	-
Mrs. Chhaya S. Gosavi	M.E. (Computer Engg) Pursuing Ph.D.	Assistant Professor	Multimedia, Compilers	Teaching: 15 Years	-
Mr. Hitendra. S. Khairnar	M.E. (Computer Engineering) Pursuing Ph.D.	Assistant Professor	Algorithms, Machine Learning	Teaching: 17 Years	-
Mrs. Anjali M. Naik	M.E.(Assistant	Artificial Intelligence,	Teaching: 21	-

	Electronics – Computers) Pursuing Ph.D.	Professor	Medical Image processing	Years	
Mr. Saurabh P. Mengale	B.E. Computer Engg.	Assistant Professor	Computer Networks, Security, High Performance Computing	Teaching: 17 Years Industrial: 3 Year	-
Mrs. Rakhi A. Dongaonkar	M. E. (CSE-IT)	Assistant Professor	Data Bases, Object Oriented Programming	Teaching: 16 Years	-
Mrs. Madhuri P. Tasgaonkar	M.E. (E & T C) Pursuing Ph.D.	Assistant Professor	Biomedical Engineering, Image Analysis, Pattern Classification	Teaching: 19 Years	-
Mrs. Aparna U. Hajare	M.E. (Computer Network)	Assistant Professor	Computer Networks, Theory of computations, Operating systems	Teaching: 12 Years	-
Mrs. Rajashri K. Kulkarni	M.E. (Computer Engg.)	Assistant Professor	Computer Graphics, Data Structures	Teaching: 11 Years	-
Mrs. Neeta P. Maitre	M.E. (Computer Engg.) Pursuing Ph.D.	Assistant Professor	Databases, Bioinformatics, Management	Teaching: 14 Years	-
Mrs. Meenal A. Kamlakar	M.E. (Computer Engg.)	Assistant Professor	Soft skills, software Engineering, multimedia, Computer Networks	Teaching: 10.5 Years Industrial: 7 Months	-
Mrs. Nutan H. Deshmukh	M.E. (Computer Engg.)	Assistant Professor	Software Engineering, Microprocessors & Micro controllers, Embedded systems	Teaching: 11 Years	-
Ms. Sakshi S. Mandke	M.E. (Computer Engg.)	Assistant Professor	Data Structures, Programming & Problem solving, Graph mining, High Performance Computing	Teaching: 9.5 Years	-
Mrs. Pranjali A. Deshpande	M.E. (Computer Engg.)	Assistant Professor	Natural Language Processing, Advance Computer Architecture, High performance computing, Digital electronics and Logic design	Teaching: 11 Years	-
Mrs Varsha S. Pimprale	M.E. (Computer Engg.)	Assistant Professor	Operating systems, Data structures, Computer Networks	Teaching: 9.5 Years	-
Mrs. Shilpa P. Pant	M.E.	Assistant	Computer Organization,	Teaching: 8	-

	(Computer Engg.)	Professor	Digital Electronics & Logic Design	Years	
Mrs. Shital S. Barekar	M.E. (Electronics) Pursuing Ph.D.	Assistant Professor	VLSI, Embedded Systems	Teaching: 13 Years Industry: 1 year	-
Mr. Prakash. G. Date	M.E. (Computer Technology)	Assistant Professor	Computer Organization, Data structures	Teaching: 7.4 Years	-
Mrs. Sushila S. Shelke	M.E. (Computer Engg.) Pursuing Ph.D.	Assistant Professor	Databases, Programming languages, Sequential pattern mining	Teaching: 7 years Industry : 2 years	-
Mrs. Swati Shirsath	B.E. (Computer Engg.)	Assistant Professor	Programming, Computer Networks	Teaching: 6 Years	-
Mrs. Vaishali M. Salgar	M.E. (Computer Engg.)	Assistant Professor	Image Processing, Digital signal processing, Computer Graphics, Operating systems, Programming Languages	Teaching : 5.6 years	-
Mrs. Nilofer Munir Attar	M. Tech. (Comp /IT)	Assistant Professor	OOMD, Computer Architecture, S/W Engg, Operating Systems, Databases, Software testing	Teaching: 6.5 Years	-
Mrs. Rita Sahebrao Shelke	M. Tech. (Computer), Pursuing Ph.D.	Assistant Professor	Data base Management systems, Computer networks, Data Communication and Wireless Sensor Networks	Teaching: 10 Years Industry: 1 Year	-
Mr. Deore Mahendra P.	M.Tech (IT) Pursuing Ph.D.	Assistant Professor	Computer Networks, Operating System, Cyber Forensics	Teaching: 9 Years	-
Ms. Gitanjali Salunkhe	M.Tech (CSE) Pursuing Ph.D.	Assistant Professor	HPC, Data Mining, Data structures	Teaching: 4.5 Years	-
Mrs. Soudamini Randhir Patil	M.E. (Computer Sc. & Engineering)	Assistant Professor	Computer Forensics, Software Engineering, Professional Skills, Project Management	Teaching: 4.5 Years Industry : 10.5 Years	-
Mrs. Jyoti Bhangare	M. E. (Computer Engineering)	Assistant Professor	Software Engineering, Green Computing , Project Management	Teaching: 5.8 Years	-

8. Percentage of classes taken by temporary faculty – programme-wise information.

The percentage of classes taken by temporary faculty is 18.17% in semester 1 and 0% in semester 2 in academic year 2016 – 17.

9. Programme-wise Student Teacher Ratio – 17:1

10. Number of academic support staff (technical) and administrative staff: sanctioned and filled

The technical support and administrative staff is filled by parent institute (samstha) and it is as following.

Description	Sanctioned	Filled
Technical Support Staff	14	14
Administrative Staff	10	10

11. Number of faculty with ongoing projects from a) national b) international funding agencies and c) Total grants received. Mention names of funding agencies and grants received project-wise. – NIL

12. Departmental projects funded by DST-FIST; DBT, ICSSR, etc.; total grants received – NIL

13. Research facility / centre with

- state recognition
- national recognition
- international recognition

The department provides good research equipment to students and faculty members. The UG students for their final year projects use latest computing systems and work on the latest trends like cloud computing, embedded systems, IoT, etc. Many of the projects are supported by industry.

14. Publications:

- Number of papers published in peer reviewed journals (national/International) – 52
- Monographs – NIL
- Chapter(s) in Books –

Sr. no.	Author Name	Subject	Publication	Published details	Year
1	Mrs. Supriya M. Kelkar	Embedded Systems Architecture, Programming and Design	Tata McGraw Hill	ISBN-10: 0-07-066764-0 ISBN-13: 978-0-07-066764-8	13- Reprint 2012

2	Mrs. Chhaya S. Gosavi	Advances in Computer vision and information security.	I.K. International Publication	ISBN: 978-81-89866-74.	2007
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- **Editing Books – NIL**

- **Books with ISBN numbers with details of publishers –**

Sr. no.	Author Name	Subject	Publication	Published details	Year
1.	Mrs. Sunita A. Jahirabadkar	Big data Analytics	Co-Author for book BIG DATA Analytics	ISBN: 978-81-203-5116-5	June 2016
2.	Mrs. Jyoti Bangare (Chinchole)	Advanced Database Management	Nirali Publication	ISBN:978-93-82448-38-9	October 2012
3.	Mrs. Sunita A. Jahirabadkar	E-business	Oxford University Press	ISBN-10: 0198069847 ISBN-13: 9780198069843	May 2012
4.	Mrs. Supriya M. Kelkar	Embedded Systems Architecture, Programming and Design	Tata McGraw Hill	ISBN-10: 0-07-066764-0 ISBN-13: 978-0-07-066764-8 (Reviewer) (One chapter is included in this book)	13- Reprint 2012
5.	Mrs. Chhaya S. Gosavi	Advances in Computer vision and information security.	I.K. International Publication	ISBN: 978-81-89866-74. (One chapter is included in this book)	2007

- **Number listed in International Database (For e.g. Web of Science, Scopus, Humanities International Complete, Dare Database -**

International Social Sciences Directory, EBSCO host, etc.) – 29

• **Publication Indexes -**

	Category	Range	Average
•	Citation Index	1 – 9	2
•	SNIP	0.174 – 4.835	1.618
•	SJR	0.157 – 3.301	0.7279
•	Impact factor	0.039 – 7.329	1.5209
•	h-index	5 – 169	43.41

15. Details of patents and income generated

Currently three faculty members have filed the patents.

Sr. No.	Name of the Applicant	Patent / Copyright	Year of Application	Filed /Sanctioned
1.	Dr. Mrs. Supriya Kelkar	SYSTEM AND METHOD FOR FINDING FAULTY NODES IN A DISTRIBUTED NETWORK	2016	Provisionally Filed – APP.NO:TEMP/E-1/39151/2016-MUM
2.	Mrs. Chhaya Gosavi	SYSTEM FOR PIRACY DETECTION AND METHOD THEREFOR	2015	Filed – File No: 331/MUM/2012
3.	Mrs. Pranjali Deshpande	SYSTEM AND METHOD FOR PROVIDING MUSICAL NOTATIONS	2013	Filed – File No: 3693/MUM/2012

16. Areas of consultancy and income generated

The department is currently in the process of exploring consultancy opportunities.

17. Faculty recharging strategies

- The faculty is encouraged to attend FDPs/ STTPs / Seminars / Workshops / Conferences on upcoming trends and areas.
- The faculty members are given up to Rs. 50,000/- for registration and travel expenses for presenting a conference paper.
- Faculty members are given full paid leave for doctoral work as well as sabbaticals.
- The faculty is encouraged to publish research papers in peer reviewed, indexed journals and conferences. As per the institute strategies the faculty is given incentive of Rs. 5,000/- for Scopus indexed and Rs. 10,000/- for SCI indexed journal paper.

On an average 20 – 25 faculty members attend these activities every year.

18. Student projects

- **Percentage of students who have done in-house projects including inter-departmental** - 29% (in the last five years)
- **Percentage of students doing projects in collaboration with industries / institutes** - 71% (in the last five years)

19. Awards / recognitions received at the national and international level by

- **Faculty** – Following faculty has brought accolades to the department in various activities at National level.

Sr. No.	Name of the Faculty	Description
1.	Mrs. Vaishali Salgar	Longest Continuous SBC award at CSI National Convention, Coimbatore for year 2015 – 16.
2.	Mr.Mahendra Deore	Selected as Top Performer of the programme (Top 383 out of 4051 participants) in four week FDP on Use of ICT Education for Online and Blended Learning at IIT Bombay.
3.	Mr. Ashutosh Muchrikar	Significant Contribution Award, CSI National Convention, Hyderabad for year 2013 – 14.
4.	Mrs. Aparna Hajare	Active Participation Women Member Award, CSI National Convention, Hyderabad for year 2013 – 14.
5.	Mrs. Madhuri Tasgaonkar	Active Participation Women Member Award, National Convention, Kolkata for year 2012 – 13.

- **Doctoral / post-doctoral fellows** – NIL
- **Students** – Many students participate in different competitions and good number of students have won the prizes at national and international level.

20. Seminars/ Conferences/Workshops organized and the source of funding (national /international) with details of outstanding participants, if any.

Sr. No.	Event Name	Participants	Funding Agency
1.	"Punarjjani"- A One Day Workshop for Special Children on 20 th September 2014.	Faculty members from Special Schools (for Mentally Challenged Children, etc.)	Persistent Systems Limited (PSL)
2.	CSI convention – e-Merge – various sessions were conducted on the topics like future trends, Linux, cloud and sentiment analysis in August 2012.	For intercollegiate Students	Computer Society of India (CSI) and Persistent Systems Limited (PSL)
3.	CSI – National Project Competition- Regional Round, 2012	For BE Students from West region, CSI	Computer Society of India (CSI)

21. Student profile course-wise:

B.Tech.in Computer Engineering	Applications Received*	Selected		Pass Percentage	
		Male**	Female	Male**	Female
Ad.Y. 2012 – 13	-	-	223	-	95.63

* The college follows Centralized Admission Procedure (CAP). Therefore, there is no data available with college about applications received.

**The college runs engineering program only for women students.

22. Diversity of Students

Name of the Course (refer question no. 2)	% of students from the college*	% of students from state	% of students from other states	% of students from other countries**
2016 – 17	-	96.73	3.26	-

* The institute runs Engineering programs. There is no junior college attached for the admission process. The admission process is done by Central Admission Procedure (CAP). As per the norms, 65% of the seats admitted are reserved for within state admissions and 35% of the seats are reserved for the students from other states of India.

**There is no provision for the admission of the students from other countries.

23. How many students have cleared Civil Services, Defense Services, NET, SLET, GATE and any other competitive examinations?

Many students appear for UPSC, MPSC, CAT and GMAT examinations. However, exact records for the same are not available with the department.

24. Student progression (avg. of last 4 years)

Student progression	Percentage against enrolled
UG to PG	13.60
PG to M.Phil.	NA
PG to Ph.D.	NA
Ph.D. to Post-Doctoral	NA
Employed	72.71
• Campus selection	
• Other than campus recruitment	Data not available
Entrepreneurs	Data not available

25. Diversity of staff

Percentage of faculty who are graduates	
Of the same parent university	44

From other universities within the state	47
From other universities from other states	9

26. Number of faculty who were awarded Ph.D., D.Sc. and D.Litt. during the assessment period.

Two faculty members were awarded Ph.D. during the assessment period.

27. Present details about infrastructural facilities

- a) **Library** – Departmental library has 164 titles and 190 books.
- b) **Internet facilities for staff and students** – All 379 computing systems in the department are connected to common facility with internet having 106 Mbps bandwidth.
- c) **Total number of class rooms** – There are 6 classrooms allotted to the department.
- d) **Class rooms with ICT facility** – All these classrooms are equipped with ICT facilities.
- e) **Students’ laboratories** – There are 10 student laboratories allotted to the department.
- f) **Research laboratories** – The department has a research laboratory.

28. Number of students of the department getting financial assistance from College – 17 students in year 2015 - 16

29. Was any need assessment exercise undertaken before the development of new program(s)? If so, give the methodology.

The department undertook need assessment exercise in designing the autonomous curriculum of the program.

30. Does the department obtain feedback from

- a. **Faculty on curriculum as well as teaching-learning-evaluation? If yes, how does the department utilize it?**
 - The faculty members as part of BOS and Academic Council provide the feedback in meetings as well as on e-mails.
 - The department uses this feedback to change the courses and their curriculum.
 - The institute has become autonomous recently, i.e. from the academic year 2016-17. The department has planned to collect faculty feedback on curriculum as well as teaching-learning-evaluation.
- b. **Students on staff, curriculum as well as teaching-learning-evaluation and what is the response of the department to the same?**
 - At the end of every semester, students give feedback of faculty members for their courses. This feedback is analyzed.
 - The Director and Head of Department discuss the feedback with each faculty member. Through this discussion, the strengths and areas of

improvement are conveyed to each faculty member.

- The Head of Department reviews areas of improvements and suggestions are given to the faculty members. Every faculty member has copy of his/ her feedback.
- The students give the feedback on curriculum and it is used to make modifications is required.

c. Alumni and employers on the programme and what is the response of the department to the same?

- The alumnae are members of Internal Quality Assurance Cell (IQAC), BOS, etc. In these meetings they share feedback on program. The college also collects informal feedback from alumnae at annual alumnae meet. These feedbacks are shared by the Department Head in the meetings with the Director and help in the development of department.

31. List the distinguished alumni of the department (maximum 10)

Following is list the distinguished alumnae of the department

1. Nandini De, Director of Engineering at Symantec
2. Payal Koul, Vice President , Invest India
3. Renuka Agrawal Gregg, Director, Data Analytics , Microsoft
4. Rajashree Varma, Founder - CEO - Arth Systems, CASO - PaperTracer, Co-Founder – RingARush
5. Rajashree Karwa, Co-Founder, Velvet Aroma
6. Bageshri Sathe, (Ph.D.), Compiler Software Engineer at NVIDIA
7. Neha Malude, Senior Copy Editor at HT City, Hindustan Times
8. Swapnali Doiphode (MPSC) Tahsildar, Govt. of Maharashtra
9. Nuzzat Sahaikh (Ph.D.), Professor and Head of the Department, Computer Engineering, MES College of Engineering.
10. Sudhakshina Girish, CTO – Wiksate, WIKSATE Solutions Pvt. Ltd.

32. Give details of student enrichment programme (special lectures / workshops / seminar) with external experts. – More than 40 lectures/workshops / seminars have been conducted in last four years for the students.

The glimpse of year 2016 – 17 is listed as follows:

List of student Enrichment Sessions for Academic Year 2016 – 17			
Sr.No	Name, Designation and Company of the external expert	Topic	Target Audience Students
1	Siddhesh Bhoobe, CEO, eMee , Center Head (Pune), Persistent	Session on "Problem Solving with Gamification"	BE Computer Students
2	Mr. Himanshu Warudkar, Director – India Digital Office Barclays Technology	Talk on “Banking 2.0”	TE Computer engineering students
3	Honorary Professor L. M Patnaik Dept. Of Electronic System	Talk on ”Trends in Advanced	BE Computer Students

	Engineering, IISC Bangalore	Computing”	
4	Dr. Abhijat Vichare, Consultant, Faculty at PCI (Persistent Computing Institute)	Session on OS fundamentals and Scheduling	TE Computer
5	Mr. Sanjay Panmand, Cyber Cell , Pune Police	Session on Cyber Security	TE Computer
6	DR. Sharad Saxena, Senior Analytical Training Consultant in SAS Global Mr. Manoj Singh, Senior Analytical Training Consultant in SAS Global	Session on Machine Learning	TE Computer
7	Dr. Yashodhara Haribhakta, Associate Professor, Department of Computer Engineering and IT, College of Engineering, Pune	Session on Contextual Text Mining and Natural Language Processing	BE Computer Engineering students
8	Mr.Purushottam Ekande (Computer Vision consultant)	Session on Speech Processing	BE Computer students
9	Ms. Deepti Charankar	Session on Data Management (BI)	BE Computer
10	Mr. Manoj Singh and Ms. Suchitra Chikhalkar	Session on Analytics (BI)	BE Computer
11	Mr. Unnikrishnan Menon	Session on Reporting (BI)	BE Computer
12	Ms. Deepti Charankar, Ms. Suchitra Chikhalkar, Mr. Unnikrishnan Menon	Session on Case Study (BI)	BE Computer
13	Qaidjohar Zueb Jawadwala, IT Consultant	Session on Computer Networks	TE Computer

33. List the teaching methods adopted by the faculty for different programme.

The department offers B. Tech. (UG) program in Computer Engineering. To make teaching learning process effective and interesting the faculty members in the department follow many methods. These are listed below.

1. The faculty members prepare presentations, list of reading material, web links as well as multimedia content if required.
2. The faculty members use methods like quizzes, tutorials, open book tests, group interactions, video content, etc. to improve understanding of the subjects.
3. The laboratory work plays significant role in development of an engineer. The faculty members use ICT, group and individual discussions for laboratory assignment.
4. The faculty members use various concepts such as zeroth assignment, programming workshops, use of debugging tools as some of the methods to develop programming skills.

34. How does the department ensure that programme objectives are

constantly met and learning outcomes monitored?

The department has programme objectives as - prepare students for professional competence, to develop students' fundamental knowledge, to enrich students with engineering skills as well as to prepare students capable of self-learning.

The programme objectives are constantly met through

1. Revision of structure, theory subjects and their syllabi is monitored to make them consistent with programme objectives.
2. Laboratory assignments are revised regularly.
The department applies knowledge dimension of revised Bloom's Taxonomy.
3. Tools and equipment for the laboratory courses revised or newly procured.
4. Faculty members are updated through FDPs, seminars and TEQIP programme.
5. The subject groups for theory courses and laboratory courses are formed.

The learning outcomes are monitored via process of evaluation.

1. The faculty members are made aware of the development of evaluation strategies.
2. The evaluation strategy is used in continuous evaluation, in semester as well as end semester examinations.
3. The strategies are defined as per the general quality guidelines and requirements of the college.

35. Highlight the participation of students and faculty in extension activities.

The department faculty and students participate in various activities such as campus cleaning, educating school children, plastic waste and waste management organization programs, blood donation, health check-up programs, tree plantation under NSS.

36. Give details of "beyond syllabus scholarly activities" of the department.

To develop research and professional attitude among students the department encourages and facilitates the students to participate in various co-curricular activities. The following is the list of activities:

- The students are made aware about IPR, Patents.
- The students are guided to write papers on projects and participate in project competitions.
- The students are motivated to attend various Workshops, Seminars and Professional body activities.
- The department organizes guest lectures, industrial tours to enhance the professional exposure of students.

37. State whether the programme/ department is accredited/ graded by other agencies. Give details.

- The college is accredited by National Assessment and Accreditation

Council (NAAC) in 2002 and 2012.

- The department is accredited by National Board of Accreditation (NBA) in 1998, 2002, 2006 and 2012.

38. Detail any five Strengths, Weaknesses, Opportunities and Challenges (SWOC) of the department.

Strengths:

1. Sincere and focused Women students.
2. Dedicated faculty members and good retention ratio.
3. Good placements from renowned companies.
4. Well equipped, well maintained laboratories with appropriate tools and resources for enhancing engineering skills.
5. The department has good culture, conducive for growth, good team work and decentralized processes.

Weaknesses:

1. Currently less number of faculty members with Ph.D. completed.
2. The contribution of faculty in research, funding and quality publications is less.
3. Currently, the collaboration with industry and universities from India and abroad is limited.
4. Consultancy activity is insignificant.

Opportunities:

1. Academic autonomy
2. To start post-graduation and research programmes.
3. Opportunity for enhancing the collaboration with industry and academia for projects, internships and research.
4. Opportunity of new pedagogical approaches in teaching-learning.

Challenges:

1. The department needs to maintain the pace with ever changing computer field.
2. Improving consultancy.
3. Bringing significant research funding from external national and international agencies.
4. A common challenge to engineering is our challenge too! Considering changes like less attention span of students and increasing availability of alternate resources to students, department foresees a challenge.

39. Future plans of the department.

- To start post graduate and research programme.
- To develop center of excellence with state of art research facility.
- To increase collaborations with industry and universities from abroad.
- To provide international exposure to the faculty.
- To increase the number of quality publications.
- To introduce active learning and to prepare faculty for the same.
- To create and use digital content.

- To encourage student internships.
- To develop faculty in leadership roles, technology and mentoring for research.
- To develop curriculum reflecting strong foundation, current trends and industry needs, problem solving skills and learning outcomes.

Evaluative Report Department of Electronics and Telecommunication

1. **Name of the Department and Year of establishment:** Electronics and Telecommunication Engineering (E&TC) is established in the year 1991.
2. **Names of Programmes / Courses offered: Department offers UG, PG and Ph. D. programmes.**
 UG: Bachelor of Technology E&TC), Bachelor of Engineering
 PG: Master of Technology E&TC (Signal Processing)
 Ph. D.: Electronics and Telecommunication Engineering
3. **Interdisciplinary programmes and departments involved:**
 At the first year level interdisciplinary courses such as Basic Mechanical Engineering, Engineering Graphics, Engineering Mechanics and Environmental Studies are offered in which the other engineering departments are involved. Second year onwards interdisciplinary courses on humanities and management are offered. Students can also opt for interdisciplinary courses under elective course category offered by other departments.
4. **Annual/Semester/Choice based credit system:** The UG and the PG programmes follow Semester based credit system.
5. **Participation of the department in the courses offered by other departments:**

Sr. No	UG / PG	Course	Department
1	UG	Basic of Electrical and Electronics Engineering [First Year Level]	All engineering departments
2	UG	Electrical and Electronics Engineering [Second Year Level]	Mechanical Engineering
3	UG	Automotive Electronics	Instrumentation and Control Engineering
4	PG	Research Methodologies	Instrumentation and Control Engineering

6. Number of teaching posts sanctioned, filled and actual (Professors/Associate Professors/ Asst. Professors)

Post	UG		PG	
	Sanctioned	Filled	Sanctioned	Filled
Professor	5	3	1	1
Associate Professor	9	3	1	1
Assistant Professor	26	38	1	0

7. Faculty profile with name, qualification, designation, area of specialization, (D.SC./D.Litt./Ph.D/M.Phil, etc.)

Sr. No	Name	Highest Qualification	Designation	Specialization	No. of years Experience	No. of Ph.D. students guided for last 4 years
1	Dr.M.B.Khambete	Ph. D	Director, Professor	Electronics & Telecommunication Engineering	24	3+2
2	Dr. Prachi Mukherji	Ph. D	Head, Professor	Electronics & Telecommunication Engineering	22	4+2
3	Dr. S.N.Ohatkar	Ph. D	Professor	Electronics & Telecommunication Engineering	20	--
4	Dr. P.V.S.Shastry	Ph. D	Associate Professor	Electronics & Telecommunication Engineering	25	--
5	Dr. Anita Jain	Ph. D	Associate Professor	Electronics & communication Engineering	16	--

6	Dr. Seema Rajput	Ph. D	Associate Professor	Electronics Engineering	14	--
7	Dr. Ashwini Deshpande	Ph. D	Associate Professor	Electronics Engineering	17.6	--
8	Dr. A.S.Patil	Ph. D	Assistant Professor	Electronics Engineering	26	--
9	Prof.N.G.Palan	M.E.	Assistant Professor	Electronics Engineering	22	--
10	Prof.M.S.Borse	M.E.	Assistant Professor	Digital Electronics	18	--
11	Dr. B.V.Pathak	Ph. D	Assistant Professor	Electronics Engineering	24	--
12	Prof. A.R.Khedkar	M. Tech.	Assistant Professor	E &TC Microwave Engineering	13	--
13	Dr. S.R.Chaudhary	Ph. D	Assistant Professor	Electronics & Telecommunicati on Engineering	16	--
14	Prof.S.L.Sahare	M. Tech.	Assistant Professor	Electronics Design Technology	13	--
15	Prof.M.S.Joshi	M.E.	Assistant Professor	Electronics , Digital System	24	--
16	Dr. M.A.Dixit	Ph. D	Assistant Professor	Electronics Engineering	15	--
17	Prof.P.P.Kamble	B.E.	Assistant Professor	Electronics Engineering	16	--
18	Prof. S. G. Dube	M. Tech.	Assistant Professor	Electronics & Telecommunicati on Engineering	14	--

19	Prof.N.D.Kulkarni	M. Tech.	Assistant Professor	Electronics & Telecommunication Engineering	11	--
20	Prof.S.A.Paranjape	M. Tech.	Assistant Professor	Electronics Engineering (computer)	13	--
21	Prof. M.K.Pote	M. Tech.	Assistant Professor	E &TC Microwave Engineering	12	--
22	Prof.J.A.Mokashi	M.E.	Assistant Professor	Electronics Engineering (computer)	11	--
23	Prof.M.V.Pathade	M.E.	Assistant Professor	E &TC Microwave Engineering	13	--
24	Prof.A.S.Khade	M. Tech.	Assistant Professor	Electronics (Digital System)	10	--
25	Prof.G.R.Padalkar	M.E.	Assistant Professor	Electronics Engineering	10	--
26	Prof.Vidya Sisale	M.E.	Assistant Professor	Electronics Engineering	10	--
27	Prof.S.A. Potdar.	M. Tech.	Assistant Professor	Digital Communication & Network	11	--
28	Prof.M.S.Patankar	M.E.	Assistant Professor	Electronics Engineering	8	--
29	Prof.Padma Hirve.	M.E.	Assistant Professor	E&TC (Signal Processing)	7	--
30	Prof.S. S. Vanarase	M.E.	Assistant Professor	Electronics Engineering	15	--

31	Prof.K.S.Joshi	M.E.	Assistant Professor	Electronics Engineering	16	--
32	Prof.Waghmare Prachi	M.E.	Assistant Professor	VLSI & Embedded	4	--
33	Prof.Rupali Pawar	M.E.	Assistant Professor	Electronics & Telecommunication Engineering	12	--
34	Prof.R.R. Borhade	M. Tech.	Assistant Professor	E &TC Microwave Engineering	7	--
35	Prof.S.A.Mangale	M. Tech.	Assistant Professor	Electronics Instrumentation	15	--
36	Dr. Reena Kulstreshtha	Ph. D	Professor	Computer Engineering	20	--
37	Prof.M.M. Dewasthale	M.E.	Assistant Professor	Electronics Engineering	16	--
38	Prof.A.R.Fukane	M.E.	Assistant Professor	E&TC (Signal Processing)	5	--
39	Prof.P.C.Shenolikar	M.E.	Assistant Professor	Electronics (Digital System)	6	--
40	Prof.H.V.Khedlekar	M. Tech.	Assistant Professor	E&TC, Wire & wireless communication	4	--
41	Prof. A. S. Divekar	M.E.	Assistant Professor	E&TC (Signal Processing)	12	--
42	Prof.T. K. Kadam	M. Tech.	Assistant Professor	E&TC (Signal	4	--

				Processing)		
43	Prof. R. T. Suryawanshi	M. Tech.	Assistant Professor	Electronics (Digital System)	4	--
44	Prof.Minal Pawar	M.E.	Assistant Professor	Electronics Engineering	4	--
45	Prof.Sonal Patel	M.S.	Assistant Professor	M.S. (Power Electronics)	5	--

8. Percentage of classes taken by temporary faculty – programme-wise information:

Programme	Semester I	Semester II
UG	33%	26.77%
PG	48.78%	0%

9. Programme-wise Student Teacher Ratio

Programme	Student Teacher Ratio
UG	1:14
PG	1 : 12

10. Number of academic support staff (technical) and administrative staff: sanctioned and filled

	Sanctioned	Filled
Technical Staff	17	17
Administrative Staff	7	7

11. Number of faculty with ongoing projects from a) national b) international funding agencies and c) Total grants received. Mention names of funding agencies and grants received project-wise. : NIL

12. Departmental projects funded by DST-FIST; DBT, ICSSR, etc.; total grants received

Sr. No	Project Title	Year of Commencement	Funding Agency	Amount Sanctioned
1.	Broad band MS Patch Antenna design for proximity sensor of artillery shells.	2012	DRDO	Rs 12 L

13. Research facility / centre with

- a. state recognition
- b. national recognition
- c. international recognition

The department has good research facilities for students and faculty members.

Department has also received funds from the industry for the same.

Department is a Ph.D centre in E &TC under Savitribai Phule Pune University, Pune.

14. Publications:

a. **Number of papers published in peer reviewed journals (national / international):** The number of papers published in the peer reviewed journals are 97

b. **Monographs:** NIL

c. **Chapters in Books:** Faculty members have published five chapters in the books.

d. **Edited Books :** NIL

e. **Books with ISBN with details of publishers:** one book with ISBN 10:3847319035, ISBN-13:978-3847319030 is published by LAMBERT, Academic Publishing (2012)

• **Number listed in International Database (For e.g. Web of Science, Scopus, Humanities International Complete, Dare Database**

–

International Social Sciences Directory, EBSCO host, etc.): The number of publications listed in international databases is 119

• **Citation Index – range / average :** The citation index range is between 1 – 6 with an average of 2.625

- **SNIP** : The SNIP range is 0.26-0.784
- **SJR**: The SJR range is 0.26- 0.368
 - **Impact Factor – range / average** : The range of impact factor of the publications is 0.14 - 3.559
- **h-index** : The range of h-index is 10 - 40

15. Details of patents and income generated

Sr. No.	Applicant	Patent/ Copyright	Year of Application	Filed / Sanctioned
1	Dr. A. S. Patil	System and Method for classification of Human Emotions 3927/MUM/2015	2015	Filed
2	Dr. B. V. Pathak	System and Method for Text Independent Emotion Transformation 4371/MUM2015	2015	Filed
3	Prof. M. M. Dewasthale	A TwoTap High Performance Adaptive Filter For Speech Denoising 4246/MUM/2015	2015	Filed
4	Dr. P.V.S.Shastry	System and Method for Implementation of Advanced Encryption Standard using Systolic Architectures 3137/MUM/2014	2014	Filed
5	Gargi Bhandari, Amruta Kulkarni Neha Raste	Indian patent 'Intelligent Sericulture System using Zone based Optimal Cascade control of combined biotic and abiotic data' Patent (611/MUM/2014)	2014	Filed
6	Madhura Kulkarni, Yashaswi	Filed Provisional Patent titled "Method and Design of Harnessing Ambient RF Energy	2014	Filed

	Meghmalani Nakita Oza	from FM and AM Band” .Application No. 370/MUM/2014		
7	Dr.Seema Rajput	“Security of cognitive radio using smart radio channel change protocol”,Patent registration number: 301/MUM/2012	2013	Filed
8	Meera Kulkarni Shweta Tembhurnikar	Filed Provisional Patent titled “Solar Powered Wireless Mobile Charger filled in the name of the College. Application No. 272MUM/13	2013	Filed

16. Areas of Consultancy and income generated

Department is in the process of exploring consultancy opportunities. The college encourages the faculty members for taking up consultancy and testing projects.

17. Faculty recharging strategies

- College encourages the faculty to attend STTP, Conferences, FDPs, and Refresher courses in India and abroad with financial support
- College encourages faculty members to pursue PhD programmes. They are given paid study leave upto two years for the research work.
- Incentive of Rs. 5000 and Rs. 10,000 is given to faculty for publishing paper in journal with Scopus index and SCI index respectively.
- Faculty members are encouraged to file patents. Financial support is provided to file the patents

18. Student projects

- **percentage of students who have done in-house projects including inter-departmental** : UG Students : 75.69%, PG Students: 93.75%
- **percentage of students doing projects in collaboration with industries / institutes** : UG Students : 24.31% , PG Students: 6.25%

19. Awards / recognitions received at the national and international level by

- Faculty
- Doctoral / post-doctoral fellows
- Students

Faculty Awards in Paper Presentations:

Sr. No.	Name of Faculty	Award	Event	Venue
1	Dr. Mrudul Dixit	Best Paper Award for Network Traffic Intrusion Detection System using Fuzzy Logic	International Conference on Internet of Things, Next Generation Networks and Cloud Computing 2017	SKNCOE Pune Feb 17th-18th 2017
2	Dr. Bageshree Pathak	Excellent Paper Award for Emotion Conversion of Speech Signal using Neural Network	International Conference on Industrial Electronics and Electrical Engineering, ICIEEE	Pune 20 th July 2014

Student Awards:

- Awards in Paper presentations:
 - National Level : NIL
 - International Level : 02

20. Seminars/ Conferences/Workshops organized and the source of funding (national/international) with details of outstanding participants, if any.

Conference on Advances in Signal Processing was organized by the department from 9th to 11th June 2016. The conference was sponsored by IEEE Pune Section and IET, Pune. The list of outstanding participants are:

- Mahesh Bhargava: Sr. Technical Officer, Centre for Development of Advance Computing, Pune
- M.V. Shivkumar : Sr. Team leader, LG Soft India Pvt. Ltd. Bangalore
- Siddhi Tavildar : MS Student San Diego State University, US

21. Student profile course-wise:

Name of the Programme (refer to question no. 2)	Applications received	Selected		Pass percentage	
		Male	Female	Male	Female
UG	*	NA	180	NA	89.3%
PG	*	NA	18	NA	100%
Ph.D		2	2	NA	NA

* Admissions are done through centralized procedure regulated by state government

22. Diversity of Students :

Name of the Programme (refer to question no. 2)	% of students from the College *	% of students from State **	% of students from other State ***	% of students from other countries
UG	*	93.56	6.45	#
PG	0.9	91.67	8.33	#
Ph.D	25	100	0	#

* No junior college is attached with our institute.

**There are norms for admission procedure such as minimum 65% seats are reserved for students from state of Maharashtra

*** There are norms for admission procedure such as 35% seats are reserved for students from other state of India.

There is no provision to admit students from other countries for UG, PG and Ph.D programmes.

23. How many students have cleared Civil Services and Defense Services examinations, NET, SET, GATE and other competitive examinations? Give details category-wise.

Three students cleared civil and defense services.

Many students appear for the GATE exams but the exact data is not available.

The number of students appeared for CAT and GRE-TOFFEL are 5, 54 respectively.

24. Student progression

Student progression	Percentage against
---------------------	--------------------

	enrolled
No. of student opted for continuing Education UG to PG	6.9
PG to Ph.D	1.4
Ph. D to Post Doctoral	0
Employed : Campus selection	55.10

*Other than campus recruitment data is not available

25. Diversity of staff :

Percentage of faculty who are graduates	
of the same university	51.11 %
from other universities within the State	31.11 %
from universities from other States	15.55 %
from universities outside the country	2.22 %

26. Number of faculty who were awarded M.Phil., Ph.D., D.Sc. and D.Litt. during the assessment period

Five faculty members were awarded Ph.D. in 2016-17 and 1 faculty was awarded in 2015-16.

27. Present details of departmental infrastructural facilities with regard to

- (i) **Library:** Our central library has collection of program related books (346 titles with 14,928) sufficient for the students and faculty. Every year the library procures books as per the recommendations of the faculty members and the requirement of students. The central library has program related 24 national and 7 international journals and 156 e-journals. In addition to the central library, the departmental library has:

- project and seminar reports of the previous years
 - reference books
 - collection of research papers published by the department faculty and students
- (ii) **Internet facilities for staff and students:** Department has internet facility for faculty and students in all the faculty rooms and Laboratories with bandwidth of 106Mbps.
- (iii) **Total number of classrooms:** 06 classrooms along with 2 tutorial rooms are allotted to the department.
- (iv) **Class rooms with ICT facility:** All these classrooms are equipped with ICT facilities.
- (v) **Students' laboratories:** The department has 12 student laboratories.
- (vi) **Research laboratories :** The department has a research laboratory

28. Number of students of the department getting financial assistance from College.

16 students received financial assistance from the college in academic year 2015-16

29. Was any need assessment exercise undertaken before the development of new program(s)? If so, give the methodology.

The assessments exercise was undertaken before the development of PG and Ph.D. Programme.

PG Programme: There was no PG course existing in specialization of Signal Processing which has good demand in the industry. Discussion of faculty members, industry experts led to development of PG course in E&TC with specialization in Signal Processing.

Ph.D. Programme: Many faculty members from the college and under SPPU were interested in pursuing Ph.D. programme. To provide opportunities to interested faculty members department started Ph.D. programme with the approval of SPPU, Pune.

30. Does the department obtain feedback from -

a. faculty on curriculum as well as teaching-learning-evaluation? If yes, how does the department utilize it?

The department has a formal mechanism to elicit feedback on curriculum from national faculty. The external members of the BOS and the Academic Council of the institute are affiliated to the institutes across nation. They give their feedback on curriculum in their respective meetings. The department makes use of the feedback for making modifications in the curriculum to attain national and international standards. The department has planned to collect faculty feedback on curriculum as well as teaching-learning-

evaluation.

b. students on staff, curriculum as well as teaching-learning-evaluation and what is the response of the department to the same?

In every semester after the course syllabus is completed feedback from the students is taken related to every course. Feedback given by the students is analysed at the departmental level for every aspect like teaching methodology, communication skills, syllabus coverage, punctuality, effectiveness of the teaching-learning process and helpfulness towards the students. To improve the effectiveness of the lectures constructive suggestions are given by the Head of the department.

c. alumni and employers on the programmes and what is the response of the department to the same?

Alumni and experts from industry as well as community are members of the IQAC of the institute. These members get an opportunity to express their views on curriculum enrichment in the IQAC meetings. Employers and industry experts are the members of the BOS and the Academic Council of the department. They give their feedback on curriculum in their respective meetings. During the process of recruitment, the institute also obtains feedback on the existing curriculum and its enrichment from the employers.

31. List the distinguished alumni of the department (maximum 10)

The List of distinguished alumni is as follows:

- Asmita Jadhav - Khairnar, Director, Electronics - Component Unit, CIL, Pune
- Madhavi H. Belsare-Kulkarni, Assistant Professor, PVG's COET, Pune
- Aarthi Ram, Director, PMI Dallas Chapter, USA
- Maj. Preetal Parakhi, Major, Indian Army
- Deepti Mehandale-Kanade, Deputy Commissioner, Indian Administrative Services
- Meenal Vadake-Mukadam, Information Security Manager, Denver, Colorado
- Mayuri Pawar, PSI, Maharashtra Police
- Pratibha Vellanki, Pursuing post Doc, Deakins University Australia
- Purva Gujar, Sr. design Engineer, Dolby Laboratories, USA
- Chhavi Goenka, Staff Scientist, Computational Physics Inc. North Chelmsford, USA

32. Give details of student enrichment programmes (special lectures / workshops / seminar) with external experts.

53 seminars were conducted by industry and academic experts from 2013-2016 for UG, PG and Ph.D students and 21 workshops were organized for

UG and PG students from 2013-2016.

The details of seminars conducted in 2016-17 are as follows:

Sr. No.	Name of the Guest	Topic	Audience Class
1	Sunil Desai,	Scope of Embedded Systems	TE
2	Pradnya Kashikar	Data & Network security	BE
3	Satish Tambe	Road Safety Management	SE
4	Mr. Amit Sulakhe,	Applications of Signals and Systems	SE
5	Prasad Tasgaonkar	Advance 'C' Language	TE
6	Pradnya Kashikar	Data & Network security	BE
7	Vivek Arnake	Brushless DC Motors & Ind. Applications	SE
8	Nitin Patil	Behavioral training for drivers for improving road safety	SE
9	Pramod Gunthey	Road safety management	SE
10	Mr. Manu Batura	Applications of Graph	BE
11	Ganesh Bhutekar	Programable Logic Devices & semiconducters	SE
12	Ganesh Bhutekar	Programmable Logic Devices & semiconducters Memories	BE
13	Vishwas udpikar	Applications of DSP	TE/ M.Tech
14	Amit Dixit	TQM & six Sigma	TE

The details of workshops conducted in 2016-17 are as follows:

Sr.	Names of eminent	Topics / Areas covered	Class
------------	-------------------------	-------------------------------	--------------

No.	speakers		
1	Mr. Mohan Kondle	Raspberry Pi	TE
2	Mr. K. G. Gunale	Open CV-Python	BE
3	Mr. Shrikant Atkarne	Latest trends in CMOS VLSI Design using Microwind	BE

33. List the teaching methods adopted by the faculty for different programmes.

The teaching methods adapted by the faculty for UG programmes are:

- Blackboard and Chalk
- OHP
- Multimedia equipped classroom
- Group discussion
- Crosswords solving
- Quiz
- Role Play
- Multiple choice questionnaire
- Case studies
- Tek talks
- Games
- NPTEL Lectures
- e-books/ journals
- Animated ppts/ videos

The teaching traditional and innovative methods adapted by the faculty for

PG programmes are:

- Blackboard and Chalk
- OHP
- Group discussion
- Crosswords solving
- Quiz
- Interactive Board
- Multiple choice questionnaire
- Case studies
- Tek talks
- Flipped class
- Multimedia equipped classroom

34. How does the department ensure that programme objectives are constantly met and learning outcomes monitored?

The program objectives of the department include providing students intellectually inspiring environment for technical learning through Design, Logic building and Realization of Electronic Systems along with inculcating professional ethics, good communication skills and teamwork. To ensure meeting of the program objectives, the syllabi of each subject is designed as per the objectives of the program. For this, the department also considers the latest trends and futuristic requirements of the industry.

The department ensures monitoring of the learning outcomes by mentoring faculty members to develop suitable evaluation strategies and to frame question papers for both, the In-Semester as well as the End-Semester examinations, as per the general quality guidelines and requirements of the college. The department also considers feedback of the employers and the alumnae to ensure meeting of learning outcomes.

35. Highlight the participation of students and faculty in extension activities.

The activities under IEEE , IET and NSS are coordinated and organized by the faculty.

List of activities conducted under IEEE Student branch are:

- Twenty IEEE and Non-IEEE students from E&TC and Computer dept. attended IEEE Pune Section Student Congress 2016 at Zeal Education Society.
- Five groups registered for the ‘Technology Dissemination Contest for Students’ (TDCS-2016) organized by IEEE Education Society (Pune Section) & JSPM’s Jayawantrao Sawant College of Engineering, Pune from July to Aug. 2016. Two selected groups went for the competition at JSPM, Pune in Aug. 2016
- Fifty Six students visited Avaya India Pvt. Ltd., Pune in 2016.
- Sixteen IEEE student members visited Dawn studio, Pune in 2016.
- Twenty four IEEE Student members attended the seminar on cyber security and evolving technology in 2017.

List of activities conducted under IET Student branch are:

- A marathon of 4kms was conducted under IET under Women in Engineering category on in 2017 and 70 women engineers participated
 - IET mini project competition is organised in 2017 more than 30 groups participated from various colleges under SPPU, Pune

List of Activities conducted under National Service Scheme (NSS) are as below:

- Organization of awareness programmes for Plastic Waste and E -Waste management, Oral Health, Self Defence tactics, Health awareness.
- Blood Donation by college students, Eye Check-up, Dental Check-up and Health Check-up camps for villagers.
- Activities conducted at Kalyan village: Tree Plantation, various educational activities at school. Visit of Kalyan village school children to Cummins College technical festival 'Innovation'.

36. Give details of “beyond syllabus scholarly activities” of the department.

The details of beyond syllabus scholarly activities are as follows:

- Industrial visits: From 2013-2017, 34 industrial visits were organized and on an average 150 students participated in every visit.
- Guest Lectures: 115 guest lecturers were organized for UG and PG students
 - Mini project competition and BE Project competition: every year all the third and final year students participate in the mini project and BE project competition.
 - Workshops: 21 workshops were organized for the UG and PG students from 2013-2017

37. State whether the programme/department is accredited/graded by other agencies? If yes, give details.

The college is accredited by NAAC in the year 2002 and 2012. The department is accredited by NBA in the years 1998, 2002, 2006 and 2012. Currently the department is in the process of applying for NBA reaccreditation.

38. Detail any five Strengths, Weaknesses, Opportunities and Challenges (SWOC) of the department

Strengths:

- Experienced and dedicated faculty
- Good percentage of faculty members with Ph. D. degree
- High faculty retention ratio
- Laboratories are facilitated with high end equipment
- Good number of publications

Weaknesses:

- Less number of funded research projects and consultancy activities
- Few faculty members with industrial experience
- Not so strong alumnae network

Opportunities:

- Undertaking interdisciplinary research
- Offering industry-specific certificate courses
- Development of MOOC content for the courses under autonomous framework

Challenges:

- Achieving 100% student placements
- Improvement of communication skills of the students from rural backgrounds
- Promotion of entrepreneurship activities

39. Future plans of the department.

- enhancing student mentoring activities, value addition programs and communication skills development programs to improve student employability
- faculty sabbatical programs
- increasing number of funded research projects
- exploring opportunities for credit transfer
- establishing centre of excellence
- establishing additional PG programs

Evaluative Report Instrumentation and Control Engineering

1. Name of the Department & its year of establishment

Name: Instrumentation and Control Engineering

Year of establishment: 1991

2. Names of Programmes / Courses offered (UG, PG, M.Phil., Ph.D., Integrated Masters; Integrated Ph.D., etc.)

Name of Program	Program Duration	Student Intake	Start Date
B.Tech/BE Instrumentation and Control	4 Years	60	1991
M.Tech/ME Instrumentation and Control with specialization in Biomedical Instrumentation	2 Years	18	2009

3. Interdisciplinary courses and departments involved

Following table shows the various interdisciplinary courses opted by the UG and PG students of Instrumentation and Control

For UG		
Name of the Subject	Year	Departments Involved
Mathematics I, II & III	FY and SY B.Tech	Basic Sciences & Humanities
Basic Civil & Environmental Engineering	FY B.Tech	
Soft Skills	SY B.Tech	
Water Management	SY B.Tech	
Industrial Management	TY B.Tech	
Basic Electrical/Electronics Engineering	FY B.Tech	Electronics & Telecommunication
Fundamentals of Programming Language	FY B.Tech	Information Technology
Graphics	FY B.Tech	Mechanical Engineering
Basic Mechanical Engineering		
Open Elective Courses	B.Tech	Other Departments
For PG		
Name of the Subject	Year	Departments Involved
Soft Skills	M.Tech	Basic Sciences & Humanities
Disaster Management	M.Tech	
Research Methodology	M.Tech	Electronics & Telecommunication

4. Annual/ semester/choice based credit system

Semester based credit system is followed by the college.

5. Participation of the department in the courses offered by other departments

NIL

6. Number of teaching posts sanctioned and filled (Professors/Associate Professors/ Asst. Professors)

Teaching Posts for UG	Sanctioned	Filled
Professors	01	00
Associate Professors	03	00
Asst. Professors	08	13
Teaching Posts for PG	Sanctioned	Filled
Professors	01	01
Associate Professors	01	01
Asst. Professors	01	00

7. Faculty profile with name, qualification, designation, specialization, (D.Sc./D.Litt. /Ph.D. / M. Phil. etc.,)

Name	Qualification	Designation	Specialization	No. of Years of Experience	No. of Ph.D. Students guided for the last 4 years
Dr. Anagha M. Panditrao	Ph.D.	Professor	Ph.D. E&TC	21	0
Dr. Vikas D. Hajare	Ph.D.	Associate Professor	Ph.D. Instrumentation Engineering	17	0
Prof. Atul K. Joshi	ME	Assistant Professor	ME Instrumentation	21	0
Prof. Dipali S. Ramdasi	ME	Assistant Professor	ME E&TC Specialization Instrumentation	20	0
Prof. Asmita T. Wakankar	ME	Assistant Professor	Biomedical Instrumentation	17	0
Prof. Harishchandra T. Patil	ME	Assistant Professor	ME Electrical, Microprocessors Systems	20	0
Dr. Jayanand P. Gawande	Ph.D.	Assistant Professor	Ph.D. Instrumentation Engineering	15	0
Prof. Pratima	BE	Assistant	BE	21	0

V. Kulkarni		Professor	Instrumentation and Control		
Prof. Vaishali M. Upadhye	ME	Assistant Professor	ME Process Instrumentation	20	0
Prof. Revati V. Shriram	MS	Assistant Professor	MS Electrical Engineering	15	0
Prof. Nivedita M. Daimiwai	ME	Assistant Professor	ME Biomedical Instrumentation	18	0
Prof. Yashwant G. Adhav	ME	Assistant Professor	ME Instrumentation and Control	14	0
Prof. Swati P. Madhe	ME	Assistant Professor	ME Process Instrumentation	12	0
Prof. Amruta T. Bahulikar	ME	Assistant Professor	ME Process Instrumentation	08	0
Prof. Rakesh P. Borse	ME	Assistant Professor	ME Instrumentation	06	0

8. Percentage of classes taken by temporary faculty – programme-wise information

Following table shows the % of classes taken by the temporary faculty in year 2016-2017

For UG	
Semester I	26.63 %
Semester II	23.07 %
For PG	
Semester I	8.92 %
Semester II	4.65 %

9. Programme-wise Student Teacher Ratio

Student-Teacher Ratio (STR) of UG & PG for AY 2016-2017 is: STR for UG = 15:1 and STR for PG = 12:1

10. Number of academic support staff (technical) and administrative staff: sanctioned and filled

Academic Support Staff	Sanctioned	Filled
Support Staff	06	06
Administrative Staff	06	06

11. Number of faculty with ongoing projects from a) national b) international funding agencies and c) Total grants received. Mention names of funding agencies and grants received project-wise.

Following table gives details of the funding received by the faculty members:

Name of Faculty	PI	Co-PI	Name of Funding Agency	Grant Received in Rs
Dr. Anagha Panditrao	Yes	-	Ramchandra	2,00,000
Prof. Amruta Bahulikar	-	Yes	Dattatreya Prathishthan, Pune.	

12. Departmental projects funded by DST-FIST; DBT, ICSSR, etc.; total grants received

At present, none of the department projects are funded by DST-FIST; DBT, ICSSR.

13. Research facility/centre with

- state recognition
- national recognition
- international recognition
- College strives to provide infrastructure such as high end equipment, computers, softwares, internet facilities. Library has subscribed reputed print and e-journals.
- The Department has established MEMS research and design centre with the help of Central government program, National Program in Micro and Smart Systems (NPMAS).

14. Publications:

Number of papers published in peer reviewed journals and conferences (national/international)

Conferences		Journals	
National	International	National	International
16	81	11	61

Chapter(s) in Books

Author	Details
Prof. Asmita Wakankar	Intelligent System Technology and Applications 2016, “Automatic Diagnosis of Breast Cancer using Thermographic Color Analysis and SVM Classifier” ISBN: 978-3-319-47951-4 (Publisher -Springer) pp: 21-32
Dr. Anagha Panditrao	Lecture Notes in Electrical engineering 2009, Visible Light Source Temperature Estimation using Digital Camera Photography” ISBN: 978-0-387-76482-5 (Publisher -Springer) pp: 249-258

Number listed in International Database (For e.g. Web of Science, Scopus, Humanities International Complete, Dare Database - International Social Sciences Directory, EBSCO host, etc.)

Conference Publications		
National	International	Scopus Indexed
16	81	51

Journal Publications			
National	International	SCI Indexed	Scopus Indexed
11	61	14	34

Other Factors	Range	Average
Citation Index – range/average (This is h-index of author – Author Metric)	1 - 6	3.2
SNIP	0.029 - 1.898	0.5496
SJR	0.1 - 1.186	0.2902
Impact Factor	0.14 - 2.6	0.751
h-index (This is a H-index of journal - Journal Metric)	9 - 79	21

15. Details of patents and income generated

Title of the Patent	Faculty Involved	Application/File No.
Double Focus Stop Pick-up for Acoustic Signals	Prof. Atul Joshi	2563/MUM/2015
Method and Apparatus to Study Fracture Mechanical Properties of Nails and its usage as a Diagnostic Tool	Prof. Atul Joshi	1226/MUM/2009

Title of the Patent	Students Involved	Application/File No.
Driver Safety System using Helmet fitted with Pulse Detection Sensor	Ms. Arundhati Bhide	201721000580/2017
Incision Tool	Ms. Arundhati Bhide	Design No/Year: 281748/2016
Vehicle Safety System using Ignition Control	Ms. Alisha Butala & Ms. Akshada Todankar	4749/MUM/2015
Auto Responsive Handle Grip Detection for Vehicles	Ms. Kruti Patel & Ms. Shruti Kharwandikar	533/MUM/2015

16. Areas of consultancy and income generated

Faculty members of the department are engaged in consultancy for industry without any charges in the form of UG and PG projects. Some of such examples are:

1. Ultrasonic range finder sensor for KPIT Cummins
2. High speed disc cutting machine controller for KPIT Cummins
3. Valve leakage testing apparatus for BES Engineers
4. Micro-hardness tester control panel for Metatech
5. Wire harness tester Tekson Electronics

17. Faculty recharging strategies (UGC, Refresher/Orientation Programs, Workshops, STTPs and FDPs)

- Faculty is encouraged, sponsored and allowed on-duty to attend various external and in-house faculty development programs.
- Faculty members enrolled for PhD can avail fully paid study leave up-to two years. Three faculty members of the department have availed this facility till date.
- College recognizes research work done by the faculty members and the students through college magazine and news bulletin. College has policy to recognize research publication in reputed journals by providing Rs. 10, 000 for SCI indexed journals and Rs. 5000 for Scopus indexed journals. For any research funding received by the faculty member in the capacity of PI or Co-PI gets an incentive of 3% or 2% of the grant amount, respectively.

18. Student projects

- **percentage of students who have done in-house projects including inter-departmental:** for UG: 60% and for PG: 90%
- **percentage of students doing projects in collaboration with industries / institutes:** Industry/hospital sponsored projects for UG: 40% and for PG: 10%

19. Awards / recognitions received at the national and international level by

- **Faculty**
- **Doctoral / post doctoral fellows**
- **Students**
- Ms. Kruti Patel and Ms. Shruti Kharwandikar has received Silver Award in SPARKLE 2015 (National level project competition organized by KPIT)
- Ms. M. S. Anushree has received PRATIBHA Award by EATON in year 2014-2015.
- Ms. Amala Raja has received PRATIBHA Award by EATON in year 2015-2016.

20. Seminars/ Conferences/Workshops organized and the source of funding (national / International) with details of outstanding participants, if any.

NIL

21. Student profile course-wise:

Name of the Course	Year	Application Receives (*)	Selected		Pass Percentage	
			Male (**)	Female	Male	Female
For UG						
Instrumentation and Control	2015-2016	-	-	82	-	92.40%
For PG						
Instrumentation and Control	2015-2016	-	-	12	-	81.25%

* The College runs Engineering Program only for Women.

** The college being affiliated to SPPU, the admission process is centralized (CAP).

22. Diversity of Students

Name of the Course (refer question no. 2)	Year	% of students from the College(*)	% of students from the State(**)	% of students from other States(***)	% of students from other Countries(#)
B. Tech Instrumentation and Control	2015-2016	-	95.12%	4.87%	-
M. Tech Instrumentation and Control	2015-2016	-	83.34%	16.66%	-

Note:

* No Junior College is attached.

** The college being affiliated to SPPU, the admission process is centralized(CAP).

*** 35% seats are reserved for students from other state of India.

There is no provision to admit the students from other countries.

23. How many students have cleared Civil Services, Defense Services, NET, SLET, GATE and any other competitive examinations?

Every year many students appear for GATE examination but the result for the same is not available.

24. Student progression (Average of last four years)

Student Progression	Percentage against Enrolled
UG to PG	14.16%
PG to M.Phil	-

PG to Ph.D.	-
Ph.D. to Post-Doctoral	-
Employed	
• Campus selection	43.45%
• Other than campus recruitment	No Data Available
Entrepreneurs	No Data Available.

25. Diversity of staff

Percentage of faculty who are graduates	Percentage
of the same parent university	53.33%
from other universities within the State	40%
from other universities from other States(country)	-
from other universities from other country	6.66%

26. Number of faculty who were awarded Ph.D., D.Sc. and D.Litt. during the assessment period.

Two faculty members were awarded Ph.D. during the assessment period.

27. Present details about infrastructural facilities:

Our central library has collection of 1626 titles and 4656 UG program related books, 535 titles and 916 books for PG program. Every year the library procures books as per the recommendations of the faculty members and the requirement of students. In addition to the central library, the departmental library has project and seminar reports of the previous years and reference books collection of research papers published by the department faculty and students

- a) **Library:** One Department Library
- b) **Internet facilities for staff and students:** Every computer on the campus has internet facility with 106 mbps bandwidth.
- c) **Total number of class rooms:** 3 classrooms are allotted to the department.
- d) **Class rooms with ICT facility:** All these classrooms are equipped with ICT facilities.
- e) **Students' laboratories:** The department has 11 student laboratories.
- f) **Research laboratories:** The department has a research laboratory.

28. Number of students of the department getting financial assistance from College.

Twelve students have got financial assistance in year 2015-2016.

29. Was any need assessment exercise undertaken before the development of new program(s)? If so, give the methodology.

The department undertook need assessment exercise in designing the autonomous curriculum of the program.

30. Does the department obtain feedback from

- a. **Faculty on curriculum as well as teaching-learning-evaluation? If yes, how does the department utilize it?**

The external members of the BOS and the Academic Council of the institute give their feedback on curriculum in their respective meetings. Depending on the need for specific subjects, the department invites feedback from faculty from other institutes via email communication as well. The department has planned to collect faculty feedback on curriculum as well as teaching-learning-evaluation.

b. Students on staff, curriculum as well as teaching-learning-evaluation and what is the response of the department to the same?

The institute does have a formal mechanism to obtain feedback from students at the end of every academic year. Such a feedback is used to make modification in the curriculum, if required. The students give feedback on staff as well as teaching-learning-evaluation every semester for each subject and teacher. The Director and head of department discuss the feedback with each faculty member. Through this discussion, the areas of improvement are conveyed to the faculty.

c. Alumni and employers on the programmes and what is the response of the department to the same?

Alumni, Employers and industry expert give their feedback on curriculum in the enrichment in the departmental meetings. During the process of recruitment, feedback obtains on the existing curriculum and its enrichment from the employers.

31. List the distinguished alumni of the department (maximum 10):

1. Ms. Priti Nagarkar, Founder and Chief Operating Officer, Mapyn Technologies.
2. Ms. Gayarti Adi, Technical Specialist, Cummins Diesel, USA.
3. Ms. Manik Patwardhan, Founder, Element78.
4. Mrs. Shubhada Kaulgud, Process Leader, India Technical Center Expansion Project, CIL Pune.
5. Ms. Shilpa Sondkar, Head, Instrumentation and Control, Vishwakarma Institute of Technology, Pune.
6. Ms. Mugdha Marudgan, CEO at Shamraj Enercon Technologies.
7. Ms. Kshitija Shevgaonkar, Biomedical Engineer at Kinetic River Corp, California.
8. Ms. Shilpa Nerlikar, Advanced Design Engineer at Altera Corporation, California.
9. Ms. Anuradha Joshi, Consultant at HM Solutions, Pittsburgh.
10. Ms. Chitra Kanhere, Analyst at Adjility Consulting.

32. Give details of student enrichment programmes (special lectures / workshops / seminar) with external experts.

In last four years twenty-three Workshops and forty-one Guest Lectures were conducted. Following are the details:

Guest lectures conducted in the academic year 2016-2017:

Sr.No.	Name of Guest Lecturer	Class	Date	Topic
1.	Prof. M. D. Gangal	SE	28 th Jul 2016	Basic concept of Op Amps and Electronic Measuring Instruments
2.	Ms. Sayali Gogate (Thermax)	BE	28 th Jul 2016	Instrumentation Documentation

3.	Dr. Chinmay Ukidave (Founder, MuDot Controls)	TE	30 th Aug 2016	Control Systems
4.	Dr. Dhananjay Bodas (Agarkar Research Institute, Pune)	TE	13 th Jan 2017	BioMEMs
5.	Mr. Sumit Mali (Emerson)	BE	16 th Mar 2017	Distributed Control System (DeltaV DCS)
6.	Dr. Mrs. Rohini Mudhalwadkar (Gov. College of Engg, Pune)	BE	17 th Mar 2017	Recent trends and Research Opportunities in Food Processing

Workshop for students conducted in the academic year 2016-2017:

Sr.No.	Subject and Resource Person	Class	Date
1.	“Session on Entrepreneurship” by Mr. Marathe	BE	2 nd Sep 2016
2.	“Session on IIOT” by Mr. Shroff	TE	5 th Jan 2017
3.	“Disaster Management” by Ms. Leela Ketkar	SE	9 th Jan 2017
4.	“Distributed Control System (DeltaV DCS)” by Mr. Sumit Mali (Emerson)	BE	16 th Mar 2017

33. List the teaching methods adopted by the faculty for different programmes.

- Effective learning through Demonstration of Pilot plants: To have the hands on and observe the actual working of the plants, the departmental labs are equipped with distillation, heat exchanger and steam and water analysis system.
- Use of software tool for Concept Building: Students are trained to design various systems through software.
- Guest Lectures: Industrial experts are invited to conduct workshops on software.
- Video Clips and Animation: Visualization of complex concept is achieved by using multimedia tools like animation and video clips.
- Quiz: Quiz is designed to test the analytical, logical, mathematical skills and memory of the students.
- Project based Learning: practical knowledge of students is enhanced by mini projects.
- Case Study based learning: Under this activity students work in small groups. Survey based assignments are given to each group. Students visit hospitals, pathology lab, operation theatres carry out survey of latest technology and the equipment's.

34. How does the department ensure that programme objectives are constantly met and learning outcomes monitored?

The program education objectives of the department to develop competent graduates ready to work in core domain such as process control, automation and healthcare. To develop self-learning ability and build confidence in students to pursue higher education and successful careers in national and international level.

To meet programme objectives, the Curriculum structure of the department is set by choosing different subjects and the syllabus as per industry needs.

The department ensures monitoring of the learning outcomes by mentoring faculty members to develop suitable evaluation strategies and to frame question papers for both, the In-semester as well as the End –Semester examinations, as per the general quality guidelines and requirements of the college.

35. Highlight the participation of students and faculty in extension activities.

The college has been sanctioned one unit of National Service Scheme (NSS) since 2012. Understating institution's social responsibility various activities conducted under NSS are:

- Organization of awareness programmes for Plastic Waste and E -Waste management, Oral Health, Self-Defense tactics, Health awareness.
- Blood Donation by college students, Eye Check-up, Dental Check-up and Health Check-up camps for villagers.
- Activities conducted at Kalyan village: Tree Plantation, various educational activities at school. Visit of Kalyan village school children to Cummins College technical festival 'Innovation'.
- College students organize rallies to create awareness about social issues such as plastic waste and e-waste management.
- Students actively participate in traffic control around college campus with the help of traffic police.
- Water and energy saving campaign for the nearby residents.
- Students and faculty members visit nearby residents to give information about girl's education schemes available in MKSSS.
- NSS conducted the Smart City Survey in the college neighborhood and survey for school dropout children in association with Pune Municipal Corporation (PMC).

36. Give details of “beyond syllabus scholarly activities” of the department.

Beyond syllabus activities are encouraged and students participate in various activities like paper presentation, technical events, workshops, project competitions, patents, TE mini projects, Industry and hospital visits.

37. State whether the programme/ department is accredited/ graded by other agencies. Give details.

- Instrumentation and Control Department is accredited by NBA in 1998, 2002, 2006 and 2012.
- College is accredited by NAAC in 2002 and 2012.

38. Detail any five Strengths, Weaknesses, Opportunities and Challenges (SWOC) of the department.

Strengths:

- Dynamic and committed faculty with high retention ratio
- Well-equipped spacious laboratories with latest resources
- Collaboration with various industries and renowned institutes for lab development and research.
- Good number of publications

Weaknesses:

- Limited number of research and funding projects
- Lesser international exposure
- Revenue generation through consultancy services is less

Opportunities:

- To improve employability, introduce job oriented courses on emerging areas.
- To promote innovation and entrepreneurship activities
- To work on healthcare related projects for the rural area
- To introduce interdisciplinary courses in the autonomous curriculum

Challenges:

- Faculty exchange and student exchange programs with renowned international institutes
- To increase in the number of patents and funded research projects
- To increase the student employment opportunities

39. Future plans of the department.

- To offer short-term certificate courses to improve employment opportunities for the students
- To establish Research Center
- Formation of Center of Excellence

Evaluative Report Department of Information Technology

1. **Name of the Department & its year of establishment**
The department of Information Technology was established in the year 1999.
2. **Names of Programmes / Courses offered (UG, PG, M.Phil., Ph.D., Integrated Masters; Integrated Ph.D., etc.)** - The program currently offered by the department is B. Tech. /B.E. Information Technology
3. **Interdisciplinary courses and departments involved**
At the first year level interdisciplinary courses such as Basic Mechanical Engineering, Basic Electrical and Electronics Engineering, Engineering Graphics, Engineering Mechanics and Environmental Studies are offered in which the other engineering departments are involved. Second year onwards interdisciplinary courses on humanities and management are offered. Students can also opt for interdisciplinary courses under elective course category offered by other departments.
4. **Annual/ semester/choice based credit system**
The department follows semester based credit system.
5. **Participation of the department in the courses offered by other departments**
The department offers course on “Fundamentals of Programming Languages”for the first year B. Tech. students of all the departments.
6. **Number of teaching posts sanctioned and filled (Professors/Associate Professors/ Asst. Professors)**

	Sanctioned	Filled
Professors	2	0
Associate Professors	2	2
Asst. Professors	8	14

7. Faculty profile with name, qualification, designation, specialization, (D.Sc./D.Litt. /Ph.D. / M. Phil. etc.,)

Name	Qualification	Designation	Specialization	No. of years of experience	No. of PhD students guided
Dr. Anagha Kulkarni	PhD	Associate Professor	Computer Engineering	23	-
Dr. Dipti Patil	PhD	Associate Professor	Computer Science and engineering	13	3 (guiding)
Madhura Tokekar	M E	Assistant Professor	Electrical	33	-
Sneha Thombre	M.E	Assistant Professor	Elect and Telecom	21	-
Chetana Gavankar	M. E.	Assistant Professor	Computer Science and Engineering IT	19	-
Makarand Velankar	M. E.	Assistant Professor	Computer Engineering	26	-
Harshad Wadkar	M. E.	Assistant Professor	Computer Engineering	18	-
Leena Panchal	M.E.	Assistant Professor	Information Technology	13	-
Radhika Bhagwat	Mtech	Assistant Professor	Electronics	13	-
Praful Meshram	M. E.	Assistant Professor	Information Technology	12	-
Harsha Sonune	ME	Assistant Professor	Information Technology	11	-
Suraj Chavan	M. Tech.	Assistant Professor	Computer Engineering	12	-
Suchitra Pakale	M. Tech	Assistant Professor	Computer Engineering	12	-
Prajakta Deshpande	B.E	Assistant Professor	Information Technology	10	-
Milind Kolambe	B.E	Assistant Professor	Computer Engineering	9	-
Cilla Varghese	M.E.	Assistant Professor	Electronics	05	-

8. **Percentage of classes taken by temporary faculty–programme-wise information-** The percentage of classes taken by the temporary faculty (ad hoc) is 8%.

9. **Programme-wise Student Teacher Ratio** – 14:1

10. **Number of academic support staff (technical) and administrative staff: sanctioned and filled** –
Academic support staff (technical) – 6, Administrative staff – 4

11. **Number of faculty with ongoing projects from a) national b) international funding agencies and c) Total grants received. Mention names of funding agencies and grants received project-wise.** - NIL

12. **Departmental projects funded by DST-FIST; DBT, ICSSR, etc.; total grants received** - NIL

13. **Research facility / centre with**
 o state recognition
 o national recognition
 o international recognition

The department provides facilities such as servers and software required for research. The college promotes research by providing paid leave to the faculty to pursue Ph.D. The college encourages faculties to publish in national and international conferences by providing financial assistance for travel and registration of conference. The college also provides incentives in terms of monetary awards for the faculty to publish in scopus indexed journals.

14. **Publications:**

* **number of papers published in peer reviewed journals (national/international)International:-** 35

* **Monographs**

* **Chapter(s) in Books**

Author Name	Book/Chapter	Book/Chapter title	Publisher	Year ISBN
Dr Anagha Kulkarni	Chapter	Long Live the New King of Big Data: Context	PHI	ISBN-978-81-203-5116-5
Dr. Dipti Patil	Chapter	Concept Adapting Real-Time Data Stream Mining For Health Care Applications	Springer	ISBN: 978-3-642-30156-8 year: 2012

* **Editing Books**

* **Books with ISBN numbers with details of publishers**

Author Name	Book title	Publisher	Year ISBN
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Dr. Dipti Patil	Dynamic data mining form Health	Lambert Academic Publishing	ISBN: 978-3-659-96262-2 Year 2016
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* **number listed in International Database (For e.g. Web of Science, Scopus, Humanities International Complete, Dare Database - International Social Sciences Directory, EBSCO host, etc.)**
 – 18 (only scopus considered)

	Range	Average
Citation Index	1 to 8	1.157
SNIP	2.065 to 0.006	0.597
SJR	0.675 to 0.1	0.22
Impact factor	0.821 to 0.358	0.098
h-index	1 to 4	1.71

15. Details of patents and income generated

Name of the faculty	Title of the patent and Details	Filed / sanctioned
Dr. Dipti Patil	System for real time cervix analysis and monitoring of pregnant woman Application no. 201621026892, dated 06th August 2016	Filed
Dr. Dipti Patil	Real time depression detection and analysis using multi-parametric fusion approach”, Application No. 4093/MUM/2015, dated 29th October 20152010-11(2)	Filed
Dr. Dipti Patil	Method for music based computing of human emotions and evaluating the Raga of Indian classical music for stress release and emotion control, Application no. 4212/MUM/2014, dated 30th December 2014	Filed
Dr. Dipti Patil	Method and apparatus for Wireless sensor Network based intelligent framework for Mobile Real timeHealth care System, on 18 April 2011. Application no. 259/MUM/2011	Filed
Dr. Dipti Patil	Method and Apparatus for Outlier Detection for High Dimensional Categorical Data Sets on 18 th April 2011. Application No. 1260/MUM/2011	Filed
Makarand Velankar	Sentimental perception framework based on speed of music and music ornaments Application no. 3526/MUM/2012 Publication Date : 27/06/2014	Filed

16. Areas of consultancy and income generated

The faculty members are in the process of exploring consultancy opportunities. Initial level discussions are completed with US-based Company “Simply-Compete”.

17. Faculty recharging strategies

The department encourages faculty members to update the knowledge for improvement in the quality of teaching and research by attending faculty development programs and training programs. The college reimburses the registration fees of these programs. The faculty members can also avail paid study leave to pursue Ph.D. program.

18. Student projects

- o **percentage of students who have done in-house projects including inter-departmental -**

The average percentage of students who have taken in-house projects across 4 years is 50%

- o **percentage of students doing projects in collaboration with industries / institutes -**

The average percentage of students doing projects in collaboration with industries/institutes across 4 years is 50%

19. Awards / recognitions received at the national and international level by

- o **Faculty**

2012-2013	Chetana Gavankar	Best Poster Oscar award	IIT Bombay- Monarch Research symposium
2015-2016	Chetana Gavankar	Student award at International semantic web conference, Japan	Semantic Web Science Association (SWSA), Germany

- o **Doctoral / post doctoral fellows**

- o **Students**

2016-2017	Tejaswee Bhise	Best Student award	Accenture
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20. Seminars/Conferences/Workshops organized and the source of funding (national international) with details of outstanding participants, if any.

Year	Collabration with	Name of FDP
Dec 2016	Savitribai Phule Pune University (SPPU)	IT Project Management FDP workshop
June 2015	SPPU	Software Modelling and Design
Dec 2014	SPPU	Statistics for Engineers
Jan 2012	Indian Society for Technical Education (ISTE)	Android Platform Mobile computing and research trends

21. Student profile course-wise

Name of the	Applications	Selected	Pass percentage
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Course (refer question no. 2)	received				
		Male	Female	Male	Female
B.E./B.Tech. Information Technology	**	*	**	*	96.54

*Our college is Women's engineering college.

** All the admissions happen via centralized admission procedure.

22. Diversity of Students

Name of the Course (refer question no. 2)	% of students from the college	% of students from the state	% of students from other States	% of students from other countries
B. Tech./B.E. Information Technology	***	96.03%*	3.07%**	#

*** No junior college is attached with our institute.

* There are norms for admission procedure such as minimum 65% seats are reserved for students from state of Maharashtra.

**There are norms for admission procedure such as 35% seats are reserved for students from other state of India.

There is no provision to admit students from other countries.

23. How many students have cleared Civil Services, Defense Services, NET, SLET, GATE and any other competitive examinations?

Many students appear for these exams but the exact information of selected students is unavailable.

24. Student progression

Student progression	Percentage against enrolled
UG to PG	12.3%
PG to M.Phil	Not applicable
PG to PhD	--
PhD to Post-Doctoral	--
Employed	
• Campus selection	73%
• Other than campus recruitment	Data not available
Entrepreneurs	Very few

25. Diversity of staff

Percentage of faculty who are graduates

Of the same parent university (SPPU)	40%
from other universities within the State	13%

from other universities from other States	47%
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26. **Number of faculty who were awarded Ph.D., D.Sc. and D.Litt. during the assessment period.** – One faculty member completed Ph.D. during the assessment period.

27. **Present details about infrastructural facilities**

a) **Library:**

Our central library has collection of program related books (5,133) sufficient for the students and faculty. Every year the library procures books as per the recommendations of the faculty members and the requirement of students. In addition to the central library, the departmental library has:

- project and seminar reports of the previous years
- reference books
- collection of research papers published by the department faculty and students

b) **Internet facilities for staff and students:** Every computer on the campus has internet facility with 106mbps bandwidth.

c) **Total number of class rooms:**3 classrooms are allotted to the department.

d) **Class rooms with ICT facility:**All these classrooms are equipped with ICT facilities.

e) **Students' laboratories:**The department has 9 student laboratories.

f) **Research laboratories:**The department has a research laboratory.

28. **Number of students of the department getting financial assistance from College.**

Every year students of the department receive financial assistance from the college. In the year 2015-16, 11 students from the department were given financial assistance.

29. **Was any need assessment exercise undertaken before the development of new program(s)? If so, give the methodology.**

The department undertook need assessment exercise in designing the autonomous curriculum of the program.

30. **Does the department obtain feedback from**

a. **Faculty on curriculum as well as teaching-learning-evaluation? If yes, how does the department utilize it?**

The institute has become autonomous recently, i.e. from the academic year 2016-17. The department has planned to collect faculty feedback on curriculum as well as teaching-learning-evaluation.

b. **Students on staff, curriculum as well as teaching-learning-evaluation and what is the response of the department to the same?**

The students give feedback on staff as well as teaching-learning-evaluation every semester for each subject and teacher. The Director and

head of department discuss the feedback with each faculty member. Through this discussion, the areas of improvement are conveyed to the faculty.

The institute does have a formal mechanism to obtain feedback from students on the curriculum. Such a feedback is obtained from the students at the end of every academic year. It is used to make modifications in the curriculum, if required.

c. Alumni and employers on the programmes and what is the response of the department to the same?

Alumni, employers and experts from industry express their views on curriculum enrichment in the IQAC meetings. They give their feedback on curriculum in their respective meetings. During the process of recruitment, the institute also obtains feedback on the existing curriculum and its enrichment from the employers. This feedback is analyzed and used to improve the subject contents of the program by the department.

31. List the distinguished alumni of the department (maximum 10)

- Sayali Kulkarni– Software Engineer, Google Research Lab
- Vinita Apte- Senior Manager, Information security & Risk Management , Discover Financial Services
- Reshma Kane- Assistant Vice President, Deutsche Bank, Greater New York City Area
- Niketa Malhotra– Founder, ImpactZen
- Aarti Mahajan-Ekatpure-Mainframe Developer at Euroclear, Belgium
- Sanika Deo Joshi– Senior Software Engineer, Wipro Technologies
- Easha Sapra- Manager, CapGemini
- Sana Auti- Principal Consultant , Cognizant Technology Solutions
- Sai Chitnis- Information and Risk Management Professional, KPMG India Private Limited.
- Amruta Bapat-IT Project Manager at Cummins Inc

32. Give details of student enrichment programmes (special lectures / workshops / seminar) with external experts.

The number of special lectures conducted in the last four years is 38. Details of some of them are listed below:

Subject/ topic	Resource Person	Affiliation
Gamification	Siddhesh Bhoje	Persistent Ltd
Natural Language Processing	Anoop Kunchukuttan	Researcher at IIT Bombay
Business Intelligence	Ms. Deepati Charankar	SAS R&D, Pune
Enterprise resource planning and SAP	Mr. Shishir Kale	Director-Solution Engineering at Orchestro
Design Pattern, Software	Mr. Kedar Tokekar	Owner of Sanzaru Education

Architecture		industrial training institute
Data Storage	Ms.Shweta Kulkarni	IBM
Distributed and Parallel Systems	Mr.L.M.Patnaik	IISC Banglore
Chasing your idea Dream, innovation	Parag Kulkarni	Eklat Ltd.
Java enterprise edition	Mr. M. Kulkarni	Tieto Technologies
Business Intelligence	Ms. Sudha Dhar	Cummins India Limited
Project management in Industry	Mr. Neeraj Joshi	HealthVertex LLC
Network Security	Priyanka Agrawal	IIT Delhi

33. List the teaching methods adopted by the faculty for different programmes.

The faculty members implement various methods of teaching, such as –

- Lectures
- Crosswords and Quizzes
- Discussion
- Problem solving
- Assignments
- Tutorials
- Role play
- Laboratory hands-on sessions
- Field visits
- Seminars
- Student projects
- Laboratory assignments
- Use of ICT

34. How does the department ensure that programme objectives are constantly met and learning outcomes monitored?

The program education objectives of the department include exposure to a variety of information technology domains, readiness of careers of the students for IT industries and development of problem-solving ability.

To ensure meeting of the program objectives, the syllabi of each subject is designed as per the objectives of the program. For this, the department also considers the latest trends and futuristic requirements of the IT industry.

The department ensures monitoring of the learning outcomes by mentoring faculty members to develop suitable evaluation strategies and to frame question papers for both, the In-Semester as well as the End-Semester examinations, as per the general quality guidelines and requirements of the

college. The department also considers feedback of the employers and the alumnae to ensure meeting of learning outcomes.

35. Highlight the participation of students and faculty in extension activities.

Students and faculty members participate in extension activities conducted under NSS and IEEE student chapter such as –

- Eye Check-up, Dental Check-up and Health Check-up camps
- Blood donation camps
- Tree plantation at Kalyan village and Rice plantation at Velha village
- Campus cleaning,
- Educating school children
- Organization of awareness programmes for Oral Health, Plastic Waste and E -Waste management, Self-Defense tactics, Health awareness.
- Mula-Mutha river cleaning,
- Assisting blind students for writing exams,
- Assisting senior citizens from old-age home.

36. Give details of “beyond syllabus scholarly activities” of the department.

The faculty engages students in various “beyond syllabus scholarly activities” such as–

- Guidance for participation in paper presentation and project competitions
- Arranging guest lectures by industry and academia experts
- Discussion on state-of-the-art research publications
- Organization of workshops on latest technology

37. State whether the programme/ department is accredited/ graded by other agencies. Give details.

The college is accredited by NAAC in the year 2002,2012.The department is accreditedby NBA in the year 2012. Currently the department is in the process of applying for NBA reaccreditation.

38. Detail any five Strengths, Weaknesses, Opportunities and Challenges (SWOC) of the department

Following are the strengths of the department:

1. High retention ratio
2. Highly motivated faculty members
3. Students are not only academically strong but also fetch awards in co-curricular and extra-curricular activities
4. Students are placed in multinational IT Companies.

Following are the weaknesses of the department:

1. Number of publications in reputed journals is less
2. Number of granted research projects is less
3. Consultancy activity is insignificant
4. Few faculty members with industry experience
5. Less percentage of faculty members with a Ph. D. degree

Following are the opportunities of the department:

1. With autonomous status of the college, the department has an opportunity to design the program curriculum as per the ever-changing needs of the IT industry.
2. To plan the academic calendar to accommodate internship for the students
3. To start post-graduate programs

Following are the challenges that the department will face in coming years:

1. To increase the number of publications in reputed journals
2. To obtain grants for research projects
3. To increase the number of student start ups
4. To increase the number of faculty members engaging in consultancy activities

39. Future plans of the department.

1. To facilitate establishment of entrepreneurial groups through EDC cell.
2. To promote the usage of digital contents among students for up-to-date knowledge.
3. To explore consultancy opportunities in various domains.
4. To inculcate research culture and increase research grants.

Evaluative Report Department of Mechanical Engineering

1. Name of the Department and its year of establishment:

- Department of Mechanical Engineering was established in 2007

2. Names of Programmes/Courses offered (UG, PG, M.Phil., Ph.D., Integrated Masters; Integrated Ph.D., etc.)

- The Programme currently offered is Bachelor of Engineering (Mechanical Engineering)/Bachelor of Technology (Mechanical Engineering)

3. Interdisciplinary courses and departments involved

Courses	Department
Fundamentals of Programming Language	Information Technology
Engineering Mechanics	Civil Engineering
Environmental Engineering	Civil Engineering
Electronics and Electrical Engineering	Electronics and Telecommunication Engineering Electrical Engineering
Soft Skill	Humanities

Second year onwards interdisciplinary courses on humanities and management are offered. Students can also opt for interdisciplinary courses under elective course category offered by other departments.

4. Annual/ semester/choice based credit system: Department offers semester based credit system

5. Participation of the department in the courses offered by other departments

Courses	Department
Basic of Mechanical Engineering	All First Year Students
Engineering Graphics	All First Year Students
Workshop Practice	All First Year Students

6. Number of teaching posts sanctioned and filled (Professors/Associate Professors/ Asst. Professors)

	Sanctioned	Filled
Professors	02	02
Associate Professors	05	02
Asst. Professors	15	12

7. Faculty profile with name, qualification, designation, specialization, (D.Sc./D.Litt. /Ph.D. / M. Phil. etc.,)

Name	Qualification	Designation	Specialization	Teaching Experience	Industry Experience	No. of Ph.D. students guided for the last 4 years
Dr. R. B. Ingle	Ph. D	Professor	Design Engg	28	3	6
Dr. A. K. Bewoor	Ph. D	Professor	Mechanical	13.5	-	4
Dr. G. S. Chandekar	Ph. D	Associate Professor	Mechanical	11	-	NIL
Dr. A. A. Bhosale	Ph. D	Associate Professor	Mechanical	12	2	NIL
S. P. Divekar	M.E	Assistant Professor	Metallurgy	24	1.2	NIL
P. S. Chaware	M.E	Assistant Professor	Mechanical	13	1	NIL
P. A. Bhore	M. Tech	Assistant Professor	Design Engg	10	-	NIL
R. A. Agavekar	M. Tech	Assistant Professor	Thermal and Fluids Engg	9	2	NIL
N. R. Patil	M. Tech	Assistant Professor	Design Engg	17	-	NIL
H. M. Shinde	M.E	Assistant Professor	Automotive	6	4	NIL
S. A. Kedar	M. Tech	Assistant Professor	Energy	6	1	NIL
A. P. Rajurkar	M.E Appeared	Assistant Professor	Heat Power	6	-	NIL
N. R. Kolhalkar	M. Tech	Assistant Professor	Mechatronics	7	1	NIL
Y. S. Munde	M. Tech	Assistant Professor	CAD-CAM	7	1	NIL
A. S. Shinde	M.E	Assistant Professor	Design Engg	9	1.5	NIL
M. A. Vahadne	M.E	Assistant Professor	Design Engg	7.5	-	NIL

8. Percentage of classes taken by temporary/Adhoc faculty:

Academic Year	Semester	No. of Adhoc Faculty	% of Classes Taken
2016-17	I	03	19.26
2016-17	II	00	00.00

9. Programme-wise Student Teacher Ratio : 13:1

10. Number of academic support staff (technical) and administrative staff: sanctioned and filled

	Sanctioned	Filled
Technical Support Staff	04	04
Administrative staff	06	06

11. Number of faculty with ongoing projects from a) national b) international funding agencies and c) Total grants received. Mention names of funding agencies and grants received project-wise.

Sr. No.	Faculty Name	Project Title	Name of Agency	Amount in Rs.	Duration
1	Dr. Ajit A. Bhosale	Feasibility Study For Shelf Life Prediction Machine For Fruits (Apple)	Department of Science and Technology - IDP	29,96,457/-	2015-17

12. Departmental projects funded by DST-FIST; DBT, ICSSR, etc.; total grants received-

- One Project is funded by Department of Science and Technology – IDP entitled “Feasibility Study For Shelf Life Prediction Machine For Fruits (Apple)” of Rs. 29,96,457/-

13. Research facility/centre with

- **state recognition**
- **national recognition**
- **international recognition**

Department provides good research equipments to students and faculties for their final year projects. The department has good research facility in area of Vibration, Finite Element Analysis, and Composite material

14. Publications:

* **Number of papers published in peer reviewed journals (national/international) :16+43=59**

* **Monographs - NIL**

* **Chapter(s) in Books - NIL**

* **Editing Books - NIL**

* **Books with ISBN numbers with details of publishers**

Author's Name: Dr. Anand K. Bewoor

Year of Publication	Title	ISBN No.	Publisher
Books published as International Edition			
April 2013	Integrating ISO 9001 Quality Management System with Six Sigma for Improving Productivity and Performance of SMEs	10: 3659360317	LAP Publication, Germany
May 2009	Metrology and Measurements	10: 0070140006 13: 9780070140004	Tata McGraw hill, New Delhi.
July 2009	Quality Control	9788126519071	John Wiley, New Delhi
June 2009	Manufacturing Processes Planning and System Engineering	10: 8177229966 13: 9788177229967	Dream Tech Publication, New Delhi.
Books published as National Edition			
Jan 2016	Industrial Engineering	978-81-8492-482-4	Tech Max Publication, Pune
Dec. 2015	Industrial Engineering and management	978-93-5077-443-4(ME149A)	Tech-Max Publication, Pune.
July 2014	Hydraulics and Pneumatics	938159505	Nirali Publication, Pune
Jan. 2007	Industrial Fluid Power” 3 rd Ed.	938159505	Nirali Publication, Pune.
September 2004	Production Planning and Control”	13: 9788176842723	Satya Publication, New Delhi.

* **Number listed in International Database (For e.g. Web of**

Science, Scopus, Humanities International Complete, Dare Database - International Social Sciences Directory, EBSCO host, etc.) –

(Conferences + journals) - 07+21=29

	Range	Average
Citation Index	1-4	2.75
SNIP	0.0666-1.907	0.633
SJR	0.105-1.512	0.446
Impact factor	0.16-3.807	1.453
h-index	2-144	38.533

15. Details of patents and income generated

Sr. No.	Faculty Name	Patent Title	Year of Application	File No.	Status
1	Dr. Ajit A. Bhosale	An Instrument For Predicting Shelf Life of Fruits And Method of Measurement Thereof	2014	3377/MUM/2014	Filed
2	Dr. Anand K. Bewoor	An improved exhaust gas heat recovery device	2010	315/MUM/2008	Filed
3	Dr. Anand K. Bewoor	Improved heater apparatus	2009	2199/MUM/2007	Filed

16. Areas of consultancy and income generated

Sr. No.	Consultancy assignment undertaken	Coordinator	Revenue generated (Rs.)	Duration/Date
1	IC Engine Lab- Testing of air filter	P. S. Chaware	6000/-	23/07/2016
2	IC Engine Lab- Testing of EGR system on VCR engine	P. S. Chaware	4000/-	31/07/2015
3	Metallurgy Lab – Testing of metal rods on UTM	S. P. Divekar	49,950/-	1 st April 2013 to 31 st March 2014
4	Metallurgy Lab – Testing of metal rods on UTM	S. P. Divekar	34,200/-	1 st April 2012 to 31 st March 2013
5	Metallurgy Lab – Testing of metal rods on UTM	S. P. Divekar	29,700/-	1 st April 2011 to 31 st March 2012

17. Faculty recharging strategies:

- The Faculty members are encouraged to attend FDP/STTP/Seminar/workshop/conferences in the upcoming area.
- Faculty members get up to Rs. 50,000 per conference paper towards the registration fees and travel expenses.
- To encourage quality research work by faculty members, various monetary incentives are in place. If the paper gets published in Scopus indexed journals, faculty gets reward of Rs.5000/- and if published in SCI indexed journal the reward is of Rs. 10,000/-.
- If the faculty member receives grant from funding agencies, then 5% of the grant amount is rewarded to the faculty member by the institute.
- Faculty members pursuing Ph. D. programs are granted with two years of fully paid study leave from the institute.

18. Student projects

- **Percentage of students who have done in-house projects including inter-departmental**

Academic Year	No of in-house Projects/Out of	Percentage
2012-13	11/19	58%
2013-14	15/22	68%
2014-15	15/20	75%
2015-16	18/24	75%
2016-17	12/19	63%

- **Percentage of students doing projects in collaboration with industries / institutes**

Academic Year	No of in-house Projects/Out of	Percentage
2012-13	8/19	42%
2013-14	7/22	32%
2014-15	5/20	25%
2015-16	6/24	25%
2016-17	7/19	37%

19. Awards / recognitions received at the national and international level by

- Faculty - Nil
- Doctoral /post doctoral fellows - Nil
- Students –

Students Name	Awards / recognitions
---------------	-----------------------

Zareen Cheema	Mars-One: Astronaut Selection Students On Ice - Antarctic Expedition European Space Camp, Andenes, Norway
	International Projects <ul style="list-style-type: none"> • TESLA: Design of Single Stage Orbital Vehicle • Recovering energy from waste water treatment • Design of a self-sustainable habitable Space Settlement in outer space
	International Scholarships <ul style="list-style-type: none"> • Harvard World MUN Scholarship • European Space Camp Scholarship

20. Seminars/Conferences/Workshops organized and the source of funding (national /international) with details of outstanding participants, if any.

Sr. No.	Name of FDP	Participants	Sponsored By	Year
1	Advances In Analysis, Measurement And Control Of Noise , Vibration And Harshness 10 th - 12 th June 2015	59	All India Council for Technical Education (AICTE), New Delhi	2014-15
2	Advances in Recent Trends in Industrial Hydraulics 8 th - 10 th Dec 2014	49	Savitribai Phule Pune University, Pune	2014-15

21. Student profile course-wise:

Name of the Course	Applications Received*	Selected		Pass percentage	
		Male	Female	Male	Female
Mechanical Engineering					
2015-16		NA	76	NA	80/88=90.9

* We do not receive direct application for admission as it is carried out through Centralized Admission Process (CAP) as per directive of DTE.

22. Diversity of Students

Name of the Course Mechanical Engineering	% of students from the College*	% of students from the state**	% of students from other state**	% of students from the Countries***
2016-17	NA	100.00	0.00	NA

*Cummins College of engineering is professional Engineering College; hence it is not attached to any junior college.

**The admission process is carried out through Centralized Admission Process (CAP) as per directive of DTE. As per norms minimum 65 % students are admitted from state and 35 % from outside state.

***There is no provision to admit students from other countries.

23. How many students have cleared Civil Services, Defense Services, NET, SLET, GATE and any other competitive examinations?

Every year many students appear for GATE examination but the result data for the same is not available.

24. Student progression

Student progression	Percentage against enrolled
UG to PG (Average of last four years)	20.83%
PG to M.Phil.	NA
PG to Ph.D.	NA
Ph.D. to Post-Doctoral	NA
Employed	
Campus selection (Average of last four years)	78.33%
• Other than campus recruitment	data not available
Entrepreneurs	data not available

25. Diversity of staff

Percentage of faculty who are graduates	
of the same parent university	50.00%
from other universities within the State	43.75%
from other universities outside the State	00.00%
from other universities outside country	06.25%

26. Number of faculty who were awarded Ph.D., D.Sc. and D.Litt. during the assessment period. – 01

- Dr. Ajit A. Bhosale was awarded PhD in Mechanical Engineering on 6th May 2014 for Savitribai Phule Pune University.

27. Present details about infrastructural facilities

- a) **Library** – Central library is having books and Journals of Mechanical Engineering subjects are as follow

Titles	940
Volumes	3161
Reference books	179
National Journal	11
International Journal	06
E books	56
E Journal	59
No. of books in department library	543

- b) **Internet facilities for staff and students:** Every computer on the campus has internet facility with 106 mbps bandwidth.
- c) **Total number of class rooms:** 3 classrooms are allotted to the department.
- d) **Class rooms with ICT facility:** All these classrooms are equipped with ICT facilities.
- e) **Students' laboratories:** The department has 11 student laboratories.
- f) **Research laboratories:** The department has a research laboratory.

28. Number of students of the department getting financial assistance from College.

- For AY 2015-16, four students got financial assistance from College.

29. Was any need assessment exercise undertaken before the development of new program(s)? If so, give the methodology.

- Department of Mechanical Engineering is going to offer PG Programme as M. Tech with specialization in Mechanical Engineering Design from AY 2017-18.
- In the current scenario at global level, there are very good opportunities for women mechanical engineers with PG qualifications.
- The need of program is analyzed by preparing Pugh matrix.

30. Does the department obtain feedback from

- a. **Faculty on curriculum as well as teaching-learning-evaluation?**

If yes, how does the department utilize it?

The department has mechanism to obtain feedback from faculty on curriculum. The external members of the BOS and the Academic Council of the institute give their feedback on curriculum. Depending on the need for specific subjects, the institute invites feedback from faculty from other institutes via email communication as well. The department makes use of the feedback for making modifications in the curriculum.

b. Students on staff, curriculum as well as teaching-learning-evaluation and what is the response of the department to the same?

- Feedback is collected from every student, for all the courses, in every semester in standard feedback format of 14 specific questions prepared at institute level. The feedback is taken in confidential manner.
- The feedback of individual faculty is analyzed for aspects like teaching methodology, communication skills, syllabus coverage, punctuality, effectiveness of the teaching learning process, helpfulness towards the students etc. in a meeting with the Director and the Head of the department. The faculty is given necessary instructions and guidelines for the improvement in the performance, if any.

c. Alumni and Employers on the programmes and what is the response of the department to the same

- Alumni and employers are members of BOS, academic council and IQAC of the institute. They give their feedback on curriculum. During the process of recruitment, the institute also obtains feedback on the existing curriculum and its enrichment from the employers.

31. List the distinguished alumni of the department (maximum 10)

- I. Abha Deshmukh – Director, Superb Engineers, Pune, Maharashtra.
- II. Kalpita Kaustubhan - Leadership Associate, Aditya Birla Group, Bengaluru, Karnataka.
- III. Uma Alwekar - Director, Chemlin Pump, Kolhapur, Maharashtra, India
- IV. Amruta Lakhe - Reporter and Features Writer, The Indian Express, Mumbai.
- V. Shivani Sharma - Second Lieutenant, Indian Army.

- VI. Mugdha Sane - System Integration Senior Engineer, Cummins Inc., USA

32. Give details of student enrichment programmes (special lectures / workshops / seminar) with external experts.

- Eighty guest lecturers were conducted over last four years by eminent speakers form industry and academia. The details of same for AY 2016-17 are as follows.

Sr. No.	Name of Subject	Class	Expert Faculty	Name of the Company
1	Energy Audit and Management	B E	Mr.A.Y.Mehendale	Enrich Consultant Pune
2	Computer Aided M/c Drawing	S E	Mr.Narendra Palande	PELF Infotech Pvt.Ltd.
3	CAD-CAM Automation	B E	Mr.Pankaj Pawar	ARK Infosolutions Pvt.Ltd.
4	Hydraulics & Pneumatics	T E	Mr.Abhishek Nerkar	Cummins India Limited
5	Heat Transfer	T E	Mr.Prasanna Umarani	Slimline Hydrotek
6	Operational Research	B E	Mr.Girish Pathak	Sr. Consultant Pune
7	Metrology & Quality Control	T E	Mr.Balaji Reddie	Sr. Consultant Pune

33. List the teaching methods adopted by the faculty for different programmes.

The faculty members implement various methods of teaching, such as –

- Lectures
- Crosswords and Quizzes
- Discussion
- Problem solving
- Assignments
- Tutorials
- Laboratory hands-on sessions
- Field visits
- Seminars
- Student projects
- Laboratory assignments
- Use of ICT

34. How does the department ensure that programme objectives are constantly met and learning outcomes monitored?

- The focus of mechanical Engineering programme is to prepare graduates for technological change and to equip them with self-

learning abilities for higher education and professional career in industries and research organisation.

- To ensure meeting of these objectives, the curricular structure of the department is made consistent with them by appropriately choosing different subjects and their syllabi. The department applies the knowledge dimension of the revised Bloom's Taxonomy to each of the subjects offered.
- The department defines cognition component's weightage for all subjects. To ensure learning outcomes are monitored, all question papers are framed as per cognition component's weightage.

35. Highlight the participation of students and faculty in extension activities.

- Students and faculty members participate in following extension activities
 - National Service Scheme (NSS): Blood donation camp, health awareness program for villagers, sessions on road safety and disaster management etc
 - Kirloskar Vasundhara's Clean College- Green College Completion
 - The Planeteeers: This club is started to spread awareness among students about rising environmental concerns, minimizing all type of wastages such as food, water, paper to Cardboards, cans and plastics.
 - ASME(American Society of Mechanical Engineers) Student Chapter- Technical quiz competitions, technical movie festival, paper presentation competition, "assemble it" competition, guest lectures, industrial visits etc
 - SAE(Society of Automotive Engineers)Student Chapter- Participation in National level competitions like BAJA, SUPRA

36. Give details of "beyond syllabus scholarly activities" of the department.

- Following are the scholarly activities conducted by the department beyond the syllabus
 - BAJA SAE INDIA: Students design, build and race off-road vehicles that can withstand the harshest elements of rough terrain. From last four years the students are participating in these national level competitions and got recognitions
 - SUPRA SAE INDIA – Student Formula is an exciting competition which presents the Engineering Students with a challenging task of designing, simulating and modelling a 'Formula Race Car'.
 - ROBOCON: Students design and fabricate their own robots to

perform specific task.

- ASME (American Society of Mechanical Engineers) Students' Chapter is formed in our institute to offer mutual support in study, learning, and professionalism. Various Activities are planned under this chapter, viz technical quiz competition, technical movies festival, paper presentation competition, guest lectures, industrial visits
- Department organizes workshops, seminars, paper presentation and project competitions for the students.

37. State whether the program/ department is accredited/ graded by other agencies. Give details.

- The college is accredited by NAAC in the year 2002, 2012.
- Department of Mechanical Engineering is accredited by NBA till 30th June 2019.

38. Detail any five Strengths, Weaknesses, Opportunities and Challenges (SWOC) of the department

● **Strengths:**

- Faculty members of the department are well aware of outcome based education and employ good teaching learning methods such as active and participative learning, problem and project based learning.
- Department has excellent infrastructure in terms of state of the art laboratories, ICT based classrooms.
- Department has good industry interaction and support for UG projects, internships and laboratory development.
- 25% of the faculty members are having PhD qualification.

● **Weaknesses:**

- Department has less number of publications in reputed journals.
- Department has less number of funded research projects.
- The consultancy activities in the department are less.

● **Opportunities:**

- Strong association with CIL, India for all departmental development activities
- To contribute towards improving gender diversity in Mechanical engineering
- To enhance activities in association with professional societies
- To increase internships in the autonomous framework

- **Challenges:**
 - To increase number of quality publications
 - To attract funding for research from agencies at the national and International level
 - To explore areas for consultancy and accordingly develop facilities for the same

39. Future plans of the department.

- To explore collaborations with academia and industries for collaborative research and curriculum development.
- To increase the number of funded research projects.
- To give students exposure to business aspects of technology in order to make them career ready.
- To start PhD research center in the department.
- To develop center of excellence in specific domain.

Post – Accreditation Initiatives

Since the completion of the 2nd cycle of assessment and accreditation, the college has undertaken definitive initiatives to nurture its overall growth and also for the infrastructure & the student development as well as for creating opportunities for the faculty members.

In 2015 the college applied to UGC and SPPU for conferment of autonomous status. UGC and SPPU have granted autonomous status to the college from the academic year 2016-17.

Ph. D. program has been started by the Electronics and Telecommunication Department in 2012.

Infrastructure Development:

1. To provide exposure to the usage of modern tools and techniques the college improved its laboratory-related infrastructure by procuring high end equipment with the help of industries.
2. To improve the logistics of the academic and administrative activities building space has been enhanced.
3. The college enhanced its library's reading hall capacity to accommodate a greater number of students.
4. Internet bandwidth has been upgraded to 106 mbps.
5. The college has developed software for examination conduction with the help of external agency.

Student Development:

1. The college has started organizing creativity aptitude test conducted by national level agency 'Aspiring Minds' without charging any fees to the students. Performance of every student is compared with the national average before commencement of second and third year, and also at the end of the respective academic years.
2. Considering the assessment reports of the above mentioned test, it was observed that most of the students have low scores in quantitative aptitude. To help students improve on this aspect, the college has also started training for quantitative aptitude.
3. The college runs a 40-hour 'Employability Enhancement Program' for third year students aimed at the development of soft skills.
4. The college has signed MOU's with different foreign universities and Industries for student development and higher education opportunities.

5. The college offers guidance to the students for their participation in prestigious national level technical competitions such as Robocon, Baja and NCAT.
6. Many student clubs for technical and other activities have been initiated.
7. The college has consciously started promoting filing of patents by students.

Opportunities for Faculty Members:

1. Faculty members can avail fully-paid Ph. D. study leave for two years.
2. The college has taken initiative in exploring sabbatical opportunities in industries and academia.
3. The college offers incentives for attracting funded research projects and also for publishing research in quality journals.
4. The college instituted faculty chairs for faculty mentoring.
5. The college has decided to implement Revised Bloom's Taxonomy in teaching-learning and in evaluation processes.



Cummins College of Engineering for Women

An Autonomous Institute affiliated to Savitribai Phule Pune University "शीलं परं भूषणम्"
KARVENAGAR, PUNE - 411052, INDIA.

(University Affiliation No. PU/PN/ENGG/087/1991, INDIA)
Approved by All India Council for Technical Education (AICTE)
Accredited by National Board of Accreditation (NBA) and
National Assessment & Accreditation Council (NAAC) at Grade-A



Ref.

Certificate of Compliance

This is to certify that Maharshi Karve Stree Shikshan Samstha's fulfills all norms.

1. Stipulated by the Savitribai Phule Pune University
2. All India Council for Technical Education
3. The affiliation and recognition is valid as on date.

In case the affiliation / recognition is conditional, then a detailed enclosure with regard to compliance of conditions by the institution will be sent.

It is noted that NAAC's accreditation, if granted, shall stand cancelled automatically, once the institution loses its University affiliation or Recognition by the Regulatory Council, as the case may be.

In case the undertaking submitted by the institution is found to be false then the accreditation given by NAAC is liable to be withdrawn. It is also agreeable that the undertaking given to NAAC will be displayed on the college website.

Dr. Madhuri Khambete
Director

MKSSS's Cummins College of Engineering for Women
Karvenagar, Pune.

Place: Pune

Date: March 22, 2017



Cummins College of Engineering for Women

An Autonomous Institute affiliated to Savitribai Phule Pune University "शीलं परं भूषणम्"
KARVENAGAR, PUNE-411052, INDIA.



(University Affiliation No. PU/PN/ENGG/087/1991, INDIA)
Approved by All India Council for Technical Education (AICTE)
Accredited by National Board of Accreditation (NBA) and
National Assessment & Accreditation Council (NAAC) at Grade-A



Ref.

Declaration Certificate

I certify that the data included in this Self-Study Report (SSR) are true to the best of my knowledge.

This SSR is prepared by the institution after internal discussions, and no part thereof has been outsourced.

I am aware that the Peer team will validate the information provided in this SSR during the peer team visit.

Dr. Madhuri Khambete
Director

MKSSS's Cummins College of Engineering for Women
Karvenagar, Pune.

Place: Pune

Date: March 22, 2017



Annexure - I

दूरध्वनी क्रमांक :

०२०-२५६९१२३३

२५६०१२५७

२५६०१२५८

२५६०१२५९

सावित्रीबाई फुले पुणे विद्यापीठ

(पूर्वीचे पुणे विद्यापीठ)



टेलिग्राफ : 'युनिपुणे'

फॅक्स : ०२०-२५६९१२३३

वेबसाइट : www.unipune.ac.in

इ-मेल : dyracademic@unipune.ac.in



15120062

शैक्षणिक विभाग
गणेशखिंड, पुणे-४११००७.

संदर्भ क्र.: CA/1021

दि.: 03/05/2016

प्रति,

मा. प्राचार्य,

महर्षी कर्वे स्त्री शिक्षण संस्था कमिन्स अभियांत्रिकी

महिला महाविद्यालय पता: कर्वेनगर, पुणे ता.: पुणे

(महानगर पालिका हद्द) जि: पुणे

विषय:- अटीच्या पूर्ततेच्या पडताळणी अहवालबाबत...

महोदय,

वरील विषयासंदर्भात विद्यापीठ अधिकार मंडळाने घेतलेल्या निर्णयानुसार आपणास कळविण्यात येते की, आपल्या महाविद्यालयास शैक्षणिक वर्ष २०१६-२०१७, या वर्षाकरिता खालील रकान्यात नमूद केलेल्या अभ्यासक्रमांच्या संलग्नीकरणाच्या नुतानिकरणास / नैसर्गिकवादीस अखिल भारतीय तंत्रशिक्षण परिषद, नवी दिल्ली व तंत्रशिक्षण संचालनालय, महाराष्ट्र शासन यांचे अभ्यासक्रम व प्रवेश क्षमता मान्यतेच्या अधीन राहून अटी पूर्ततेचा पडताळणी अहवाल स्वीकारण्यात आलेला आहे.

शैक्षणिक वर्ष २०१६-२०१७ करिता अटी पूर्तता अहवालाचे पत्र देत असताना स्थानिक चौकशी समितीच्या अहवालात नमूद केलेल्या ज्या शिक्षकांच्या तदर्थ नेमणुका करण्यात आलेल्या आहेत अशा सर्व शिक्षकांना शैक्षणिक वर्ष २०१६-२०१७ मध्ये कायम ठेवण्यात यावे. तसेच याबाबत विद्यापीठामार्फत वेळोवेळी तपासणी करण्यात येईल.

अनु. क्र.	अभ्यासक्रमाचा तपशील	विद्यार्थी संख्या	प्रथमपाळी/द्वितीय पाळी	संलग्नीकरणाचा प्रकार
1	एम ई (ई अँड टी सी) सिग्नल प्रोसेसिंग	18	2016-2017 : - वर्ष प्रथम व द्वितीय- Div No.1,,	नूतनीकरण
2	एम.ई. (इन्स्ट्रू.) बाइयोमॅडिकल इन्स्ट्रुमेंटेशन	18	2016-2017 : - वर्ष प्रथम व द्वितीय- Div No.1,,	नूतनीकरण
3	बी.ई. (इलेक्ट्रॉनिक्स अँड टेलिकम्यूनिकेशन)	60	2016-2017 : - वर्ष पहिले ते चौथे- दुसरी पाळी Div No. 3,,	नूतनीकरण
4	बी.ई. (कॉम्प्यूटर)	60	2016-2017 : - वर्ष पहिले ते चौथे- दुसरी पाळी Div No. 3,,	नूतनीकरण

कळावे,

Director

MKSSS's Cummins College of Engineering
For Women Karvenagar, Pune-411 052.

आपला,

MKSSS's Cummins College of Engg. for Women	
Inward No.	1250
Date	20-8-2016

1 Of 2

Gore Madam

for Rangak
03/05/16
उपकुलसचिव
शैक्षणिक विभाग

दूरध्वनी क्रमांक :

०२०-२५६९१२३३
२५६०१२५७
२५६०१२५८
२५६०१२५९



15120062

सावित्रीबाई फुले पुणे विद्यापीठ

(पूर्वीचे पुणे विद्यापीठ)



शैक्षणिक विभाग
गणेशखिंड, पुणे-४११००७.
टेलिग्राफ : 'युनिपुणे'
फॅक्स : ०२०-२५६९१२३३
वेबसाइट : www.unipune.ac.in
ई-मेल : dyracademic@unipune.ac.in

संदर्भ क्र.: CA/ ५४०

दि.: १९/०३/२०१६

प्रति,
मा. प्राचार्य,
महर्षी कर्वे स्त्री शिक्षण संस्था कमिन्स अभियांत्रिकी
महिला महाविद्यालय पत्ता: कर्वेनगर, पुणे ता.: पुणे
(महानगर पालिका हद्द) जि: पुणे

विषय:- शैक्षणिक वर्ष २०१६-२०१७, या वर्षाकरिता सलग्नीकरणाचे नूतनीकरण

महोदय,

वरील विषयासंदर्भात विद्यापीठ अधिकार मंडळाने घेतलेल्या निर्णयानुसार आपणास कळविण्यात येते की, आपल्या महाविद्यालयास शैक्षणिक वर्ष २०१६-२०१७, या वर्षाकरिता खालील रकान्यात नमूद केलेल्या अभ्यासक्रमांच्या सलग्नीकरणाच्या नूतनीकरणास / नैसर्गिकवाढीस अखिल भारतीय तंत्रशिक्षण परिषद, नवी दिल्ली व तंत्रशिक्षण संचालनालय, महाराष्ट्र शासन यांचे अभ्यासक्रम व प्रवेश क्षमता मान्यतेच्या अधीन राहून तसेच अहवालातील अटी व शर्तीची पूर्तता विद्यापीठाचे हे पत्र निर्गमित झाल्याच्या तारखेपासून एक महिन्याच्या आत पूर्ण करण्याच्या अटीवर परवानगी देण्यात येत आहे .

प्रती वर्षी मा. संचालक तंत्रशिक्षण मुंबई यांना ज्या महाविद्यालयांनी संलग्नीकरणाच्या सर्व अटी पूर्ण केलेल्या आहेत व कोणत्याही अटी शिवाय ज्या महाविद्यालयांना विद्यापीठाने शैक्षणिक वर्ष २०१६-२०१७ साठी ज्या अभ्यासक्रमांना संलग्नीकरण देण्यात आलेले आहे , अशाच महाविद्यालयांची अभ्यासक्रम निहाय माहिती मा. संचालक तंत्रशिक्षण, मुंबई यांना सादर केली जाईल सबब सर्व महाविद्यालयांनी आपले पडताळणी अहवाल उपरोक्त नमूद कालावधी पूर्वी विद्यापीठात जमा होतील याची काळजी घ्यावी.

अनु. क्र.	अभ्यासक्रमाचा तपशील	विद्यार्थी संख्या	प्रथमपाळी/द्वितीय पाळी	संलग्नीकरणाचा प्रकार
1	एम ई (ई अँड टी सी) सिग्नल प्रोसेसिंग	18	2016-2017 : - वर्ष प्रथम व द्वितीय- Div No.1,,	नूतनीकरण
2	एम.ई. (इन्स्ट्र.) बाइयोमॅडिकल इन्स्ट्रुमेंटेशन	18	2016-2017 : - वर्ष प्रथम व द्वितीय- Div No.1,,	नूतनीकरण
3	बी.ई. (इलेक्ट्रॉनिक्स अँड टेलिकम्यूनिकेशन)	60	2016-2017 : - वर्ष पहिले ते चौथे- दुसरी पाळी Div No. 3,,	नूतनीकरण
4	बी.ई. (कॉम्प्यूटर)	60	2016-2017 : - वर्ष पहिले ते चौथे- दुसरी पाळी Div No. 3,,	नूतनीकरण

कळावे,

Director

MKSSSS's Cummins College of Engineering

For Women Karvenagar, Pune-411 052 Engg.

MKSSSS's Cummins College of Engineering
for Women

Inward No.

3003

Date

19-3-2016

आपला,

उपकुलसचिव

शैक्षणिक

सोबत : अहवाल

1 Of 2

3/14/2016 3:08:20 PM

University of Pune

Telephone Nos. :

020- 25691233
25601258
25601259
25601257



ACADEMIC SECTION
Ganeshkhind, PUNE-411007, INDIA

Telegraph : 'UNIPUNE'

Fax : 020-25698007

Webside : www.unipune.ac.in

e-mail : dyacademic@unipune.ac.in

Ref. No. : CA/474

Date : 5/2/2013

To
The Principal,
Maharshi Karve Stree Shikshan Samstha's,
Cummins College of Engineering For Women,
Karvenagar, Tal. Haveli,
Pune-411 052.

Sub : Permanent Affiliation to the courses under Engineering Faculty from the Academic year 2012-13.

Sir,

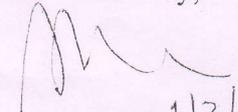
I am directed to inform you that the University Authorities have been pleased to grant **Permanent Affiliation** to the following courses as per Section 88 of the Maharashtra Universities Act 1994, from the Academic year 2012-13, subject to the terms & conditions laid down by the University of Pune, Government of Maharashtra, University Grants Commission, New Delhi or any other regulatory authority, from time to time.

ENGINEERING FACULTY

First to Fourth Year B. E.- Electronics & Telecommunication Engg, Computer Engg (Intake 120 each), Instrumentation & Control, Information Technology (Intake 60 each),

Encl : photocopy of the report

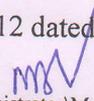
Yours Sincerely,


1/2/2013
for Registrar.

Copy forwarded with compliments for information & necessary action to:

1. The Secretary, Higher & Technical Education, Mantralaya, Mumbai-400 032.
2. The Administrative Officer, Higher Education Grant, Pune Division Office, Maharashtra State, 17, Dr. Ambedkar Road, Near Saint Mathew Marathi Church, Opp. Lal Mandir, First Floor, Pune- 411 001.
3. The Controller of Examination, University of Pune, Pune - 411 007
4. The Dy. Registrar, Development Section, University of Pune, Pune- 411 007.
5. The Dy. Registrar, Exam Section Engineering University of Pune, Pune- 7
6. The System analyst, Management Information Cell (M.I.C.), University of Pune, Pune- 411 007.

A 29 PA/ 78/2012 dated 18th Dec-, 2012


Director

MKSSS's Cummins College of Engineering
For Women Karvenagar, Pune-411 052.

C:\Documents and Settings\Administrator\My Documents\Sakhalkar\Permanant lett.docA

MKSSS's Cummins College of Engg.	
Inward No.	1947
Date	12/02/2013

Savitribai Phule Pune University

Telephone Nos. :

020 - 25691233

25601258

25601259

25601257



ACADEMIC SECTION

Ganeshkhind, Pune - 411007, INDIA

Telegraph : 'UNIPUNE'

Fax : 020-25691233

Website : www.unipune.ac.in

E-mail : dyracademic@unipune.ac.in

Ref. No. : CA/305

Date : 04/02/2015

To

The Principal,

Maharshi Karve Stree Shikshan Sanstha's

Cummins College of Engineering for Women,

Karvenagar, Pune 411 052

Sub : Permanent Affiliation to the courses under Engineering Faculty from the Academic year 2014-15.

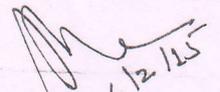
Sir,

I am directed to inform you that the University Authorities have been pleased to grant **Permanent Affiliation** to the following courses as per Section 88 of the Maharashtra Universities Act 1994, from the Academic year 2014-15, subject to the terms & conditions laid down by the Savitribai Phule Pune University, Government of Maharashtra, University Grants Commission, New Delhi or any other regulatory authority's, decision enforced from time to time.

ENGINEERING FACULTY :

Sr. No.	Course	Intake
1	B.E. First to Fourth Year - Mechanical Engineering	60

Yours Sincerely,


4/2/15
for Registrar.

Encl : photocopy of the report

Fwc
Gore Pradarn
S HOD Mech
MPL

HOD MKSS
Congratulatory
1052

P.T.O.

E:\Vaishnavi\2014-15\Academic action taken\Permanent Letter_30 Dec. 2014.docx

MKSS's Cummins College of Engg. for Women	
Inward No.	2683
Date	11/02/15


Director

MKSS's Cummins College of Engineering
For Women Karvenagar, Pune-411 052.

Annexure - II

Ph. 23236351, 23232701, 23237721
23234116, 23235733, 23232317
23236735, 23239437, 23239627

Extension No. 413 (CPP-I Colleges)
UGC Website: www.ugc.ac.in

F. No. 8-331/2013 (CPP-I/C)

The Registrar,
University of Pune
Ganeshkhind, Pune – 411 007
Maharashtra



ज्ञान-विज्ञान विमुक्तये
SPEED POST

विश्वविद्यालय अनुदान आयोग
बहादुरशाह जफर मार्ग
नई दिल्ली-110 002
UNIVERSITY GRANTS COMMISSION
BAHADURSHAH ZAFAR MARG
NEW DELHI-110 002

July, 2014

25 JUL 2014

Sub: Recognition of College under Section 2 (f) & 12 (B) of the UGC Act, 1956.

Sir,

I am directed to refer to the letter no. CCOEW/167/14-15 dated 02.05.2014 received from the Principal, Maharshi Karve Stree Shikshan Sanstha's Cummins College of Engineering for Women, Karvenagar, Pune – 411 052, Maharashtra on the above subject and to say that it is noted that the following College is **un-aided/self financed** and **permanently** affiliated to **University of Pune, Ganeshkhind**. I am further to say that the name of the following college has been included in the list of colleges prepared under Section 2 (f) & 12 (B) of the UGC Act, 1956 under the head '**Non-Government, self financed** Colleges teaching upto **Bachelor's Degree**':-

Name of the College	Year of Establishment	Remarks
Maharshi Karve Stree Shikshan Sanstha's Cummins College of Engineering for Women, Karvenagar, Pune – 411 052, Maharashtra.	1991	The College is now declared fit to receive Central assistance in terms of Rules framed under Section 12 (B) of the UGC Act, 1956. However, the College, being a self financing & unaided, would be eligible to receive UGC's support only in respect of teachers & students related schemes as per the decision of the Commission dated 8 th July 2011.

The Indemnity Bond and the other supporting documents submitted in respect of the above College have been accepted by the University Grants Commission.

Yours faithfully,

(Charan Dass)
Under Secretary

Copy to:-

1. The Principal, Maharshi Karve Stree Shikshan Sanstha's Cummins College of Engineering for Women, Karvenagar, Pune – 411 052, Maharashtra.
2. The Secretary, Government of India, Ministry of Human Resource Development, Department of Secondary & Higher Education, Shastri Bhawan, New Delhi - 110 001.
3. The Principal Secretary, Tech. & Higher Education Deptt., Government of Maharashtra, Mantralaya, Annexe Building, Mumbai – 400 032, (Maharashtra).
4. The Joint Secretary, UGC, Western Regional Office (WRO), Ganeshkhind, Poona – 411 007, (Maharashtra).
5. Publication Officer (UGC-Website), New Delhi.
6. Section Officer (FD-III Section), UGC, New Delhi.
7. Guard file.

Sunita
(Sunita Khanna)
Section Officer

Annexure - III



All India Council for Technical Education
(A Statutory body under Ministry of HRD, Govt. of India)

7th Floor, Chandralok Building, Janpath, New Delhi- 110 001
PHONE: 23724151/52/53/54/55/56/57 FAX: 011-23724183 www.aicte-india.org

F.No. Western/1-2809546845/2016/EOA

Date: 05-Apr-2016

To,

The Secretary,
Tech. & Higher Education Deptt.
Govt. of Maharashtra, Mantralaya,
Annexe Building, Mumbai-400032

Sub: Extension of approval for the academic year 2016-17

Ref: Application of the Institution for Extension of approval for the academic year 2016-17

Sir/Madam,

In terms of the provisions under the All India Council for Technical Education (Grant of Approvals for Technical Institutions) Regulations 2012 notified by the Council vide notification number F-No.37-3/Legal/2012 dated 27/09/2012 and norms standards, procedures and conditions prescribed by the Council from time to time, I am directed to convey the approval to

Regional Office	Western	Application Id	1-2809546845
Name of the Institute	MAHARSHI KARVE STREE SHIKSHAN SAMSTHA'S CUMMINS COLLEGE OF ENGINEERING FOR WOMEN	Permanent Id	1-5901008
Name of the Society/Trust	MAHARSHI KARVE SHIKSHAN SAMSTHA	Institute Address	KARVENAGAR, PUNE 411 052, PUNE, PUNE, Maharashtra, 411052
Institute Type	Unaided - Private	Society/Trust Address	KARVENAGAR,PUNE,PUNE,Maharashtra,411052

Opted for change from Women to Co-ed and Vice versa	No	Opted for change of name	No	Opted for change of site	No
Change from Women to Co-ed approved and Vice versa	Not Applicable	Change of name Approved	Not Applicable	Change of site Approved	Not Applicable

To conduct following courses with the intake indicated below for the academic year 2016-17

Application Id: 1-2809546845			Course	Full/Part Time	Affiliating Body	Intake 2015-16	Intake Approved for 2016-17	NRI Approval status	PIO / FN / Gulf quota Approval status	Foreign Collaboration/Twining Program Approval status
Program	Shift	Level								
ENGINEERING AND TECHNOLOGY	1st Shift	POST GRADUA	ELECTRONICS & TELE-COMMUNICATION	FULL TIME	University of Pune, Pune	18	18	NA	NA	NA



All India Council for Technical Education
(A Statutory body under Ministry of HRD, Govt. of India)

7th Floor, Chandralok Building, Janpath, New Delhi- 110 001
PHONE: 23724151/52/53/54/55/56/57 FAX: 011-23724183 www.aicte-india.org

GY		TE	ENGINEERING							
ENGINEERING AND TECHNOLOGY	1st Shift	POST GRADUATE	INSTRUMENTATION AND CONTROL ENGINEERING	FULL TIME	University of Pune, Pune	18	18	NA	NA	NA
ENGINEERING AND TECHNOLOGY	1st Shift	UNDER GRADUATE	COMPUTER ENGINEERING	FULL TIME	University of Pune, Pune	120	120	NA	NA	NA
ENGINEERING AND TECHNOLOGY	1st Shift	UNDER GRADUATE	ELECTRONICS & TELE-COMMUNICATION ENGINEERING	FULL TIME	University of Pune, Pune	120	120	NA	NA	NA
ENGINEERING AND TECHNOLOGY	1st Shift	UNDER GRADUATE	INFORMATION TECHNOLOGY	FULL TIME	University of Pune, Pune	60	60	NA	NA	NA
ENGINEERING AND TECHNOLOGY	1st Shift	UNDER GRADUATE	INSTRUMENTATION AND CONTROL ENGINEERING	FULL TIME	University of Pune, Pune	60	60	NA	NA	NA
ENGINEERING AND TECHNOLOGY	1st Shift	UNDER GRADUATE	MECHANICAL ENGINEERING	FULL TIME	University of Pune, Pune	60	60	NA	NA	NA
ENGINEERING AND TECHNOLOGY	2nd Shift	UNDER GRADUATE	COMPUTER ENGINEERING	FULL TIME	University of Pune, Pune	60	60	NA	NA	NA
ENGINEERING AND TECHNOLOGY	2nd Shift	UNDER GRADUATE	ELECTRONICS & TELE-COMMUNICATION ENGINEERING	FULL TIME	University of Pune, Pune	60	60	NA	NA	NA

The above mentioned approval is subject to the condition that MAHARSHI KARVE STREE SHIKSHAN SAMSTHA'S CUMMINS COLLEGE OF ENGINEERING FOR WOMEN shall follow and adhere to the Regulations, guidelines and directions issued by AICTE from time to time and the undertaking / affidavit given by the institution along with the application submitted by the institution on portal.

In case of any differences in content in this Computer generated Extension of Approval Letter, the content/information as approved by the Executive Council / General Council as available on the record of AICTE shall be final and binding.



All India Council for Technical Education
(A Statutory body under Ministry of HRD, Govt. of India)

7th Floor, Chandralok Building, Janpath, New Delhi- 110 001
PHONE: 23724151/52/53/54/55/56/57 FAX: 011-23724183 www.aicte-india.org

Strict compliance of Anti-Ragging Regulation:- Approval is subject to strict compliance of provisions made in AICTE Regulation notified vide F. No. 37-3/Legal/AICTE/2009 dated July 1, 2009 for Prevention and Prohibition of Ragging in Technical Institutions. In case Institution fails to take adequate steps to Prevent Ragging or fails to act in accordance with AICTE Regulation or fails to punish perpetrators or incidents of Ragging, it will be liable to take any action as defined under clause 9(4) of the said Regulation.

Note: Validity of the course details may be verified at www.aicte-india.org

Dr. Avinash S Pant
Vice - Chairman, AICTE

Copy to:

1. **The Regional Officer,**
All India Council for Technical Education
Industrial Assurance Building
2nd Floor, Nariman Road
Mumbai - 400 020, Maharashtra
2. **The Director Of Technical Education,**
Maharashtra
3. **The Registrar,**
University of Pune, Pune
4. **The Principal / Director,**
MAHARSHI KARVE STREE SHIKSHAN SAMSTHA'S CUMMINS COLLEGE OF ENGINEERING FOR WOMEN
KARVENAGAR, PUNE 411 052,
PUNE,PUNE,
Maharashtra,411052
5. **The Secretary / Chairman,**
MAHARSHI KARVE SHIKSHAN SAMSTHA
KARVENAGAR,
PUNE,PUNE,
Maharashtra,411052
6. **Guard File(AICTE)**

Annexure - IV



ज्ञान-विज्ञान विमुक्तये

डॉ. मंजू सिंह
संयुक्त सचिव

Dr. Manju Singh
Joint Secretary



सत्यमेव जयते

विश्वविद्यालय अनुदान आयोग
University Grants Commission

(मानव संसाधन विकास मंत्रालय, भारत सरकार)
(Ministry of Human Resource Development, Govt. of India)

बहादुरशाह ज़फ़र मार्ग, नई दिल्ली-110002

Bahadur Shah Zafar Marg, New Delhi-110002

दूरभाष Phone : कार्यालय Off : 011-23238676

Fax : 011-23232297 E-mail : manjusingh.ugc@nic.in

BY SPEED POST

No.F. 22-1/2016(AC)

March, 2016

The Registrar,
Savitribai Phule Pune University,
Ganeshkhind, Pune-411 007
(Maharashtra)

E 9 MAR 2016

Sub:- Conferment of Fresh Autonomous Status to Maharshi Karve Stree Shikshan Samstha's Cummins College of Enigneering for Women, Karvenagar, Pune-411 052 affiliated to Savitribai Phule Pune University, Pune

Sir/Madam,

This is with reference to the proposal submitted by Maharshi Karve Stree Shikshan Samstha's Cummins College of Enigneering for Women, Karvenagar, Pune-411 052 affiliated to Savitribai Phule Pune University, Pune under the UGC scheme for autonomous colleges.

On the basis of the report of the UGC Expert Committee and on the basis of the recommendations of the Standing Committee, the Commission at its meeting held on 29.02.2016 decided to grant autonomous status to Maharshi Karve Stree Shikshan Samstha's Cummins College of Enigneering for Women, Karvenagar, Pune-411 052 affiliated to Savitribai Phule Pune University, Pune under the UGC scheme for autonomous colleges for a period of six years w.e.f. 2016-2017 to 2021-2022.

Savitribai Phule Pune University, Pune-411 007 may now go ahead and issue necessary orders in this regard by endorsing a copy of the same to this office for our records. The admissible grant under this scheme will be released to the College as per its eligibility, according to the norms as laid down in the XII Plan Guidelines for Autonomous Colleges by The Joint Secretary, University Grants Commission, Western Regional Office, Ganeshkhind, Pune – 411007.

Yours faithfully,

(MANJU SINGH)

MKSSS's Cummins College of Engg. for Women	
Inward No.	2935
Date	12-3-2016

Cont.....

LMC
forming body



: 2 :

Copy to:-

1. The Principal Secretary,
Tech & Higher Education Deptt.
Govt. of Maharashtra,
Mantralaya Annexe Building,
Mumbai - 400 032.
2. The Joint Secretary,
University Grants Commission,
Western Regional Office, Ganeshkhind,
Pune - 411007,
3. The Principal,
Maharshi Karve Stree Shikshan Samstha's
Cummins College of Enigneering for Women,
Karvenagar, Pune-411 052

(A copy of the Expert Committee report is also enclosed for your information and guidance.)

4. Meeting Cell.
5. Concerned file
6. Guard File.

Manj Singh
(MANJU SINGH)



University Grants Commission
UGC
University Grants Commission

UNIVERSITY GRANTS COMMISSION
BAHADURSHAH ZAFAR MARG
NEW DELHI - 110 002

सावित्रीबाई फुले पुणे विद्यापीठ
(पूर्वीचे पुणे विद्यापीठ)

दूरध्वनी क्रमांक :
०२०-२५६९१२३३
२५६०१२५८
२५६०१२५९



शैक्षणिक विभाग
गणेशखिंड, पुणे-४११ ००७
टेलिग्राफ : 'युनिपुणे'
फॅक्स : ०२०-२५६९८००७
वेबसाइट : www.unipune.ac.in
इ-मेल : dvracademic@unipune.ac.in

संदर्भ क्र. : सीए/४४२

दिनांक : २३/०४/२०१६

प्रति,

मा. प्राचार्य,
महर्षी कर्वे स्त्री शिक्षण संस्थेचे,
कमिन्स कॉलेज ऑफ इंजिनिअरिंग फॉर वुमेन,
कर्वेनगर, पुणे ४११ ०५२

विषय : स्वायत्तता दर्जा प्रदान करण्याबाबत...
संदर्भ : विश्वविद्यालय अनुदान आयोग यांचे पत्र क्र. F.22-1/2016 (AC),
दि. ०९ मार्च २०१६

महोदय,

उपरोक्त विषय व संदर्भीय पत्रास अनुसरून विद्यापीठ अधिकार मंडळाने घेतलेल्या निर्णयानुसार आपणास कळविण्यात येते की, आपल्या महाविद्यालयास विद्यापीठाच्या स्वायत्ततेसंबंधीच्या सध्या अस्तित्वात असलेल्या स्वायत्तता दर्जा परिनियम एस-६०४ नुसार शैक्षणिक वर्ष २०१६-१७ ते २०२१-२२ या सहा वर्षांसाठी स्वायत्तता दर्जा प्रदान करण्यात येत आहे.

कळावे,

आपला,

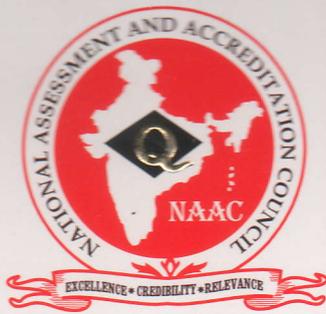
संचालक
(म.वि.वि.मं.)

२..

प्रत माहिती व योग्य त्या कार्यवाहीसाठी :

- १ मा. सचिव, उच्च व तंत्र शिक्षण महाराष्ट्र शासन, मंत्रालय विस्तार भवन, मुंबई - ४०००३२
- २ मा. संचालक, तंत्र शिक्षण, महाराष्ट्र शासन, पत्र पेटी क्र. १९६७, ३ महापालिका मार्ग, एल्फिन्स्टन टेक्निकल हायस्कूल बिल्डिंग, मुंबई - ४००००१
- ३ मा. सहसंचालक, तंत्र शिक्षण विभागीय कार्यालय, ४१२-ई, शिवाजीनगर, पुणे - ४११ ०१६
- ४ मा. कुलसचिव, सावित्रीबाई फुले पुणे विद्यापीठ, पुणे-४११ ००७
- ५ मा. परीक्षा नियंत्रक, परीक्षा विभाग, सावित्रीबाई फुले पुणे विद्यापीठ, पुणे-४११ ००७
- ६ मा. वित्त व लेखा अधिकारी, सावित्रीबाई फुले पुणे विद्यापीठ, पुणे-४११ ००७
- ७ मा. उपकुलसचिव, शैक्षणिक प्रवेश विभाग, सावित्रीबाई फुले पुणे विद्यापीठ, पुणे - ४११ ००७
- ८ मा. उपकुलसचिव, शैक्षणिक पात्रता, सावित्रीबाई फुले पुणे विद्यापीठ, पुणे - ४११ ००७
- ९ मा. सहा. कुलसचिव, परीक्षा विभाग, अभियांत्रिकी, आर्किटेक्चर, फार्मसी, सावित्रीबाई फुले पुणे विद्यापीठ, पुणे - ४११ ००७
- १० मा. सहा. कुलसचिव, नियोजन व विकास विभाग, सावित्रीबाई फुले पुणे विद्यापीठ, पुणे - ४११ ००७

Annexure - V



राष्ट्रीय मूल्यांकन एवं प्रत्यायन परिषद

विश्वविद्यालय अनुदान आयोग का स्वायत्त संस्थान

NATIONAL ASSESSMENT AND ACCREDITATION COUNCIL

An Autonomous Institution of the University Grants Commission

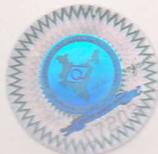
Certificate of Accreditation

*The Executive Committee of the
National Assessment and Accreditation Council
on the recommendation of the duly appointed
Peer Team is pleased to declare the
Maharshi Karve Stree Shikshan Samstha's
Cummins College of Engineering for Women
Karvenagar, Pune, affiliated to University of Pune, Maharashtra as
Accredited
with CGPA of 3.33 on four point scale
at A grade
valid up to September 14, 2017*

Date : September 15, 2012



HARSHAN
Director





राष्ट्रीय मूल्यांकन एवं प्रत्यायन परिषद्

विश्वविद्यालय अनुदान आयोग का स्वायत्त संस्थान

NATIONAL ASSESSMENT AND ACCREDITATION COUNCIL

An Autonomous Institution of the University Grants Commission

Certificate of Accreditation

*The Executive Committee of the
National Assessment and Accreditation Council
on the recommendation of the duly appointed
Peer Team is pleased to declare the
Maharshi Karve Stree Shikshan Samstha's
Cummins College of Engineering for Women
Karvenagar, Pune, affiliated to University of Pune, Maharashtra, as*

Accredited¹

at the B level².

(among the Affiliated / Constituent Colleges)

Date : May 15, 2002



*Impeimai
Director*

1. This certification is valid for a period of 5 (five) years with effect from the academic year 2001 - 2002.
2. An institutional score (%) in the range of 55-60 denotes C grade, 60-65 -C*grade, 65-70 - C**grade, 70-75 - B grade, 75-80 -B* grade, 80-85 - B** grade, 85-90 - A grade, 90-95 - A* grade, 95-100 - A** grade.

Annexure - VI

MAHARSHI KARVE STREE SHIKSHAN SAMSTHA'S
CUMMINS COLLEGE OF ENGINEERING FOR WOMEN,
KARVE NAGAR, PUNE 411052.

STATEMENT OF RECEIPTS & PAYMENTS FOR THE YEAR ENDED ON 31ST MARCH 2014

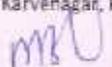
RECEIPTS	Sch.	Amount (Rs.)	PAYMENTS	Sch.	Amount (Rs.)
Opening Balances	A	12,100,918.55	Salaries & Wages	H	161,856,704.95
Fees	B	222,400,814.00	Professional Charges for Visiting Faculty	I	820,204.00
Income from other sources	C	5,889,128.34	Establishment expenses	J	53,023,974.25
			Other Expenses	K	8,935,852.47
			Direct expenses on students	L	3,671,745.06
			Departmental Expenses	M	4,483,545.55
			Repairs & Maintenance	N	10,909,778.50
Contribution for workshop/ events to the extent spent		1,504,945.47	Expenses for workshop		2,213,493.47
Deposits received from Students	D	1,465,000.00	Deposits Refunded to Students	D	1,268,000.00
Grants unspent received during the year	S		Grants transferred to utilization account	S	
Recurring		2,669,339.00	Recurring for expenses		65,507.00
Non recurring		809,374.00	Recurring for scholarships and exam expenses		2,508,130.00
			Non recurring		631,888.00
Grants transferred to utilization account	S		Grants utilized during the year	S	
Recurring grant for expenses (considered as income to the extent spent)		65,507.00	Recurring for scholarships and exam expenses		2,508,130.00
Recurring for scholarships and exam expenses		2,508,130.00	Fixed assets acquired out of non recurring grant		532,138.00
Non recurring		631,888.00			
Specific donation unspent received during the year	S		Specific donation transferred to utilization account	S	
Recurring and non recurring		10,190,725.00	Recurring		4,156,528.00
			Recurring donation for fees and events		1,353,150.00
			Non recurring		2,153,720.53
Specific donation transferred to utilization account	S		Specific donation utilized during the year	S	
Recurring (considered as income to the extent spent)		4,156,528.00	Recurring donation for fees and events		1,353,150.00
Recurring donation for fees and events		1,353,150.00	Fixed assets acquired out of specific donation		9,153,720.53
Non recurring		9,153,720.53			
Balance c/f		274,899,167.89	Balance c/f		278,598,400.29



Balance b/f		274,899,167.89	Balance b/f		278,599,400.29
(BM research award received		1,162,559.00	IBM research award utilized		1,798,775.10
Donation in Kind received		10,000.00	Computers received as Donation in kind		10,000.00
Donation in kind (Library)		11,382.00	Library Books received as donation in kind		11,382.00
Donation in kind (recurring)		35,000.00	Donation in kind (received for innovation 2014)		35,000.00
Sundry Credit Balances	E	36,149,971.50	Sundry Credit Balances	E	32,037,598.50
Sundry Debit Balances	F	1,819,211.00	Sundry Debit Balances	F	2,287,194.00
Indirect Receipts	G	41,891,682.42	Indirect Payments	G	77,892,846.34
<u>M.K.S.S.S.</u> CR. 103325930.00 Dr. 127891511.25		65,433,818.75			
<u>Sale/ Transfer / Write off / Loss due to fire.</u>			<u>Purchase of assets out of own funds</u>		
Dead Stock, Furniture, Utensils, Library Books etc.	O	2,472.00	Dead Stock, Furniture, Utensils, Library Books etc.	O	3,773,041.51
Equipments	P	706,356.50	Equipments	P	4,404,447.25
Computers	Q	455,549.28	Computers	Q	7,847,161.00
Capital Work in Progress	R	1,246,890.24	Capital Work in Progress	R	501,536.00
Transfer to Student's Aid Fund		240,000.00	CMD transferred to Student's Aid Fund		240,000.00
Excess depreciation written back		400.40	<u>Accumulated Depreciation on Asset sold / Written off</u>		585,038.65
			Pr/Loss on sale of Assets		329,680.28
			Closing Balances	A	13,711,360.06
TOTAL (Rs)		424,064,460.98	TOTAL (Rs)		424,064,460.98

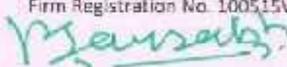
Subject to Our Separate Report
Examined & Found Correct

For MKSS's
Cummins College of Engg. For Women
Karvenagar, Pune 52.


Dr. M. B. Khambote
Principal

Date : 31st May, 2014
Place : Pune

For G. D. Apte & Co.
Chartered Accountants
Firm Registration No. 100515W


Saurabh S. Peshwe
Partner
Membership No. 121546
Date : 31st May, 2014
Place : Pune



MAHARSHI KARVE STREE SHIKSHAN SAMSTHA'S
CUMMINS COLLEGE OF ENGINEERING FOR WOMEN,
KARVE NAGAR, PUNE 411052.

STATEMENT OF RECEIPTS & PAYMENTS FOR THE YEAR ENDED ON 31ST MARCH 2015

RECEIPTS	Sch.	Amount (Rs.)	PAYMENTS	Sch.	Amount (Rs.)
Opening Balances	A	13,711,360.06	Salaries & Wages	H	179,398,342.00
Fees	B	253,140,370.00	Professional Charges for Visiting Faculty	I	1,196,900.00
Income from other sources	C	3,332,506.32	Establishment expenses	J	63,585,582.61
Grant recognised as income to the extent spent		181,205.00	Other Expenses	K	8,891,360.53
Specific donation recognised as income to the extent spent		5,241,344.47			
Contribution towards workshop and events recognised as income to the extent spent		274,830.93	Direct expenses on students	L	3,701,801.60
Assets Written Off			Departmental Expenses	M	5,209,300.52
Loss by theft			Repairs & Maintenance	N	11,812,730.03
Loss on sale of Assets			Fees Written Off		121,840.00
Deposits received from Students	D	2,987,000.00	Deposits Refunded to Students	D	2,810,000.00
Grants unspent received during the year			Grants transferred to utilization account	S	
Recurring	S	2,648,991.00	Recurring for expenses		248,339.00
Non recurring		-	Recurring for scholarships and exam expenses		2,721,881.00
Grants transferred to utilization account	S		Non recurring		-
Recurring grant for expenses (considered as income to the extent spent)		248,339.00	Grants utilized during the year	S	
Recurring for scholarships and exam expenses		2,721,881.00	Recurring (considered as income to the extent spent)		248,339.00
Non recurring		-	Recurring for scholarships and exam expenses		2,721,881.00
Specific donation unspent received during the year	S	6,314,425.00	Fixed assets acquired out of non recurring grant		-
Recurring and non recurring			Specific donation transferred to utilization account	S	
GRANT-IN-AIDS unspent received during the year		34,366.00	Recurring		5,216,684.47
GRANT-IN-AIDS transferred to utilization account			Recurring donation for fees and events		893,445.00
Recurring		41,650.00	Non recurring		380,200.00
Non recurring		745,594.00	GRANT-IN-AIDS transferred to utilization account		
Specific donation transferred to utilization account	S	5,216,684.47	Recurring		41,650.00
Recurring (considered as income to the extent spent)			Non recurring		745,594.00
Recurring donation for fees and events		893,445.00	GRANT-IN-AIDS utilized during the year		
Non recurring		380,200.00	Recurring		41,650.00
Balance c/f		298,114,192.25	Specific donation utilized during the year	S	
			Recurring donation for fees and events		5,216,684.47
			Fixed assets acquired out of specific donation		893,445.00
			Balance c/f		296,097,650.23



RECEIPTS	Sch.	Amount (Rs.)	PAYMENTS	Sch.	Amount (Rs.)
Balance b/f		298,114,192.25	Balance b/f		296,097,650.23
Donation in Kind received		307,100.00			
Donation in kind (Library)		12,965.00			
Sundry Credit Balances	E	75,812,982.00	Sundry Credit Balances	E	76,093,814.50
Sundry Debit Balances	F	49,512,730.00	Sundry Debit Balances	F	61,572,519.25
Indirect Receipts	G	7,428,928.50	Indirect Payments	G	7,480,886.03
<u>Sale/ Transfer / Write off /</u>			<u>Purchase of assets out of own</u>		
<u>Loss due to fire</u>			<u>funds</u>		
Dead Stock, Furniture, Utensils, Library Books etc.	O	-	Dead Stock, Furniture, Utensils, Library Books etc.	O	5,319,044.95
Equipments	P	1,038,187.90	Equipments	P	8,629,130.90
Computers	Q	9,553,631.28	Computers	Q	6,641,730.76
Capital Work in Progress	R	241,190.50	Capital Work in Progress	R	336,153.75
Transfer to Student's Aid Fund		330,000.00	CMD transferred to Student's Aid Fund		32,000.00
Depreciation on BCUD Grant Written-back		4,680.00	Accumulated Depreciation on		
<u>M.K.S.S.S.</u>			Asset sold / Written off		3,897,873.11
Debit Rs. 114142909			Loss by theft		108,911.00
Credit Rs. 159457207		45,314,298.00	Asset Written Off		12,255.50
BCUD Grant - Pune Univ.			Pr/Loss on sale of Assets		2,519,317.41
			Closing Balances	A	18,929,598.04
TOTAL (Rs)		487,670,885.43	TOTAL (Rs)		487,670,885.43

Subject to Our Separate Report
Examined & Found Correct

For MKSS's
Cummins College of Engg. For Women
Karvenagar, Pune 52.

Dr. M. B. Khambete
Principal

Date : May 30, 2015
Place : Pune



For G. D. Apte & Co.
Chartered Accountants
Firm Registration No. 100515W

Prakash P. Kulkarni
Partner
Membership No. 35217
Date : May 30, 2015
Place : Pune



MAHARSHI KARVE STREET SHIKSHAN SAMITHI'S
CUMMINS COLLEGE OF ENGINEERING FOR WOMEN,
KARVE NAGAR, PUNE 411052.

STATEMENT OF RECEIPTS & PAYMENTS FOR THE YEAR ENDED ON 31ST MARCH 2018

RECEIPTS	Sch.	Amount (Rs.)	PAYMENTS	Sch.	Amount (Rs.)
Opening balances	A	19,929,050.04	Salaries & Wages	H	2,14,883,098.02
Fees	B	277,625,283.00	Professional Charges for Visiting Faculty	I	2,039,332.00
Fees Received from opening		67,669,165.00	Fees Receivable during the year	J	67,378,980.00
Income from other sources	C	2,745,352.50	Establishment expenses	J	58,868,971.07
Grant recognised as income to the extent spent		176,234.00	Other Expenses	K	18,674,347.64
Specific donation recognised as income to the extent spent		6,713,577.78	Specific Donation Fund on assets Written off		54,481.00
Contribution towards workshop and events recognised as income to the extent spent		241,737.00	Direct expenses on students	L	5,853,444.50
Interest Received		25,738.88	Departmental Expenses	M	4,142,582.29
Profit on Sale of Assets		1,011,051.00	Repairs & Maintenance	N	14,503,521.84
Donation in kind (Library)		19,901.00	Donation in Kind Utilization(LIB)		19,901.00
Donation in Kind For N. R		2,436,262.00	Donation in Kind For N. R Utilization		3,16,700.00
Interest on Grant		19,398.00	Deposits Refunded to Students Received - 2938000 Paid - 3091000	D	153,000.00
Grants unspent received during the year			Unutilised grant refunded		545,201.00
Recurring	S	3,281,273.00	Grants transferred to utilization account	S	
Non recurring		1,048,297.00	Recurring for expenses	S	264,531.50
Grants transferred to utilization account			Recurring for scholarships and exam expenses		3,361,092.00
Recurring grant for expenses (considered as income to the extent spent)	S	264,531.50	Non-recurring	S	385,000.00
Recurring for scholarships and exam expenses		3,361,092.00	Grants utilized during the year		
Non recurring		385,000.00	Recurring (considered as income to the extent spent)	S	264,531.50
Specific donation unspent received during the year			Recurring for scholarships and exam expenses	S	3,361,092.00
Recurring and non recurring	S	18,239,891.53	Fixed assets acquired out of non recurring grant	S	385,000.00
			Central Govt Grant Utilised (Depreciation on asset purchased out of grant)		667,793.00
			Central Govt Grant Utilised (Adjustment of earlier year)		18,000.00
			Specific donation transferred to utilization account		
			Recurring	S	6,788,577.78
			Recurring donation for fees and events	S	1,201,209.00
			Non recurring	S	6,635,552.00
			Equipments received from DNCA purchased out of Specific Donation		295,900.00
			Specific Donation Utilisation(Previous year rectification effect)		6,011,012.00
			Specific Donation Utilisation(Depreciation for the year)		4,931,022.00
Specific donation transferred to utilization account			Specific donation utilized during the year	S	
Recurring (considered as income to the extent spent)	S	6,788,577.78	Recurring donation for fees and events		9,989,866.78
Recurring donation for fees and events		1,201,209.00	Fixed assets acquired out of specific donation		6,635,552.00
Non recurring		6,635,552.00			
Balance c/f		422,857,642.81	Balance c/f		438,711,072.02



RECEIPTS		Sch.	Amount (Rs.)	PAYMENTS		Sch.	Amount (Rs.)
Balance b/f			422,857,642.81	Balance L/f			438,711,972.07
Sundry Credit Balances	E		110,882,728.63	Sundry Credit Balances	E		92,570,837.80
Sundry Debit Balances	F		14,989,577.91	Sundry Debit Balances	F		14,481,051.91
Indirect Receipts	G		36,792,144.50	Indirect Payments	G		35,683,844.50
<u>Sale/ Transfer / Write off /</u> <u>Loss due to fire</u>				<u>Purchase of assets out of own</u> <u>funds</u>			
Dead Stock, Furniture, Utensils, Library Books etc.	O		739.03	Dead Stock, Furniture, Utensils, Library Books etc.	O		6,127,056.89
Equipments	P		28,111,109.00	Equipments	P		18,953,163.35
Computers	Q		15,896,004.00	Computers	Q		28,275,440.00
CWIP capitalised	R		367,143.05	Capital Work in Progress	R		91,038.55
Deposits from Others Received - 3074730	T		2,910,960.00	Accumulated Depreciation on Fixed Assets			8,268,234.00
Paid - 193770				Depreciation on own Asset			4,716,759.00
Central Gov Grant Fully spent Rectification Effect of Earlier Years)			2,826,839.00	Depreciation on Specific donation/ DK Asset			2,826,889.00
Depreciation Fund				Depreciation on Grant Asset			14,181,037.00
Depreciation on own Asset			27,969,180.65	Depreciation Account (for the year)			5,832,044.00
Depreciation on Specific donation/ DK Asset			11,289,790.00	DEPRECIATION ARREARS			18,713.00
Depreciation on Grant Asset			3,570,368.00	Amounts written off			6,003,657.70
Amounts written back			292,871.80	Amounts written off			1,723,437.83
				M.K.S.S.S.			
				Credit - 170488147.15			
				Debit - 176471804.85			
				Closing Balances	A		
TOTAL (Rs)			678,466,106.55	TOTAL (Rs)			678,466,106.55

G. D. Apte & Co.

Subject to Our Separate Report
Examined & Found Correct

For MKSSS's
Cummins College of Engg. For Women
Karvenagar, Pune 52.

Dr. M. B. Khambete
Principal

Date: June 27, 2015
Place: Pune



For G. D. Apte & Co.
Chartered Accountants
Firm Registration No. 100515W

Saurabh S. Peshwe
Partner
Membership No. 121516
Date: June 27, 2015
Place: Pune

