



Progressive Education Society's,
Modern College of Arts, Science and Commerce,
Shivajinagar, Pune-411 005, Maharashtra

The Annual Quality Assurance Report (AQAR) of Internal Quality Assurance Cell



2014-2015

www.moderncollegepune.com

The Annual Quality Assurance Report (AQAR) of the IQAC

(July 1, 2014 to June 30, 2015)

Part – A

1. Details of the Institution

1.1 Name of the Institution	P.E.Society's Modern College of Arts, Science and Commerce
1.2 Address Line 1	Shivajinagar
Address Line 2	--
City/Town	Pune
State	Maharashtra
Pin Code	411005
Institution e-mail address	principal@moderncollegepune.com
Contact Nos.	(020)25535927
Name of the Head of the Institution:	Dr. Rajendra S. Zunjarrao
Tel. No. with STD Code:	(020)25535102
Mobile:	+919922007302
Name of the IQAC Co-ordinator:	Prof. S.R.Chaudhari
Mobile:	+919822682812

IQAC e-mail address:

iqacmodern@gmail.com

1.3 NAAC Track ID (For ex. MHC0GN 18879) Yet to be assigned

1.4 NAAC Executive Committee No. & Date:

(For Example EC/32/A&A/143 dated 3-5-2004.

This EC no. is available in the right corner- bottom of your institution's Accreditation Certificate)

EC/52/RAR/04 dated 28 March 2010

1.5 Website address:

www.moderncollegepune.com

Web-link of the AQAR:

<http://www.moderncollegepune.com/administration/internal-quality-assurance-cell-iqac/>

1.6 Accreditation Details

Sr. No.	Cycle	Grade	CGPA	Year of Accreditation	Validity Period
1	1 st Cycle	B++	-	21/03/2003	-
2	2 nd Cycle	A	3.15	28/03/2010	28/03/2015
3	3 rd Cycle	-	-	-	-
4	4 th Cycle	-	-	-	-

1.7 Date of Establishment of IQAC :

11/02/2004

1.8 AQAR for the year (for example 2010-11)

2014-15

1.9 Details of the previous year's AQAR submitted to NAAC after the latest Assessment and Accreditation by NAAC ((for example AQAR 2010-11 submitted to NAAC on 12-10-2011)

- i. AQAR: 2010-2011 submitted on 27/08/2011
- ii. AQAR: 2011-2012 submitted on 29/09/2012
- iii. AQAR: 2012-2013 submitted on 20/08/2013
- iv. AQAR : 2013-2014 submitted on 28/01/2016

1.10 Institutional Status

University State Central Deemed Private

Affiliated College Yes No

Constituent College Yes No

Autonomous college of UGC Yes No

Regulatory Agency approved Institution Yes No

(eg. AICTE, BCI, MCI, PCI, NCI)

Type of Institution Co-education Men Women

Urban Rural Tribal

Financial Status Grant-in-aid UGC 2(f) UGC 12B

Grant-in-aid + Self Financing Totally Self-financing

1.11 Type of Faculty/Programme

Arts Science Commerce Law PEI (Phys Edu)

TEI (Edu) Engineering Health Science Management

Others (Specify)

NIL

1.12 Name of the Affiliating University (*for the Colleges*)

Savitribai Phule Pune University
(Formerly University of Pune)

1.13 Special status conferred by Central/ State Government-- UGC/CSIR/DST/DBT/ICMR etc

Autonomy by State/Central Govt. / University No

University with Potential for Excellence NA UGC-CPE

DST Star Scheme	<input type="checkbox" value="√"/>	UGC-CE	<input type="checkbox"/>
UGC-Special Assistance Programme	<input type="checkbox"/>	DST-FIST	<input type="checkbox" value="√"/>
UGC-Innovative PG programmes	<input type="checkbox"/>	Any other (<i>Specify</i>)	<input type="checkbox"/>
UGC-COP Programmes	<input type="checkbox"/>		

2. IQAC Composition and Activities

2.1 No. of Teachers	<input type="text" value="15"/>
2.2 No. of Administrative/Technical staff	<input type="text" value="02"/>
2.3 No. of students	<input type="text" value="-"/>
2.4 No. of Management representatives	<input type="text" value="02"/>
2.5 No. of Alumni	<input type="text" value="-"/>
2.6 No. of any other stakeholder and community representatives	<input type="text" value="01"/>
2.7 No. of Employers/ Industrialists	<input type="text" value="01"/>
2.8 No. of other External Experts	<input type="text" value="NIL"/>
2.9 Total No. of members	<input type="text" value="23"/>
2.10 No. of IQAC meetings held	:4

2.11 No. of meetings with various stakeholders:	No.	<input type="text" value="1"/>	Faculty	<input type="text" value="4"/>
	Non-Teaching Staff	<input type="text" value="-"/>	Students	
	Alumni	<input type="text" value="1"/>	Others	<input type="text" value="-"/>
2.12 Has IQAC received any funding from UGC during the year?	Yes	<input type="checkbox"/>	No	<input type="checkbox" value="√"/>
If yes, mention the amount	<input type="text" value="NIL"/>	<input type="checkbox"/>	<input type="checkbox" value="√"/>	

2.13 Seminars and Conferences (only quality related)

(i) No. of Seminars/Conferences/ Workshops/Symposia organized by the IQAC

Total Nos. International National State Institution Level

(ii) Themes

1. Lecture of Dr. Rajendra Singh (Waterman of India) on Water Conservation on 13 February 2015.
2. Lecture delivered by Padmavibhushan Dr. Vijay Bhatkar (video conferencing)

2.14 Significant Activities and contributions made by IQAC

- IQAC has played a significant role in enhancing the quality of education in the college.
- IQAC analyses teaching – learning feedback from teachers, students and parents.
- Decisions for improving the academic process, the infrastructure, library facilities, and laboratory up-gradations were recommended to Local Managing Committee for their proper implementation.
- IQAC implemented the process of maintaining teaching plan (lecture plans) by each teacher, weekly worksheets and teacher’s diary to continuously monitor and improve teaching learning process.
- Time tables for practical and theory classes are planned in three sessions by considering the students’ convenience especially from the communication point of view.
- IQAC has insisted and encouraged the use of ICT for enhancing the quality of teaching-learning process.
- IQAC has organized lecture series, quality enhancement workshops, seminars, and conferences for facilitating interaction with the experts in respective fields.
- IQAC has also contributed in the field of Examination reforms.

2.15 Plan of Action by IQAC/Outcome

The plan of action* towards Quality Enhancement chalked out by the IQAC in the beginning of the year and the outcome achieved by the end of the year is stated below:

Sr.No	Plan of Action	Outcome /Achievements
1.	Curricular Aspects: Suggestions for addition of new courses to keep pace with the changing needs of academia and industry	One new diploma course in Fashion Technology was started.
2.	Enhancing Quality of Teaching and Learning	<ul style="list-style-type: none"> • Implementation of Teachers Diary that contains detailed information regarding the teaching plan, execution, and recording of the day wise activities of teacher. • International conference on Innovations in Teaching learning and evaluations was proposed to be organized. • Successful organization of International conference “Application of Advanced technology for enhancing quality of science education” on 26-27 Feb 2015
3.	Preparation of SSR , SWAC analysis	Seven different criteria wise subcommittees were formed in order to prepare the SSR.
4.	Vision 20-20 document	Vision 20-20 document of the college was successfully prepared.
5.	Admission Process	Implementation of Online Admission process for all courses
6.	Enhancing results	Brainstorming meetings of teachers teaching F.Y.B.A., B.Com. and B.Sc. were organized and preparation strategies were drawn for enhancing the results.
7.	Digitization of office records	IQAC proposed digitization of office records and the process is initiated.
8.	Students supports	International Students Cell (ISC) was formed for better services to International Students
9.	More ICT facilities in classes	In 2013-14 20 classrooms were ICT enabled and in 2014-15 40 classrooms and laboratories are ICT enabled.
10.	ISO Certification to be done	ISO 9001:2008 certification process by BSI is successfully completed.
11.	Green Campus Initiative	The college has completed Green Audit, Biodiversity Audit and solar panels have been installed in the college.
12.	Enhancing Value based education programme	Value based education programmes/activities are organized by NSS / NCC unit. Formation of Value based committee in the college. Organization of various programmes on value education by value based Committee*
13.	To enhance extension activities	Rice Plantation move Visit to Mukangan by Psychology Department

** Academic calendar Part A Annexure I.*

*** List of value education programmes Part A Annexure II.**

2.15 Whether the AQAR was placed in statutory body Yes No

Management Syndicate Any other body

Provide the details of the action taken

- LMC approved to establish Centre for Teaching Learning and Evaluation.
- LMC approved to establish Centre for Promotion of Research.
- LMC suggested going for academic and administrative audit.

Part – B

Criterion – I

1. Curricular Aspects

1.1 Details about Academic Programmes

Level of the Programme	Number of existing Programmes	Number of programmes added during the year	Number of self-financing programmes	Number of value added / Career Oriented programmes
Ph.D.	6	1	7	-
PG	16	01	17	-
UG	22	-	4	-
PG Diploma	1 Banking and Finance	-	-	-
Advanced Diploma	-	-	-	-
Diploma	-	-	-	-
Certificate (skill Development Courses)*	-	-	28 programs on autonomous and self financed basis have been conducted and certificates have been awarded by the college.	21
Others	-	-	-	-
Total	44	1	41	21

Interdisciplinary	-	1. Biostatistics 2. Animal Tissue Culture 3. Plant Tissue Culture 4. Training course on “ <i>Modi Script</i> ”
Innovative	Fashion Technology	1. Training course on Chemical Based Product preparation 2. Training course on Herbal Product Preparation

* *Skill Development Courses Part B Annexure I (Criteria I).*

1.2 (i) Flexibility of the Curriculum: CBCS/Core/Elective option / Open options

With effect from academic year 2013-14, the SPPU, Pune has implemented the Choice Based Credit System to all P.G. courses. The System allows the students to opt for certain elective subjects in the second year of the course. Additional Ten credit points are compulsory along with the main subject courses. They are: Human Rights (2 Credits), Introduction to Cyber security and Information security (4 Credits) and Skill Development (4 Credits).

(ii) Pattern of programmes:

Pattern	Number of programmes
Semester	11 (B.Sc.)+ 1 B.B.A. and B.B.A.-C.A. (B.C.A.)
Trimester	-
Annual	11 (B.A.) + 1 B.Com. PGDBF

1.3 Feedback from stakeholders* Alumni Parents Employers Students
(On all aspects)

Mode of feedback : Online Manual Co-operating schools (for PEI)

* **Feedback Part B Annexure II (Criteria I).**

1.4 Whether there is any revision/update of regulation or syllabi, if yes, mention their salient aspects.

- Syllabus of First Year Undergraduate courses was revised and updated by SPPU (formerly University of Pune) from June 2013. The courses were revised by the University keeping in mind the changing trends and patterns in education and to keep pace with the global change in research and development.
- Choice based credit system was introduced for Masters Courses.

1.5 Any new Department/Centre introduced during the year. If yes, give details.

Yes.

Postgraduate Research Center in Microbiology.

Criterion – II

2. Teaching, Learning and Evaluation

2.1 Total No. of permanent faculty

Total	Asst. Professors	Associate Professors	Professors	Others
130	100	17	NIL	3

2.2 No. of permanent faculty with Ph.D.

37

2.3 No. of Faculty Positions Recruited (R) and Vacant (V) during the year

Asst. Professors		Associate Professors		Professors		Others		Total	
R	V	R	V	R	V	R	V	R	V
-	36	-		-		-	-	-	36

2.4 No. of Guest and Visiting faculty and Temporary faculty

Guest Lectures	Visiting Faculty	Temp. Faculty
13	27	32

2.5 Faculty participation in conferences and symposia:

No. of Faculty	International level	National level	State level
Attended	11	10	23
Presented papers	15	14	8
Resource Persons	3	5	33

2.6 Innovative processes adopted by the institution in Teaching and Learning:

- Efforts are taken to adopt advanced technology in teaching certain topics with the help of computer simulations, demonstration in class with LCD and Laptop, use of virtual classes and virtual laboratories.
- Innovative pedagogical method called cooperative learning is adopted by teacher, Dr. Joag S.D., Department of Chemistry in classroom teaching. This resulted improvement in the performance of the students in internal examination.
- Many departments use the John Dewey's Project Based Learning Approach based on pragmatic teaching and learning so that students learn by doing projects based on that particular topics.

2.7 Total No. of actual teaching days during this academic year

240

2.8 Examination/ Evaluation Reforms initiated by the Institution (for example: Open Book Examination, Bar Coding, Double Valuation, Photocopy, Online Multiple Choice Questions)

1. Bar coding has been introduced by SPPU and is implemented by the college successfully.
2. Under CBCS all the Post graduate courses conduct examination in the form of
 - Open Book Test
 - Multiple Choice Test
 - Debates
 - Presentations
 - Review writing
 - Seminars
 - Quizzes, Group Discussion
 - Group Discussion

2.9 No. of faculty members involved in curriculum Restructuring/ revision/ syllabus development as (i) member of Board of Study(ii) Faculty(iii) Curriculum Development workshop

(i)	(ii)	(iii)
8	15	3

One staff member is Chairperson, BOS.
 Eight teachers are Members of BOS of SPPU and other universities.
 Five faculty members are also the members of syllabus sub-committees of BOS.

2.10 Average percentage of attendance of students

UG: 75- 80 %
PG: 80- 90%
Ph. D: 90- 100 %

2.11 Course/Programme wise distribution of pass percentage:

Title of the Programme	Total no. of students appeared	Division (in %)				
		Distinction	First Class	Second Class	Third Class	Passing
B.Sc. Botany	21	14.28	66.67	9.52	---	90.47
B.Sc. Biotechnology	40	15	55	15	15	85
B.Sc. Chemistry	38	18.42	44.7	2.2	0	65.32
B.Sc. Computer Science	115	8.69	39.13	15.65	4.34	67.81
B.Sc. Electronic Science	27	14.81	33.33	22.22	3.7	74.06
B.Sc. Physics	36	30.56	38.89	2.78	--	72.23
B.Sc. Mathematics	78	44.87	12.82	7.68	--	65.38
B.Sc. Microbiology	31	31	23	23	-	87
B.Sc. Statistics	28	60.71	28.57	--	--	89.28
B.Sc. Zoology	30	46.6	30	10	--	86.6
B.Sc. Animation	First Batch will be passing out in academic year 2015-16					
M.Sc. Botany	21	23.80	42.85	33.33	--	99.98
M.Sc. Biotechnology	24	51.17	45.83	-	-	97
M.Sc. Computer Science	72	2.7	33.33	48.6	2.7	87.33

Title of the Programme	Total no. of students appeared	Division (in %)				
		Distinction	First Class	Second Class	Third Class	Passing %
M.Sc. Chemistry	39	7.69	38.46	7	17.95	66.66
M.Sc. Electronics	20	10	30	30	30	100
M.Sc. Microbiology	43	13.95	41.8	9.29	0	100
M.Sc. Statistics	29	--	20.69	55.17	3.45	79.31
B.A. Economics	47	31	24	26	15	96
B.A. English	15	13.33	20	46.66	13.33	93.32
B.A. History	10	20	20	40	20	100
B.A. Marathi	13	--	--	30.77	46.13	76.9
B.A. Geography	37	16.22	54.06	16.21	--	86.49
B.A. Political Science	51	15.69	23.53	27.45	23.53	90.2
B.A. Psychology	16	26.67	46.67	20.07	6.67	93.75
B.A. Hindi	5	-	20	-	80	100
M.A. English	66	3.03	13.64	30.30	7.58	54.55
M.A. Economics	12	17	33	7	7	100
M.A. Marathi	17	29.41	70.59	--	--	100
M.A. Geography	16	--	6.25	62.50	18.75	87.50
M.A. Psychology	33	18	60.06	10	3	91
BBA	96	1.04	26.04	47.92	9.38	84.38
BCA	183	3.28	-	26.23	16.39	45.90
B.Com	405	4.27	20.72	66.23	0.2	91.46
M.Com.	50	-	18	30	2	50
MCA (Science)	65	3.08	46.15	35.38	15.38	99.99
MCA (Commerce)	70	7	41.4	44.2	2.8	95.4

2.12 How does IQAC Contribute/Monitor/Evaluate the Teaching & Learning processes:

- IQAC analyses teaching – learning feedback from teachers, students and parents.
- Decisions for improving the academic process, the infrastructure, library facilities, and laboratory upgradations are recommended to Local Managing Committee for their proper implementation.
- IQAC implements the process of maintaining teaching plan (lecture plans) by each teacher, weekly worksheets and teacher's diary to continuously monitor and improve teaching learning process.
- IQAC has implemented the use of Teachers diary for monitoring the teaching learning process.
- Time tables for practical and theory classes are planned in three sessions by considering the students' convenience.
- IQAC has insisted and encouraged the use of ICT for enhancing the quality of teaching-learning process.
- IQAC has organized lecture series, quality enhancement workshops, seminars, conferences for facilitating interaction with the experts in respective fields.

2.13 Initiatives undertaken towards faculty development

<i>Faculty / Staff Development Programmes</i>	<i>Number of faculty benefitted</i>
Refresher courses	6

UGC – Faculty Improvement Programme	-
HRD programmes	40
Orientation programmes	4
Faculty exchange programme	-
Staff training conducted by the university	1
Staff training conducted by other institutions	8
Summer / Winter schools, Workshops, etc.	8
Others	-

2.14 Details of Administrative and Technical staff

Category	Number of Permanent Employees	Number of Vacant Positions	Number of permanent positions filled during the Year	Number of positions filled temporarily
Administrative Staff	97	11	-	-
Technical Staff	68	13	-	-

Criterion – III

Criterion – III

3. Research, Consultancy and Extension

3.1 Initiatives of the IQAC in Sensitizing/Promoting Research Climate in the institution

- Newly appointed teaching staff as well as graduate and postgraduate students are encouraged to participate in various National and International conferences, seminars, similarly for guiding students for their projects at Under Graduate and Post Graduate level such as 'Avishkar' organized by SPPU, 'Ignited innovators of India' (I²I) organized by COEP in collaboration with Bhau Institute, Pune and participating in Project competitions organized by Departments of the college.
- Students are encouraged to participate in research activities like Avishkar organized by BCUD, SPPU, International Conference 'Youth United for voluntary Action' (YUVA-2013) organized by 'The Energy and Resource Institute' (TERI) and 'Pune Intercollegiate Consortium' (PICC).
- The college is promoting research amongst undergraduate and Post Graduate students under 'Yuva Sanshodhak' scheme by funding the projects of the students by college under the guidance of faculty members.
- Presentation of faculty research work under BCUD funded projects in National Seminars such as INNOVATIONS.
- Students are encouraged to apply for DST INSPIRE scheme to promote basic science research.
- Display of notices with respect to conferences, seminars, workshops, training programmes for P.G. students and research students.
- Recruitment of Ph.D. candidates is preferred, so as to pursue research.
- Interaction of the students with the scientists from various industries and institutes.
- Visits are arranged for students to various research organizations.
- U.G. as well as P.G. students are encouraged and motivated to take part and perform experiments in small research projects.
- Provide infrastructure for in-house and inter-departmental research projects.
- Encourage faculty for submission of research proposal to various funding agencies.

3.2 Details regarding major projects

Details*	Completed	Ongoing	Sanctioned	Submitted
Number	-	5	-	2
Outlay in Rs. Lakhs	-	Rs. 84,80,173	-	Rs.20,35,000/-

* Major Projects Part B Annexure III (Criteria III).

3.3 Details regarding minor projects

Details*	Completed	Ongoing	Sanctioned	Submitted
Number	-	-	16	6
Outlay in Rs. Lakhs	-	-	Rs. 26, 56, 000	-

* Minor Projects Part B Annexure IV (Criteria III).

3.4 Details on research publications

Details*	International	National	Others
Peer Review Journals	11	2	-
Non-Peer Review Journals	3	-	4
e-Journals	2	-	-
Conference proceedings	4	6	-

* **Research Publications Part B Annexure V (Criteria III).**

3.5 Details on Impact factor of publications:

Range Average h-index Nos. in SCOPUS

3.6 Research funds sanctioned and received from various funding agencies, industry and other organisations

Nature of the Project	Duration Year	Name of the funding Agency	Total grant sanctioned	Received
Major projects	2014-15	DST,ISRO,UGC	Rs. 84,80,173/-	Rs. 54,27,500/-
Minor Projects	2014-15	SPPU, UGC	Rs. 26,56,000/-	Rs.13,65,000/-
Interdisciplinary Projects	2014-15	-	-	-
Industry sponsored	2014-15	-	-	-
Projects sponsored by the University/ College	2014-15	-	-	-
Students research projects (other than compulsory by the University)	2014-15	College	-	-
Any other(Specify)	2014-15	Biodiversity audit and green campus audit	Rs. 30,000/-	Rs. 30,000/-
Total	-	-		

3.7 No. of books published i) With ISBN No. Chapters in Edited Books

ii) Without ISBN No.

***Books published Part B Annexure VI-a (Criteria III).**

3.8 No. of University Departments receiving funds : NOT APPLICABLE

UGC-SAP CAS DST-FIST
DPE DBT Scheme/funds

3.17 No. of research awards/ recognitions received by faculty and research fellows of the institute in the year

Total	International	National	State	University	Dist	College
4	-	2	-	1	-	1

3.18 No. of faculty from the Institution who are Ph. D. Guides and students registered under them

12	18
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***Ph.D. guide list and Students registered for Ph.D. Part B Annexure VII-a, VII-b (Criteria III).**

3.19 No. of Ph.D. awarded by faculty from the Institution

03

3.20 No. of Research scholars receiving the Fellowships (Newly enrolled + existing ones)

JRF	4	SRF	-	Project Fellows	-	Any other RA	1
-----	---	-----	---	-----------------	---	--------------	---

3.21 No. of students Participated in NSS events:

University level	50	State level	05
National level	-	International level	-

3.22 No. of students participated in NCC events:

University level	47	State level	11
National level	13	International level	-

3.23 No. of Awards won in NSS:

University level	-	State level	-
National level	-	International level	-

3.24 No. of Awards won in NCC:

University level	-	State level	-
National level	1	International level	-

3.25 No. of Extension activities organized

University forum	-	College forum	3
NCC	3	NSS	5
		Any other	-

3.26 Major Activities during the year in the sphere of extension activities and Institutional Social Responsibility.

1. Blood donation Camp was held in college and 136 blood bags were collected by KEM Hospital.

2. “Ek Divas Shetasathi Shetkaryancha Madatisathi” Project by Vanrai at Vinzar and Velhe around 1200 students (Paddy Crop Plantation).
3. SUO Kapil Sable participated in the Republic Day Camp 2014 at New Delhi.
4. JUO Makarand Dhamale and CPL Rajat Ninave completed the Thal Sainik Camp upto the Inter Group Level held at Aurungabad in September 2014.
5. SGT Abhijit Dhanedhar and CDT Onkar Jagtap completed all India Doon Treck held at Deharadun, UK in September 2014.
6. Rice (Paddy) plantation programme was organised at Vinzar and Velhe Dist, Maharashtra where 1200 students from our college participated with NSS officers where students helped the local farmers in rice plantation (July 2014).
7. Blood Donation Camp and NSS day was celebrated on 14 December 2014 where 230 student volunteers donated blood for KEM Hospital, Pune.
8. Road Safety Awareness Programme was organised to emphasize the importance of Road safety in Pune city.
9. Students of BBA and BCA have been organizing the “Social Week” since Dec 2014. The core motive behind observing the “Social Week” is to inculcate a sense of social responsibility amongst our students who are the future of tomorrow.
10. Workshop on Mathematics for Blind students studying in different colleges was organised by the college where 35 blind students were benefitted and this activity was supported by Drushti group and Sparsh Group. (26 January 2015)

Criterion – IV

4. Infrastructure and Learning Resources

4.1 Details of increase in infrastructure facilities:

Facilities	Existing	Newly created	Source of Fund	Total
Campus area	3 acres	2 acres	College	5 acres
Class rooms	77	6	College	83
Laboratories	47	1 (MCA Commerce)	College	48
Seminar Halls	2	-	-	2
No. of important equipments purchased (\geq 1-0 lakh) during the current year.		Antena System, Optical Instrument, polarimeters,	XII Plan	-
Value of the equipment purchased during the year (Rs. in Lakhs)	Rs. 18,57,000/-	Rs. 7,39,557/-	XII Plan	-
Others	-	-	-	-

4.2 Computerization of administration and library

- A **separate administration building** of 6000 sq. ft. is available for office and is in use for office administration purpose.
- Each staff is provided with a computer of latest configuration and **“Vruddhi” office automation software** installed on it. The office administration has reorganised the activities of the office for rendering good service to staff by utilising Vruddhi Software for database management
- **Digital record room** is established, from where digitized reference books, teachers notes are accessible to students.
- A **digital Library** is established in the college. It was inaugurated on 31st July 2013.
- Ambiance of the library with infrastructure, new storage cupboards and easily accessibility through computerized data OPAC helps to relatively easily locate the status of a book / journal in the library.

4.3 Library services:

	Existing		Newly added		Total	
	No.	Value Rs.	No.	Value Rs.	No.	Value Rs.
Text Books	102096	18,00,636/-	914	1,60,597/-	104722	27,29,501/-
Reference Books			1712	7,68,268/-		
e-Book(e-resources)	97000+	5,000/-	385000	27,193/-	482000	32,193/-

	Existing		Newly added		Total	
	No.	Value Rs.	No.	Value Rs.	No.	Value Rs.
Journals	116	1,15,598/-	2	5610/-	118	1,22,342/-
e-Journals	6000+	5,000/-	16400+	27,193/-	22400+	32,193/-
Digital Database	1	5,000/-	2	27,193/-	3	32,193/-
CD & Video	187	46,938/-	51	32,520/-	238	79,458/-
Others (specify)	Nil	Nil	1. Jaykar Library 2. Gokhale Instiute 3. Deccan College Library	16,000/-	3	16,000/-

4.4 Technology upgradation (overall)

	Total Computers	Computer Labs	Internet	Browsing Centres	Computer Centres	Office	Depart-ments	Others
Existing	404	6	100	1	1	1	23	-
Added	135	0	17	-	-	-	1	-
Total	539	6	117	1	1	1	24	-

4.5 Computer, Internet access, training to teachers and students and any other programme for technology upgradation (Networking, e-Governance etc.)

- A Teachers training program on ICT was conducted for newly recruited teachers for 40 hours in January 2015.
- An eight days training programme for office staff and library staff was organized in October 2014.
- A Good app training programme was organized for students and teachers.

4.6 Amount spent on maintenance in lakhs :

i) ICT	Rs. 3, 00,000/-
ii) Campus Infrastructure and facilities	Rs. 36,05,093/-
iii) Equipments	Rs. 9,31,557/-
iv) Others	-
Total :	Rs. 48,36,650/-

Criterion – V

5. Student Support and Progression

5.1 Contribution of IQAC in enhancing awareness about Student Support Services

- Remedial coaching
- Government scholarships and freeships
- Financial help through Students' Aid Funds
- Earn and Learn Scheme
- Concession in fees.
- Installments in fees.
- Financial help by well wishers for weak students.
- Staff members give monetary help and help in kinds from time to time for needy students.
- SET-NET coaching, Competitive exam coaching, equal opportunity cell.

5.2 Efforts made by the institution for tracking the progression

- The institution consistently makes the efforts and guides the students to reach higher goals in their life to pursue higher academics and jobs.
- Career guidance by placement cell and aptitude test and career counseling by psychology department.
- Interaction between the representatives of foreign universities and the UG-PG students of the college.
- Regular feedback of students is taken.

5.3 (a) Total Number of students

UG	PG	Ph. D.	Others
4934	1097	18	-

(b) No. of students outside the state

62

(c) No. of international students

71

Men	No	%	Women	No	%
	2433	49.31		2501	50.69

Last Year 2012-13						This Year 2013-14					
General	SC	ST	OBC	Physically Challenged	Total	General	SC	ST	OBC	Physically Challenged	Total
4085	784	166	930	-	6530	3789	626	103	411	5	4934

Demand ratio 1:1 to 1:2 Dropout % - 0.5 to 1 % (The dropout percentage is negligible)

5.4 Details of student support mechanism for coaching for competitive examinations (If any)

Competitive examination guidance centre is established in the college which conducts regular programmes on every Friday and Saturday. Guidance from experts is provided from time to time to the students we have enrolled in the center. A separate library room is established for these students which is made available from 2.30 p.m. to 11.30 p.m. in the campus.

No. of students beneficiaries 225

5.5 No. of students qualified in these examinations amble sire

NET	3	SET/SLET	4	GATE	-	CAT	-
IAS/IPS etc	-	State PSC	-	UPSC	-	Others	-

5.6 Details of student counselling and career guidance

No. of students benefitted 102

Department of Psychology is running the counselling centre since 1991. It provides Psychological counselling, career counselling to students, teachers, non-teaching staff and neighbourhood community.

Aptitude testing and career counselling is a unique feature of Psychology Department. By using “I AM”, standardized software is used for the same. From March 2014 -June 2014, 63 students of 10th, 12th standards in addition to other students have benefitted from this test.

5.7 Details of campus placement

<i>On campus</i>			<i>Off Campus</i>
Number of Organizations Visited	Number of Students Participated	Number of Students Placed	Number of Students Placed
60	132	130	-

Representative data of Placement Cell of Computer Science Dept

5.8 Details of gender sensitization programmes

- In order to supplement the existing syllabus on gender issues, the college has initiated several programs such as – Gender Sensitization workshop, Guidance lectures by Lady Police officers to the ladies student.
- Programs on women employment, self defence training for ladies students, lecture on legal provisions for women and their safety.
- Workshops on pre-marital counselling are organized for both boys and girls by Department of Psychology.
- Staff Academy and PG Association organize various sensitization programs through which gender inclusion and environment related issues are emphasized.

5.9 Students Activities

5.9.1 No. of students participated in Sports, Games and other events

State/ University level National level International level

No. of students participated in cultural events

State/ University level National level International level

5.9.2 No. of medals /awards won by students in Sports, Games and other event

Sports : State/ University level National level International level

Cultural: State/ University level National level International level

5.10 Scholarships and Financial Support

	Number of students	Amount Rs.
Financial support from institution	-	-
Financial support from government	1185	2,617,200/-
Financial support from other sources	1342	3,09,738/-
Sports Scholarship (University and College level)	24+	17,500/-
Number of students who received International/ National recognitions	-	-

5.11 Student organised / initiatives

Fairs : State/ University level National level International level

Exhibition: State/ University level National level International level

1.12 No. of social initiatives undertaken by the students

[Dhristi Abhiyaan, Rice Paddy Plantation, Voting Camp, Cleaning Drive, Road Safety Awareness Programme]

5.13 Major grievances of students (if any) redressed: NIL

Criterion – VI

6. Governance, Leadership and Management

6.1 State the Vision and Mission of the institution

Vision of the institute

The Vision statement of the institute is ‘ज्ञानमयो भव’, meaning ‘**Be Knowledge Incarnate**’. The word ‘EXCELSIOR’ at the bottom of the logo is an expression of incessant aspirations of higher attainment.

Mission Statement

“To create multidisciplinary best citizens to suit the local, national and international needs, having scientific temperament, moral, ethical values and multifaceted proactive personality, by providing excellent education”

Objectives

- Use of ICT and other advanced technologies for enhancing the quality of education.
- Increasing Co-curricular and Extra-curricular activities.
- Supplementing formal education with skill development.
- Infrastructural improvement for enhancing academic ambience.
- Inculcating research culture among staff members and students.
- Educational quality enhancement through ‘Trisutri’ (Three Point) program of Decentralised Governance, Increased Budgetary Provision and Specialized Training.
- To inculcate ethical and moral values among the youth.

6.2 Does the Institution has a management Information System

YES. Management Information System is in place. The college also uses Vriddhi software which is recommended by S.P. Pune University (Formerly University of Pune)

6.3 Quality improvement strategies adopted by the institution for each of the following:

6.3.1 Curriculum Development

- Number of demonstration experiments was increased
- Involvement of maximum teachers in curriculum development at university level and college level
- Add on courses were increased
- Workshops were organised on syllabus designing restructuring and implementation
- Teachers are encouraged to participate in seminar, conference and workshops on curriculum development by other colleges

6.3.2 Teaching and Learning

- Use of ICT enabled teaching
- Modern Pedagogical methods are used for teaching like Cooperative learning and PBL.
- Use of Traditional methods in combination with advanced methods. Is encouraged
- Class room ambience should support teaching learning (Furniture, cleanliness)
- Installation of CCTV should be increased for safety, security and monitoring

6.3.3 Examination and Evaluation

- Compulsory questions on problem solving were introduced.
- Summative and Formative evaluation and examination reforms for overall continuous assessment for student
- Since SPPU has started online question paper system, the Examination Control room should be well equipped

6.3.4 Research and Development

- More number of departments should make efforts for recognized research centers
- Continue organization of seminars and conferences
- The students are encouraged to select project themes which aim at focussing and resolving issues of the society or which have social economic relevance. E.g. Vermiculture and bio fertilizer production project.
- Teachers are encouraged to avail facility of FIP-UGC for improving and advancing their qualification
- The college encourages teachers to undertake minor and major research schemes from various funding agencies like BCUD, SPPU, Pune, UGC, DST, DBT, etc.
- Teachers who are research guides in our Research Centers are guiding research scholars working for Ph.D. in the college.
- In the institution the departments have research projects funded by BCUD, UGC, Avishkar and PICC which are undertaken by the students. This helps in nurturing innovative and research aptitude among the students.

6.3.5 Library, ICT and physical infrastructure / instrumentation

- Use of advanced technology is encouraged to make library services more effective and convenient.
- All the required equipments as per the syllabus are purchased and made available to the students
- In addition to the instruments prescribed by University, advanced equipment are purchased for promoting research

6.3.6 Human Resource Management

- To organize training programme/ workshops/ conferences etc for human resource development and human resource management
- Use of computer technology for HR management

6.3.7 Faculty and Staff recruitment

- Regulations and norms of UGC, Govt of Maharashtra and SPPU are followed for staff recruitment.
- Conducting entrance examination, classroom demonstration in addition to the formal interview.
- Preference is given to those fulfilling basic requirements but also have additional qualifications.

6.3.8 Industry Interaction / Collaboration

- Due to industry academia cell, collaboration with industries and national laboratories has increased.
- To develop strategies, encouraging industry academia collaboration through establishment of industry academia committee
- Arranging industry academia meets every year
- To arrange industrial visits and encourage research projects in collaboration with industry

6.3.9 Admission of Students

- Use of technology for making admission process effective, transparent and convenient to the student through online admissions.
- College has purchased *Vruddhi Edubrain* software and in some cases college has taken help of external agencies for online admissions, namely e-Pravesh.

6.4 Welfare schemes for

Teaching	1(Cooperative credit Society)
Non teaching	1 (Cooperative credit Society)
Students	3 (Student Welfare Scheme)

6.5 Total corpus fund generated

Rs.4, 34, 98,735/-

At Parent body

6.6 Whether annual financial audit has been done

Yes

No

6.7 Whether Academic and Administrative Audit (AAA) has been done?

Internal audit has been initiated and steps to conduct a systematic audit by external agency are underway.

Audit Type	External		Internal	
	Yes/No	Agency	Yes/No	Authority
Academic	YES	SPPU, Pune	YES	-
Administrative	YES	SPPU, Pune	YES	-

6.8 Does the University/ Autonomous College declare results within 30 days?

For UG Programmes

Yes

No

For PG Programmes

Yes

No

6.9 What efforts are made by the University/ Autonomous College for Examination Reforms?

Not applicable

6.10 What efforts are made by the University to promote autonomy in the affiliated/constituent colleges?

The college has initiated autonomous skill development courses. The college also has a Life Science Research Centre that runs autonomously.

6.11 Activities and support from the Alumni Association

- Modern Alumni Association has been registered (Registration No. 945).
- Online registration form is made available on College website. Department wise alumni meet are arranged.
- In Computer Science Department, successfully placed Alumni visit the college for weekly interactive meetings and guide the present students for enhancing their employability.
- Alumni interact with the stakeholders namely teachers, non teaching staff and present students and give their feedback about various criteria.
- In addition to the registered Alumni Association, students excelling in Sports have separate Alumni association which is also registered.
- The Alumni from Dept. of Physical Education and Sports participate in conducting of Inter Collegiate Sports events.

6.12 Activities and support from the Parent – Teacher Association

Many of the Departments arrange Parent Teacher meetings in their departments. In such meetings, Parents are made aware about the facilities and activities of the department. Feedback is taken from the parents. Interaction between parents and teachers is facilitated. Based on feedback of the parents possible actions are initiated. Some parents have installed scholarships for giving financial support to needy students.

6.13 Development programmes for support staff

Meetings of Lab assistants and lab attendants are conducted for giving guidance on laboratory safety. Training activities like campus safety, use of fire extinguisher, lab safeties etc are conducted for their development. The support staff is trained according to the needs of their specific departments. Workshop on lab safety was organised for Lab assistants and attendants. Training for using Safety equipment like fume hoods and safety materials like lab shoes, apron, gloves are provided.

6.14 Initiatives taken by the institution to make the campus eco-friendly

- NSS unit of our college implemented some activities in college and in the adopted village.
 - Survey on e-waste management in adopted village Phulgaon, District Pune.
 - Organized lecture of experts on this topic in NSS special camp and in college.
 - Prepared and displayed posters / banners on this subject in NSS camp at Phulgaon.
 - Started e-collection center at our college NSS unit.
- The Department of Computer Science donates the old versions of computers to the schools of our organization.
- The faculty members and students of Department of electronics and computer science of the college are working on different aspects of e-waste management.
- The college has conducted Energy Audit, Green Audit, Biodiversity Audit. Collection of Biomedical Waste is done periodically.
- E-waste management, Biodegradable Urban Waste management are done regularly.
- Use of renewable energy is promoted.

Criterion – VII

7. Innovations and Best Practices

7.1 Innovations introduced during this academic year which have created a positive impact on the Functioning of the institution. Give details.

1. Digital Record room

Digital Record room is used for preserving the data. Human resource utilized is to the minimum, also time is saved and at a time data can be accessed by number of people and data is easily available for the compliance of RTI.

- As data is preserved in digitized format use of paper is reduced and eco friendly message is given.
- As data is preserved in digitized format, less storage is required.
- We can save various important research papers, as well as conference proceedings in the form of soft copies.

2. Digital Library

For a college, library is always considered as an asset. In order to further improve the functioning library is made digital.

With successful use of advanced scanners, the stock verification of library books has become more effective and less time consuming.

- We have taken subscription of e-resources like N-list, British library etc.
- Digitization of college annual magazines of last 40 years and scanning of various rare and old books, various question papers and project report is in process.
- Use of OPAC is implemented

3. Use of ICT:

The World is increasingly revolving on technological axis. To access internet via computer, Smart phone is fundamental, not just for individual for personal communication and creativity, but also for educational institution. In Modern College, Pune-5, we are focusing on use of ICT. We are using digital technology for education and other services, and focus is on creating Best Digital Citizens. We have,

1. Virtual Classroom
2. Advanced laboratories
3. Use of ICT in the classrooms

7.2 Provide the Action Taken Report (ATR) based on the plan of action decided upon at the beginning of the year

All the plans chalked out during the beginning of the year as mentioned in 2.15 were completed successfully

7.3 Give two Best Practices of the institution (*please see the format in the NAAC Self-study Manuals*)

Best Practices of the Institution*

1. Use of Electronic and Computer Technology in academics and administration
2. Green Campus Initiative

***Best Practices Part B Annexure VIII (Criteria VII).**

7.4 Contribution to environmental awareness / protection

- Environmental education course is conducted at the second year of all graduation programmes. The study material for the said course is prepared by the college for the benefit of students.
- Students are encouraged to undertake the projects on various issues of environment studies.
- Some of the projects prepared by the students have received awards in *International Youth Convention*.
- College has initiated efforts for formation GCI (Green Campus Initiative) committee.
- Bio-diversity audit and green audit of college campus have been initiated.
- Several conferences are organized by our college were based on the theme on environmental awareness and its conservation.
- College has established bio-medical waste disposal system.
- The college has been running Vermiculture training programme since last five years and vermiculture facility is being used very effectively.

7.5 Whether environmental audit was conducted? Yes No


The college has conducted Energy Audit, Green Audit, Biodiversity Audit. Collection of Biomedical Waste is done periodically. E-waste management, Biodegradable Urban Waste management are done regularly. Use of renewable energy is promoted.

7.6 Any other relevant information the institution wishes to add. (for example SWOC Analysis)

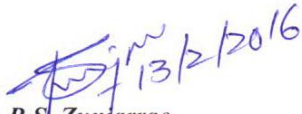
SWOC Analysis has been conducted in 2014

8. Plans of institution for next year

- To establish history museum.
- To develop student facility centre
- To start foreign language cell.
- To Develop a centre to promote innovative methods in teaching and learning and pedagogy
- To develop centre for promotion of research
- To take more steps towards Green Campus Initiative
- To streamline the process of feedback from stakeholders and its quantitative assessment by IQAC
- To conduct systematic academic and administrative audit by Official External agency


Name **Prof. S. R. Chaudhari**

Signature of the Coordinator, IQAC


Name **Dr. R.S. Zunjarrao**
PRINCIPAL

Progressive Education Society's
Modern College of Arts, Science
and Commerce, Pune - 5.

Signature of the Chairperson, IQAC



Part –A

Annexure I: Academic Calendar

Date	Event
15 June 2014	Commencement of term
First week of August 2014	Principal's Address and Induction Programme for First Year Students
Last week of Sept 2014	Internal Examinations
6 October 2014	National Conference on Environment and Biodiversity of India
31 October 2014	First Term End Meeting
25 November 2014	Diwali vacations
23-24 December 2014	National Conference on Hazardous e-Waste management
23-24 January 2015	College Annual Social Gathering
25 January 2015	Kanitkar Day (Founders Day)
28-29 January 2015	International Conference on Environment Conservation by adopting new technologies
4-5 February 2015	State Level Seminar on Emerging Trends in Service Sector organised by Wing of Computer and Business Studies
3 rd week of February 2015	Internal Examinations
26 February 2015	State Level Seminar "Majhi Jadanghadan" organised by Marathi Department
28 February 2015	Science day celebration
March 2015	Annual Practical examination of SY and TY
30 April 2015	End of term

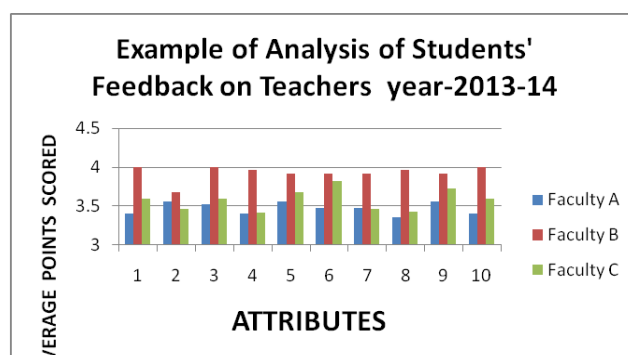
Part –B Annexure I (Criteria I) : Skill Development Courses

Sr. No.	Course Name	Department	Coordinator
1	Pharmaceutical Techniques	Microbiology	Dr. Shilpa Mujumdar
2	Plant Tissue Culture I	Botany	Dr. K.D.Gopale
3	Seed Technology	Botany	Prof. Arti Goggi
4	Computerized financial accounting (Tally)	Commerce	Prof. Mishi Moreshwar
5	German level I (Basic)	German	Prof. Sanjeevani Kuwalekar
6	German Level II (Advanced)	German	Prof. Sanjeevani Kuwalekar
7	Fashion Designing	Arts	Dr. Nayana Kulkarni/Prof. Manasi Thakur
8	Integrated Vermi-technology	Zoology	Prof. Narendra Naidu
9	Ayurvedic medicines and Herbal products preparation	Botany	Prof. R.N. Ingole
10	Animal Tissue Culture	Biotechnology	Dr.S.Puranik
11	Analytical Techniques	Chemistry	Dr. S.Pokharkar
12	Chemical Based Household Products	Chemistry	Dr. Ujlambkar S. K.
13	Biostatistics	Statistics	Dr.M.M.Sane
14	Statistical Analysis System (SAS)	Statistics	Prof. P.G.Dixit
15	PCR Techniques	Biotechnology	Prof. Rama Phadke
16	Course on Nanotechnology-Under DBT Star College Scheme	Biotechnology	Dr. Rebecca Thombre
17	Soft Skills	Commerce	Dr. Vijay Gaikwad
18	Industrial Electronic Components: Familiarization and Testing	Physics	Prof. S.S.Thengadi
19	Flower Arrangement	Botany	Prof. Manisha Mandhare
20	Microscopy: Under DBT Star College Scheme	Zoology	Prof. N.M.Naidu
21	Flower Remedy	Psychology	Prof. Vijaya Jagtap
22	Embedded Systems	Electronics	Prof. D.B.Gaikwad
23	Translation	Marathi	Dr. Snehal Taware
24	DOTNET and PHP	M.C.A. Commerce	Prof. Aditi Patil
25	Spoken Marathi (Vani Course)	Marathi	Dr. Snehal Taware
26	Spoken English	English	Prof. Alka Kamble
27	Computer awareness	Computer Science	Prof. S.S.Deshmukh
28	'Modi' Script	History	Dr. Rajesh Kulkarni

Part –B Annexure II (Criteria I) : Feedback

Regular feedback of teachers was taken from the Final year undergraduate students. The format of feedback forms was different for each department. After the feedback was taken, the respective Heads of the Departments communicated regarding the feedback to the respective teachers in the departmental term end meetings. In case of deficiencies or poor feedback of the teacher, the Head communicates with the Vice Principal/ Principal and corrective action is taken.

All the departments of the College take feedback from students about the teachers. Many Departments take informal verbal feedback from students, their parents (in some cases) and from alumni (during alumni meet). During the year 2013-14, written feedback has been taken from the students about their teachers by some of the Departments in a standardised format, while some other Departments have taken it in a flexible format. As an example the feedback taken in standardised format in Department of Botany is analysed as follows:-



Attribute Sr. No.	Description
1	Knowledge base of the Teacher (as perceived by the student)
2	Communication skills (in terms of articulation and comprehensibility)
3	Sincerity/ commitment of the Teacher
4	Interest generated by the Teacher
5	Ability to integrate course material with environment/ other issues, to provide a broader perspective
6	Ability to integrate content with other courses
7	Accessibility of the Teacher in and out of the class (includes availability of the teacher to motivate further study)
8	Ability to design quizzes/tests/assignments/examinations and projects to evaluate student's understanding of the course
9	Provision of Sufficient Time for feedback
10	Overall Rating

The above Feedback has been taken on a **Four- Point Scale** having following rating – **4- Very Good, 3 – Good, 2- Satisfactory and 1- Unsatisfactory**. The feedback taken by other departments is analysed in similar manner. The matters regarding feedback are discussed in the IQAC meetings of each Department.

Students' Feedback on the infrastructure and other facilities etc. is obtained by inviting suggestions from them. Several suggestion boxes have been kept in the college premises. Corrective action is taken based on the suggestions received.

Part B Annexure III (Criteria III) : Major Projects

Principal Investigator	Title of the Project	Name of funding agency	Amount sanctioned	Duration of the Project
Ongoing Projects				
Dr. R.S.Zunjarrao Dr.R.B.Barmukh	Developing a Digital Herbarium of Angiospermic Plants of the Western Ghat Regions of Maharashtra	UGC, New Delhi.	Rs. 9,86,750/-	2013 to 2016
Dr. Neeta Patil	Isolation of the induced mutants in linseeds (<i>Linum usitatissimum</i>) under salt stress	UGC, New Delhi.	Rs. 12,80,500/-	2013 to 2016
Dr. Rebecca Thombre	Halophilic bacterial diversity of marine ecosystems from West Coast of India	ISRO-UOP	Rs. 16,04,000/-	2013 to 2016
Dr. P.P.Kanekar	Exploring halophiles from west coast of India for production of bacteriorhodopsin, a novel protein capable of converting light energy into electrical energy	CSIR	Rs. 22,08,923/-	2013 to 2016
Dr. K.D.Gopale	Fatty acid profiling and molecular characterisation of potential Biodiesel producing microalgae from South India	DST-SERB	Rs. 24,00,000/-	2013 to 2016
Total Amount			Rs. 84,80,173/-	
Submitted Projects				
Prof. Mrs. R. M. Phadake	Evaluation of potential of cytotoxicity of curcumin protein from <i>Jatropha curcus</i> L.	UGC	3,35,000/-	2015
Dr. Mrs. A. S. Oak	Emotional Intelligence among adolescents: Tool Development, Enhancing through training and study of correlates	ICSSR	17,00,000/-	2015

Part B Annexure IV (Criteria III) : Minor Projects

No	Principal Investigator	Dept	Title of the Project	Name of funding agency	Amount sanctioned	Duration of the Project
1.	Dr. Mrs. M. M. Satam	Economics	A Study of Minimum Balance Account as a tool for Financial Inclusion and its impact on urban unemployed youth in Pune	BCUD, SPPU	75,000/-	2014-16
2.	CA Mrs. R. P. Date	Commerce	Gender Audit of Educational Institutes- A case study of select Deemed Universities in Pune.	BCUD, SPPU	1,10,000/-	2014-16
3	Mrs. M. S. Datre	Library	Designing E-learning courses to improve information literacy skill of College students	BCUD, SPPU	90,000/-	2014-16
4	Dr. Mrs. R. S. Thombre	Microbiology	Studies on bacterioruberin and membrane protein production by haloarchaea isolated from Mumbai salterns	BCUD, SPPU	2,30,000/-	2014-16
5	Dr. Mrs. S. V. Bhagat	Biotechnology	Screening of some indigenous plant species for xanthineoxidase inhibitors: Potential remedies for gout	BCUD, SPPU	1,60,000/-	2014-16
6	Dr. R. S. Zunjarrao	Botany	Optimization of Growth Rate of Potential Biodiesel Producing Microalgae.	BCUD, SPPU	2,40,000/-	2014-16
7	Prof. R. L. Dabhade	Biotechnology	Green synthesis of metal nano particles and their applications	BCUD, SPPU	1,30,000/-	2014-16
8	Dr. Mrs. V. S. Waman	Physics	Development of CZTS based low cost thin film solar cells by electrochemical deposition method	BCUD, SPPU	2,20,000/-	2014-16
9	Dr. Mrs. G. M. Litake	Biotechnology	Evaluation of Environmental dissemination of Multi-Drug Resistant Staphylococcus species	BCUD, SPPU	1,80,000/-	2014-16
10	Dr. S. S. Patil	Physics	Systematic synthesis, characterization & Field emission investigations of Novel Metal Oxide nanostructures/heterostructures	BCUD, SPPU	2,40,000/-	2014-16

No	Principal Investigator	Dept	Title of the Project	Name of funding agency	Amount sanctioned	Duration of the Project
11	Dr. Y. S. Shinde	Zoology	Taxonomy and Distribution of Ostracoda (Crustacea) of Phytotelmata from Western Maharashtra.	BCUD, SPPU	2,20,000/-	2014-16
12	Dr. A. B. Shinde	Zoology	A Study of Behavioural Finance Pertaining to Management Institutes Faculty in and around Pune .	BCUD, SPPU	70,000/-	2014-16
13	Dr. A. H. Shende	Economics	A Study of Competition, Co-operation and Conflict of India and China with special reference to Trade & Commerce.	ICSSR	8,00,000/-	2014-16
14	Dr. M. M. Satam	Economics	Financial inclusion and women empowerment	UGC	1, 70,000/-	2014-16
Total					26,56,000/-	

Part B Annexure V (Criteria III) : Research Publications

Sr. No	Name of the Teacher(s) Author	Title of the paper	Name of the Journal/Proceeding/ Edited Books	Volume & Pages	Year of Publication	ISBN/ISSN.NO.	Impact Factor
1	A. Majumder, A. Raha, B. Mitra, H. V. Ghate , K. Chandra,	Longhorned beetles (Coleoptera: Cerambycidae) from Chhattisgarh, India”	Journal of Threatened Taxa,	vol.6, no.1, pp. 5393–5399,	January 2014.	ISSN Online 0974–7907 Print 0974–7893	
2	A. B. Mamlayya, G. P. Bhawane, H. V. Ghate ,	“First Record of a Cerambycidae beetle <i>Apioccephalus licheneus</i> Gahan from Western India” (Coleoptera: Cerambycidae: Lepturinae,	Journal of Threatened Taxa,	vol. 6, no.2, pp. 5494–5498,	January 2014.		
3	M. N. Pathak, H.V. Ghate	A note on Occurrences of <i>Cucumis sativus</i> L. Forma <i>hardwickii</i> (Royle) W. J. De Wilde & Duyfjes (Cucurbitaceae) in Peninsular India,	<i>Journal of Threatened Taxa</i> ,	vol. 5, no. 15, pp. 5010–5012,	November 2014,	ISSN Online 0974–7907 Print 0974–7893	
4	M. R. Bodke, H. K. Gaikwad , T. B. Sonawane,	“Different property studies on ZnO quantum dots synthesized by Sol-Gel Auto Combustion”,	Journal of Adv. In applied sciences and Technology,	J., vol.1, no.2, pp 147-149.	Dec. 2014.	ISSN no. 2393-8188.	
5	T. B. Sonawane , R. A. Nanaware,	“Zig Bee Based Data Acquisition System to Monitor Heater Temp. Using Lab-VIEW”,	Int. Journal of Engineering research and Technology	J., vol. 3, no.2, pp 1745-1749,	February 2014.	ISSN 2278-0181.	2.7

Sr. No	Name of the Teacher(s) Author	Title of the paper	Name of the Journal/Proceeding/ Edited Books	Volume & Pages	Year of Publication	ISBN/ISSN.NO.	Impact Factor
6	R. P. Date	“Green initiatives in banking sector – a comparative overview”	Environment Observer	vol 18, pp. 78-84,	January. 2014.	ISSN 2320-5997	
7	U. R. Wayase, M. G. Shitole,	“Effect of plant growth regulators on organogenesis in tomato (<i>Lycopersicon esculentum</i> Mill) Cv Dhanashri”.	International Journal of Pure and Applied Science Technology,	vol. 20, no.2 pp 65-71,	2014.	ISSN 2229-6107	1.75
8	R. S. Zunjarrao, A. K. Pande, K. D. Gopale, M. Phalke , O. Joshi, A. Kindre, S. Y. Paranjpe ,	“Studies on the Survey and Natural History of Tetrigids (Tetrigidae: Orthoptera)”,	Indian Journal of Entomology,	J., vol. 76, no.1, pp. 55-63,	2014.	Print ISSN: 0367-8288. Online ISSN:0974-8172	
9	A. Chitnis, R. Thombre,	“Study of stress proteins induced by perchlorate stress in extremely halophilic archaea,”	Proteins and Proteomics,	J., vol. 5, no.3, pp.150-151,	2014	ISSN 0975-8151	
10	R. Thombre, F. Parekh, N. Patil,	“A facile method for green synthesis of stabilized silver nanoparticles using <i>Argyria nervosa</i> ”,	Nat. Prod. Plant Resour.,	J., vol. 3, no. 5. Pp.36-40,	2014	ISSN 0975-6299 ,	

Sr. No	Name of the Teacher(s) Author	Title of the paper	Name of the Journal/Proceeding/ Edited Books	Volume & Pages	Year of Publication	ISBN/ISS N.NO.	Impact Factor
11	Francis Glory, Rebecca Thombre , Fenali Parekh, Parvathi Lekshminaran,	Bioinspired synthesis of gold nanoparticles using <i>Ficus benghalensis</i> (Indian Banyan) leaf extract,	Chemical Science Transactions,	3(1), 470-474.	2014	ISSN: 2279-3318.	
12	R. Shah, R. Thombre ,	“Studies on mercury resistant bacteria and their role in detoxification of mercury contaminated effluent”,	Environment Observer,	J., vol. 19, pp.18-21,	2014	ISSN 2320-5997.	
13	R. Thombre , S. Mehta, J. Mohite, P. Jaisinghani,	“Synthesis of silver nanoparticles and its applications”,	Int. J. Pharm. Bio sci.	J., vol. 4, no. 1, pp184-192,	2014	ISSN 0975-6299,	2.95
14	Vaishnavi Digaskar, Rebecca Thombre and Radhika Oke,	Screening of extremely halophilic archaea for its biotechnological potential.	Int J Pharm Bio Sci	; 6(1): (B) 811 – 819.	Jan, 2015		Impact Factor: 2.95
15	Radhika Oke, Rebecca Thombre and A. K. Pande,	Synthesis of plant-mediated silver nanoparticles using <i>Tylophora indica</i> merr. (Pittakari) leaf extract and evaluation of its antimicrobial and anticancer activity,	Int J Pharm Bio Sci	6(1): (P) 311 – 318.	Jan, 2015		Impact Factor: 2.95 , SJR – 0.288.
16	Rebecca Thombre and Radhika S. Oke ,	Study of stress proteins induced by temperature stress in extremely halophilic archaea, <i>Haloferax mediterranei</i> .	International Journal of Current Microbiology and Applied Sciences.	Issue 2	2015		2.3

Sr. No	Name of the Teacher(s) Author	Title of the paper	Name of the Journal/Proceeding/ Edited Books	Volume & Pages	Year of Publication	ISBN/ISSN.NO.	Impact Factor
17	Anjali Sardesai, Vilas Kharat, Pradeep Sambrey, Ashok Deshpande	"Efficacy of Fuzzy-Stat Modelling in Classification of Gynaecologists and Patients"	Journal of Intelligent System.	Issue 2	2015		

Part B Annexure VI-a (Criteria III) : Text Books written by Staff

No	Author	Dept	Title	Publisher	ISBN/ISSN
1	Prof. Anjali Sardesai	Computer Science	Soft Computing	Vision Publication	978-93-5016-147-0
2	P. G. Dixit, P.S. Kapre	Statistics	Continuous probability distributions	Nirali	978-93-5164-016-5
3	P.S. Kapre V.R. Pawagi	Statistics	Discrete Probability Time series and R- software – I	Nirali	978-93-5164-015-8
4	P. G. Dixit, B. G. Kore	Statistics	Statistical methods –I	Nirali	978-93-5164-155-1
5	Prof. P. G. Dixit, B. G. Kore	Statistics	Probability distributions – I (Shivaji University, Kolhapur)	Nirali	978-93-5164-154-4
6	P. G. Dixit	Statistics	Business statistics	Nirali	978-93-5164-178-0
7	Alandkar P.G. Dixit, N.J. Dhanshetti	Statistics	Descriptive Statistics –I (Paper I)	Nirali	978-93-83971-52-7
8	Alandkar P.G. Dixit, N.J. Dhanshetti	Statistics	Descriptive Statistics II (paper III)	Nirali	978-93-83971-54-1
9	Alandkar P.G. Dixit, N.J. Dhanshetti	Statistics	Probability and Probability Distributions II (Paper II)	Nirali	978-93-83971-53-4
10	Alandkar P.G. Dixit, N.J. Dhanshetti, V.R.Prayag	Statistics	Probability and Probability Distributions II (Paper IV)	Nirali	978-93-83971-55-8
11	P. G. Dixit and P.S. Kapre, Prof. Pawagi	Statistics	Statistical Methods and Use of R- software	Nirali	978-93-83971-284-4
12	P. G. Dixit. P.S. Kapre, V.R. Pawagi	Statistics	Sampling Distributions and Inference (Paper II)	Nirali	978-93-83971-283-1
13	P. G. Dixit. P.S. Kapre	Statistics	Probability Distributions II	Nirali	
14	P. G. Dixit, B. G. Kore	Statistics	Statistical Methods S.Y. B.Sc (Paper VIII)	Nirali	978-93-83971-430-9

No	Author	Dept	Title	Publisher	ISBN/ISSN
15	Prof. P.G. Dixit	Statistics	Business Statistics –IV	Nirali	978-93-83971-448-4
16	Prof.. P.G. Dixit Prof. A. V. Rayarikar	Statistics	Business Mathematics –III	Nirali	978-93-83971-081-3
17	Prof. P. S. Chirputkar, Prof. P.S. Kapre	Statistics	Summary of Results and Problems for Computer Science students	Nirali	
18	Prof. P.G. Dixit, Prof. P.S.Kapre	Statistics	ST 212 Continuous Probability Distributions I S.Y.B.Sc.SemI	Nirali	978-93-5164-016-5
19	Prof. P.G. Dixit, Prof. P.S. Kapre, Prof. V. R. Pawagi	Statistics	ST 211 Discrete Probability Distributions, Time Series And R- Software	Nirali	978-93-5164-015-8
20	Prof. P.G. Dixit, Prof. P.S. Kapre, Prof. V. R. Pawagi	Statistics	ST 221 : Statistical Methods and use of R- Software S.Y.B.Sc. SemII (Paper –I)	Nirali	978-93-5164-282-4
21	Prof. P.G. Dixit, Prof. P.S. Kapre, Prof. V. R. Pawagi	Statistics	ST 222 : Statistical Distributions and Inference S.Y.B.Sc. Sem II (Paper –II)	Nirali	978-93-5164-283-1
22	Prof. P.G. Dixit, Prof. P.S. Kapre	Statistics	Probability Distributions-II (Paper-VII) Shivaji University,Kolhapur Sem IV	Nirali	
23	P.P.Kanekar, A.A.Joshi, S.O.Kulkarni, S.B.Borgave, S.S.Sarnaik, S.S.Nilegaonkar, A.S.Kelkar, R.S. Thombre	Biotechnology	Biotechnology and Bioinformatics-Advances and Applications for Bioenergy (Book chapter)	Apple Academic Press and CRC-Taylor and Francis Group	9781771880015
24	Rebecca Thombre, PP Kanekar	Biotechnology	Industrial Biotechnology Sustainable Production and Bioresource Utilization (Book Chapter)	Apple Academic Press and CRC-Taylor and Francis Group	9781771882699

No	Author	Dept	Title	Publisher	ISBN/ISSN
25	Rebecca Thombre and Sonali Joshi	Biotechnology	Industrial Biotechnology Sustainable Production and Bioresource Utilization (Book Chapter)	Apple Academic Press and CRC-Taylor and Francis Group	9781771882699
26	Shilpa Mujumdar, Shraddha Bashetti, Sheetal Pardeshi and Dr. Rebecca Thombre	Microbiology	Industrial Biotechnology Sustainable Production and Bioresource Utilization	Apple Academic Press and CRC-Taylor and Francis Group	9781771882699
27	Sourabh Mehta, H. Muthurajan and Rebecca Thombre	Microbiology	Advances in Biotechnology and Bioinformatics	Book Series, 2014, Volume 6: BIO-NANTECHNOLOGY	
28	Rebecca Thombre, Vaishnavi Joshi and Radhika Oke	Microbiology	Industrial Biotechnology Sustainable Production and Bioresource Utilization	Apple Academic Press, Inc.,	Hard ISBN: 9781771882699, E-Book ISBN: 9781771882620
29	Dr. Wagnare Y.R.	Commerce	Corporate Accounting	Atharva Prakashan	
30	Prof. S. R. Chaudhari	Electronic Science	Analog System	Nirali Publication	
31	Prof. S. R. Chaudhari	Electronic Science	Digital System Hardware	Nirali Publication	
32	Prof. S. R. Chaudhari	Electronic Science	The 8051 Architecture, Interfacing and Programming	Nirali Publication	935164295-
33	Prof. S. R. Chaudhari	Electronic Science	Communication Principles	Nirali Publication	935164296-8

Part B Annexure VII-a (Criteria III) : List of Ph.D. guides in college

No.	Name	Subjects	Period of recognition
1.	Dr. R. S. Zunjarrao	Botany	29/08/2005 to 28/08/2013
2.	Dr. Mrs. N. M. Patil	Botany	08/05/2012 to 07/05/2020
3.	Dr. Mrs. S. S. Puranik	Zoology	21/02/2013 to 20/02/2021
4.	Dr. H. V. Ghate	Zoology	19/06/2009 to 18/06/2017
5.	Dr. Y. R. Waghmare	Commerce	14/03/2012 to 13/03/2020
6.	Dr. A. V. Kamble	Commerce	24/11/2012 to 23/11/2020
7.	Dr. Mrs. M. M. Satam	Economics	23/04/2010 to 22/4/2018
8.	Dr. Abhay Shende	Economics	19/01/2010 to 18/01/2015
9.	Dr. Mrs. S. L. Taware	Marathi	20/03/2012 to 19/03/2020
10.	Dr. Mrs. Sanjivani Rahane	Commerce	17/08/2012 to 16/08/2020
11.	Dr. R. B .Barmukh	Botany	20/02/2015 to 19/02/2023
12.	Dr. Mrs. S. S. Mujumdar	Microbiology	08/05/2015 to 07/05/2020

Part B Annexure VII-b (Criteria III) : Students Ph.D and M.Phil in college

No	Name of the Student	Subjects	Topic of Research	Name of the Guide	Date of Registration
1	Mr. Prashant D. Mohite	Commerce	A study of interrelationship between stress level and productivity among Pune Mahanagar Parivahan Mandal Ltd. (PMPML) Bus driver and conductor	Dr. S. D. Pawar	Ph. D. Awarded on 31 st May 2014
2	Mr. Suneel A. Kelkar	Commerce	Strength of candlestick graph as tool for predicting prices of shares included Nifty index.	Dr. Ravi M. Chitnis	Ph. D. Awarded on June 2014
3	Mr. Dhondibhau S. Borkar	Commerce	Impact of IT of efficiency of banking Industry.	Dr. V. S. Mangnale	Ph. D. Awarded on 31 st May 2014
4	Mr. Virendra Vasant Tatake	Commerce	A Study of Performance of Selected Index Mutual Funds and Investors' response to Index Mutual Funds 'Investments'	Dr. Y. R. Waghmare	DOR. 28-08-2010 Letter Ref. No. PGS/9721 Dated 9/12/2012
5	Mr. Anil Vinayakrao Jagtap	Commerce	A Study of Disclosure of Accounting Policies in Financial Reports of Selected Companies in India	Dr. Y. R. Waghmare	DOR- 14/01/2011 Letter Ref. No. PGS/8 dated 2/01/2012
6	Mr. Yuvraj Rajaram Thorat	Commerce	Fianacial Analysis of Regulated Agriculture Produce Market Committees in Maharashtra with Special Reference to Pune District.	Dr. Y. R. Waghmare	DOR – 28-08-2010 Letter No. 10099 / dated 30/12/2011
7	Mr. Parag Sumatilal Shah	Commerce	Designing of user satisfaction index for hotel Industry in Pune city.	Dr. Subhas Devlu Pawar	DOR. 07/07/2011 Letter Ref No. PGS/ 9907 Dated 22/12/2011

No	Name of the Student	Subjects	Topic of Research	Name of the Guide	Date of Registration
8	Mr. Prasant Dadaso Mohite	Commerce	A Study of Interrelationship Between Stress Level and Productivity among Pune Mahanagar Parivahan Mahamandal Ltd. (PMPML) Bus Drivers and Conductors.	Dr. Subhas Devlu Pawar	DOR 24/02/2011 letter Ref No. PGS/ 9838 dated 16/12/2011
9	Mrs. Savita Shatrughan Thorat	Commerce	A Critical Study of State Government's role in promotion of sericulture in Western Maharashtra	Dr. Shoba G. Dadlani	DOR 24/01/2011 Letter Ref. No. PGS / 9900 dated 22/12/2011
10	MR. Dhondibhau Sitaram Borkar	Commerce	Impact of IT on Efficiency of Banking Industry	Dr. Virbhadra Santukrao Mangnale	DOR. 23/12/2010 Ref Letter PGS/9837 dated - 16/12/2011
11	Mr. Pimple Nirbhay Sudhir	Zoology	A Study of Reproductive Biology of Genus Osteobrama vigorsil and Rohtee ogilbilii from Nira River.	Dr. Sanjay S. Kharat	20/09/2012
12	Mr. Raut Rupesh Nivruti	Zoology	Osteological and Morphological relationship among family cyprinidae fishes	Dr. Sanjay S. Kharat	10/01/2013
13	Mr. Naidu Narendra Madhukar	Zoology	Taxonomy and Biodeversity of Cerambyoid beetles (Insecta:Coepra) of Maharashtra	Dr. Hemant V. Gahte	14/01/2013
14	Mrs. Sontakke Sangita Sandip	Zoology	Cheak Embryo as Model for Understanding Biochemical and Molecular Mechanisms of Glucose induce organ damage	Dr. Savita P. Datar	05/04/2013
15	Mrs. Patil Bharati Vishwasrao	Zoology	Hydrobiological study of Tungarli and Valvan Dams of Lonavla with Special reference to aquatic insects	Dr. S. B. Patil	05/04/2013

Part B Annexure VIII (Criteria VII): Best Practices

1. Title of Practice: Use of Electronic and Computer Technology in academics and administration

• Goal

- To develop / enhance competencies in teaching, learning and research.
- To improve academics by using web based information
- Improvement in teaching and learning using web based infrastructure such as Google Apps for Education.
- To increase the efficiency of team work by increasing effective communication

• The Context

Students come from various socio-economic backgrounds with little or no access to Information Communication technology (ICT) for learning. The use of ICT by the college has positive impact on learning experience. The importance of ICT lies in focusing individual student, teacher and thus improving overall teaching learning experience. It helps to develop aptitude from descriptive to analytical, from academic to practical and to decide the future career goals.

• The Practice

- Every department of the college has received laptops and projector for conducting lecture, practical sessions and seminars.
- Internet facility is provided to all departments of the college.
- College website is developed for presenting activities of college related to academics, administration, research and student support services
- Use of Google Apps for Education for online quiz, filling up forms, making spreadsheets and power point presentations etc. Online examination software Quiz Fire is used by Department of Electronic Science to conduct internal examination.
- Library makes use of advance technologies to access online reference databases
 - Teachers and students have direct access to INFLIBNET facility of UGC
 - Web OPAC - Adequate provision of computers has been done to refer OPAC with proper instructions. Students extensively use this OPAC to locate the required book and they do not require any manual help. It saves their time.
- The college has digital library through which the staff and students get easy access to e-material.
- Digital record room enables the administrative staff to maintain the records and helps easy and quick access of records.
- **Virtual classroom:** virtual classroom facility is made available with online audio-video recording system, enabling interactive sessions with eminent professors and scientists.
- **Digital classrooms:** In digital classroom '*Mi board*' is installed which enables to teach interactive sessions including audio-video, drawing objects, recording lectures. The college has installed five digital classrooms.
- Wi-Fi connectivity on college campus
- Mobile jammer in Library Reading hall
- ICT in sports : Live matches are recorded and those are replayed in Gymkhana department for the players to learn the tactics, to understand and avoid the mistakes during play and to improve their performance.
- ICT in Languages: Independent Language laboratory with necessary software
- ICT In Social Sciences: Collection of educational videos
- ICT in Geography : GIS mapping
- ICT in Commerce : SPSS , Tally
- ICT in Sciences
 - Most of the advanced instruments in laboratories are aided with Computer and internet facility
 - Dedicated Bioinformatics laboratory for bioinformatics study

- Mathematics and Statistics laboratories are equipped with advanced software such as Matlab, 'R' Software, Algorithm software, Problem solving software, Modeling and simulation software
- Animation laboratories have software such as Maya, Flash, Adobe Acrobat, photoshop.
- **Evidence of Success**
 - Lectures
 - Teachers are using ICT facility for preparation and presentation of lectures.
 - ICT facility is provided for guest lectures
 - Lecture notes, references, information is exchanged between teachers and students using ICT
 - Practical sessions
 - The ICT facility is used for demonstration of practical sessions and their standardization.
 - Google Apps for Education
 - The students and teachers use official email IDs to exchange the information.
 - The online software helps to organize various tasks in teaching and learning.
 - ICT in sports: increase in medals and championship in gymkhana department.
 - ICT in languages -
 - Significant increase in the interest of the students in learning foreign languages is observed because of the specialization implemented in the subject.
 - The quality of home assignment and projects has increased because of access to digital library and electronic resources.
 - The employability of the students has increased.
 - The students design, Program and evaluate elementary tasks in regular Lectures, practicals and Projects using computers.
 - The number of publications in national and international journals, poster presentations in State, National / International conferences has increased because of ICT facility.
 - The students access various educational websites and online examinations for preparation of various competitive examinations
- **Problems Encountered and Resources Required**
 - Technical Problems related to presentation
 - Antivirus upgradation,
 - High speed internet.
 - Computers to Students ratio: The college has 404 desktops. The computer-student ratio is 1:11.
 - Orientation of staff and students for using advanced technology.
 - Encouragement for more applications of ICT
 - The number of virtual classroom should be increased.
 - Advanced software and hardware should be purchased for subjects such as Bioinformatics / Animations / Graphics / Modeling and Simulations
 - Robotics and feedback devices
 - Need of ICT for Drama and Music

2. Title of Practice: Green Campus Initiative

- **Goal**
 - To increase environmental awareness among students, staff of the college and among population in the vicinity of the college.
 - To minimize the environmental pollution in and around college campus.
 - To minimize the use of PMC water resources by installing wastewater recycling plant and rain harvesting plant.
 - To use renewable energy resource particularly solar and wind energy .
 - To establish Bio-gas plant for the disposal of wet garbage this can be used as fuel source to the college canteen.
 - To study and maintain biodiversity of campus.

- To quantify carbon foot print and find out solutions to minimize it.
- To support and implement ‘Swachh Bharat Aabhiyan’.
- **The Context**
Clean environment is the basic necessity for human being for health and efficiency. Mostly limited availability of public transport compelled increased use of personal vehicles which is one of the reasons to increase pollution in and around campus. Chemical experimentation in the college laboratories emits green house gases (GHG). It adds to the environmental pollution. Water is scarce natural resource hence needs to be used rationally. Solar energy can be the potential replacement for conventional electricity.
- **The Practice**
The Green Campus Initiative practices are as follows:
 - **Green Audit :**
College consulted Dr. Sunil D. Kulkarni for quantifying the green house gas (GHG) emitted in the campus for the academic year 2014-2015. The green audit report is prepared by adhering to the standards provided by ISO/DIS 14067, 2012 and report was submitted in July 2015. The GHG quantification is done in terms of carbon foot prints (CFP). The carbon foot prints are expressed as Carbon dioxide equivalents (CO₂e). Twenty nine departments of the college were audited for the emission of GHG directly or indirectly.
 - **Biodiversity audit :**
The Biodiversity audit was conducted for our college during the period from May 2015 to June 2015. The report of “**Biodiversity Assessment of Modern Educational Campus, Shivajinagar**” was submitted to College authorities.
The study was conducted as a rapid biodiversity survey and systematic photo-documentation as per the directives given by the Principal, Modern College of Arts, Science and Commerce Pune-05. Hence present study can be considered as a snap-shot of biodiversity of the Modern Educational Campus area. Systematic documentation coupled with measures for enhancement and protection will prove to be a prudent step towards ‘environment protection and green initiative.
The site visits and the collected database showed following key findings for the Biodiversity Assessment of Modern College Pune.
Biodiversity study mainly refers to the assessment of biodiversity of Modern college campus. This has also been referred to as survey of Modern Educational campus
Key findings :
 - i) A total of 107 species of flora were observed during the biodiversity survey of the Modern Educational Campus.
 - ii) 13 species of birds were observed during the survey.
 - iii) 10 species of butterflies were seen.
 - iv) 2 species of mammals, 1 amphibian specie and 1 mollusc species was recorded.
 - v) 3 IUCN listed species of conservation significance were recorded in the survey.
 Results :
The results of the biodiversity survey are as following:
 - i) The campus demonstrated the presence of more than 15 species of flora which have been listed under the IUCN Red list.
 - ii) Out of these 15 species of plants, 3 species, namely *Pterocarpus marsupium* (Bibala), *Santalum album* (Chandan) and *Jacaranda mimosifolia* (Neelmohar) are listed under the Vulnerable Category of IUCN Red list.

iii) On similar lines, 11 bird species, 2 mammal species and 1 amphibian species have been listed under the IUCN Red list.

■ **Nameplates on trees.**

Trees are an integral part of human life. To create awareness among people about botanical name, common name, plant family and significance of these trees we have undertaken a program to label the road side trees near college campus.

In Nov-2008, nearly 800 trees along the road sides of J.M. Road, F.C. Road, Modern college Road were identified and nameplates were displayed on tree trunks. During 2013-14 and 2014-15 nearly 350 road side trees along Ghole road and Apte Road were identified and name plates were displayed on tree trunks.

■ **Biomedical Waste Disposal :**

Biomedical waste generated by life science departments of our college is collected periodically by the **PASCO** Environmental Solution Pvt. Ltd. for its proper disposal. Our college has signed MoU with the firm. This company is registered with Pune Municipal Corporation to treat biomedical waste by various treatments. The company has issued a certificate to that effect for the period 3/12/2014 to 2/12/2015.

■ **e-waste Management**

From 2012 Department of Electronic Science has set in motion the issue of e-waste management. Due to advancement in technology, number of electronic gadgets are manufactured and marketed. These products become outdated after few months. Due to less utility these products are discarded and updated versions are adopted. Since these products contain some kinds of hazardous materials such as lead, zinc, lithium batteries, tin etc. Improper disposal of these products is dangerous for living beings. Therefore management of e-waste is very important issue. e-waste management can be done by number of ways such as reduce, reuse and recycle. Our college has therefore taken lead and had organized a national conference 'Hazardous e-Waste Management' on same topic. Thus contributing to creating awareness in the society and minimizing the hazardous effects of e-waste.

Furthermore, our college also conducted a campaign in rural area and Pune city area. A survey is carried by NSS volunteers in the village Phulgaon. A rally was organised in this village and volunteers visited the families to explain concept of e-waste management and collected the data. Students from T.Y.B.Sc. carried out survey for e-waste management through college research scheme of 'Yuva Sanshodhak'. In December 2013 National Conference on 'Hazardous e-Waste Management' was organized by our college. It is proposed to establish e-waste collection and systematic disposal process through Post Graduate research centre in Electronic Science.

■ **Biodegradable Urban Waste management**

Since January 2010, Department of Zoology is conducting the **Integrated Vermitechnology Training Course (IVTC)** in collaboration with a renowned organization 'INORA' (Institute of Natural Organic Agriculture), Pune. Two batches are conducted per year. Students and general citizens enthusiastically participate in this training course.

■ **Use of Renewable Energy**

Two solar panels with 1 KW capacity have been installed at roof top. Using these solar panels we are lighting 25 lamps which are installed in staircase of East wing and 12 lamps in principal's office. The backup of this system is about 6 hours per day.

Solar Distillation Plant having distillation capacity 25 lit. per day is also installed. Department of Physics has taken initiative in starting renewable energy course as one of the specialized

course at T. Y. B. Sc. and also planning to start Renewable Energy as a specialization course for M. Sc.

■ **Microscale experiments in Chemistry**

The Department of Chemistry is practicing microscale technique in Analytical Chemistry Practicals. For this purpose special glassware are procured such as Pasteur pipette, Hickman Head, Hirsch funnel and Special microscale methods such as double burette titration are adopted. This method reduces the volume of solutions required to about one fourth of that in the traditional method.

■ **Energy audit:**

Energy Audit of consumption of electricity in the College was entrusted to 'Enrich Consultants' Pune. The objectives of the audit includes study the energy consumption pattern of the facilities, identify the areas where potential for energy/cost saving exists and prepare proposals for energy/cost saving along with investment and payback periods.

We have implemented no cost and low cost recommendations according to the guidelines given in Save Energy Program of MEDA.

Energy Audit also gives focused attention to energy cost and cost involved in achieving higher performance with technical and financial analysis. The best alternative is selected on financial analysis basis.

Following Energy Efficiency Improvement measures were implemented by the college.

- Automatic Power Factor Correction systems were installed for main building, east wing and administrative building.
 - Energy Saver Circuits were installed for old air conditioners
 - Replacing Conventional Ballasts for Fluorescent Tube Lights (FTL) with Electronic Ballasts
 - Replacing Tube Lights (FTL) with LED Tube Lights
 - Providing Solar PV system for part load operations during day time
 - Parent body has taken initiative to install Solar-Wind Hybrid Electricity Generation Plant having capacity of 100 kW.
 - Total savings during the energy audit is estimated at 10.10 Lakhs which is 23 % of the total energy cost with an overall payback period of 3 Years.
 - Rain water harvesting
 - Sewage treatment
 - Biogas plant near canteen
 - Digital herbarium
 - Animal dissection simulation
 - Zero garbage campus
 - e-Governance
 - Digital library
- **Evidence of Success**
- Electricity failure will not affect the availability of light during the period of power cut by MSEB due to solar system installation. Especially eastern building gets the benefit.
 - Electricity bills are reduced and we have achieved 91 power factor for the 7% discount in the electricity bill.
 - The college is running vermitechology training programme since last five years.
 - Continuous water supply is available even during the period of water scarcity.
 - Problem of disposal of garbage is solved by Bio-gas plant.
- **Problems Encountered and Resources Required**
- These activities have been initiated based on the available funds and those could be further enhanced upon receiving funding for the same.