

Government of Karnataka
Department of Collegiate Education

**MAHARANI'S SCIENCE COLLEGE FOR
WOMEN**

Palace road, Bangalore 560001

**RE- ACCREDITATION – THIRD CYCLE
SELF STUDY REPORT**

**Submitted to
National Assessment and Accreditation Council
September 2014**

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PREFACE

It gives me immense pleasure to submit the Self Study Report (SSR) of our college to the National Assessment & Accreditation Council, Bangalore for Re-accreditation (Cycle III). The College has been involved in the preparation for its 3rd cycle of accreditation for the past one year.

This exercise has provided us an opportunity to review and scrutinize the institutional progress and has further strengthened our quest for Quality. In the post-accreditation period, the Internal Quality Assurance Cell has been instrumental in raising the bar of excellence in adopting and implementing diverse quality enhancing measures. The college has strived to comply with almost all the recommendations of the Peer Team in achieving its goals. This report is the outcome of the collective efforts of all members in the college. Care has been taken to involve a broader heterogeneous group of faculty members including younger generation in the preparation of this SSR. I deeply appreciate the wide involvement and sincere, collaborative effort of the entire team.

A premier Government Women's' institution, 'Maharani's Science College for Women, Bangalore' completes 75 years of its existence and is marching ahead to scale greater heights. At this significant juncture we eagerly look forward to the peer team visit.

Prof. B Lalithamma

Principal

Executive Summary

Maharani's Science College for Women, Bangalore is acknowledged as one of the most prestigious science education centre for women in Karnataka. The institution's pedigree can be traced back to 1938 and to the benevolent initiative of the erstwhile Maharaja of Mysore, His Highness Sri Nalvadi Krishnaraja Wodeyar. It stands as a testimony to his glorious vision of providing education exclusively to girls. The institution has since then taken giant strides forward to become a popular choice of the milieu, aspiring to get quality education at nominal cost. The institution has completed a yearlong celebration commemorating 75 years of its existence and is marching ahead with the vision to scale greater heights.

The college with its aesthetically designed heritage building is ensconced amidst a sprawling campus of over 11.4 acres and is located in close proximity to Vidhana Soudha—the seat of power in the state. The institution has obtained 2(f) and 12 (B) tag of the UGC and has been reaccredited by NAAC with B in 2009 with a CGPA of 2.78. with incremental growth, the institution is at third cycle of accreditation.

The college is affiliated to Bangalore University and follows the semester program and now CBS for I semester students. Spanning the spotlight from fundamentals to applied aspects of major science subjects, the college offers **Undergraduate courses** in thirteen combinations. In addition, the college also has **Post Graduate courses** in Microbiology, Biochemistry, Mathematics, Physics and Computer Application. Several of these subjects have interdisciplinary approach in their curriculum. Improving the employability skill set of students, the college offers **Add-on course** in Biodiversity and medicinal plants. Personality development and leadership quality is developed through special training programs under **Naipunya nidhi**.

The college has ample infrastructure in terms of sufficient number of well furnished technology enabled classrooms, good laboratories with modern equipments and computer facility in every department. The **conference hall** with audio visual facility serves as the venue to host academic and extracurricular programmes. A separate two storied **library** building with around 50000 books, 32 reputed journals, 21 magazines, 8 subscribed newspapers and collection of over 300 CD/DVD's along with Infflibnet and internet facility has become a favourite hub for bibliophiles. The **Bioinformatics Infrastructure Facility**, first of its kind in a Government college with two servers, 10 computers, Network Printer, scanner and copier with internet, supports research culture to a great extent. To promote excellence in **sports** the college has a basketball court, gymnasium and provision for athletics, throw ball, volley ball and other field games. The college also has a separate **Hostel building** which can accommodate over 250 students. A tectonic expansion through a new three storey annex building has allowed the establishment of the PG block.

There are 90 permanent highly **qualified teachers** on the rolls of the college. There are 46 Ph.D holders and 25 M.Phil degree holders among the teaching fraternity. The research tenor of the college is being adequately strengthened with most of the teachers being involved in research activities either working for their doctoral degree or for major/ minor research projects. The college has availed 26 minor and 4 major **Research projects** during the last five years. The faculty have published around 200 **research publications** in the last five years. Research culture is ignited among students through project work in various departments. The quality of teaching - learning process is in the upward spiral with the incorporation of innovative pedagogical practices. The college offers a **remedial coaching** program for students from marginalized sections. The academic performance curve has shown significant ascent during the last five years.

Continuous progress in teaching- learning being the genuine concern of the college, the increasing number of faculty organizing events, participating and presenting papers at National and International conferences is emblematic of the mood in the college. The

college has conducted 10 national/ state level conferences/ seminars and 5 workshops in the last 5 years. **Extension activities** like NCC, NSS and Rangers instill discipline and widen human sympathies among students. To increase the range and richness of educational experience various fora and clubs have been created. The **placement cell** brings recruiters, soft skill trainers and motivational speakers in contact with students to enhance employability. **Weekly assembly** creates institutional stamp of personality reflecting its ethos and very special addition to the programmes conducted.

The total student strength of the college is 1300 and has been increasing which is commendable when most colleges are showing a decline in admission of basic science students. The student entrants stretch across the prosperity spectrum ranging from underprivileged to wealthy sections. However the greater flux is from the former. To inculcate passion for perfection in academics, the college provides scholarships and endowment prizes. The Government's initiative to waive off tuition fee and lab fee encourages students of economically constrained background to pursue higher education.

To make self assessment both introspective and objective the college obtains **feedback** from students about academics, extracurricular activities and campus experience through well designed feedback forms. An active **counseling centre** with 19 trained counselors addresses the academic and emotional issues of students. The **antiragging cell and prevention of sexual harassment cell** of our college is instrumental in creating a feel safe zone in the sprawling campus.

The **mentor system** enhances the feel good factor for the students and closely knits the students with the college. Regular **parent teacher meetings** are the bridges that connect all stakeholders. The **Alumni Association** links the old students with their alma mater and also contributes to the overall development of the college. The college has its footprints in diverse areas of life like science and technology, fine arts, theatre,

entrepreneurship, politics through its illustrious alumni who occupy prominent and respectable positions in various spheres of life.

The college has a permanent Grade I Principal who conducts the day to day functioning of the institution with assistance from the accounts section and the office. Some of the multifarious benefits of good governance are participatory spirit, sense of belonging, efficiency among employees and approachability, quick sorting of issues on the part of administration. It is also noteworthy that progressive thinking has permeated into the innards of the college.

The **Internal Quality Assurance Cell** has been successful in hardwiring quality consciousness into all the stakeholders. It has conducted quality checks and taken measures to improve the overall performance of the college.

In the **post accreditation tenure** the college proposes to foster global competencies among students. In this direction the college plans to continue its efforts to improve its infrastructure, to establish research center and a Central Instrumentation Facility to augment the ongoing research activities. Creation of an eco friendly campus being our ongoing endeavor we plan to supplement our energy needs by harvesting solar energy, recycling waste water and integrating solid waste management. Empowering women being our vision the college intends to implement programs to enhance their self esteem, confidence and entrepreneur capabilities.

In its worthwhile existence of over seven decades, the college has inculcated a value system developing sound work ethics through self discipline, conveyed solidity, efficiency and assuredness to society by training of productive individuals with social commitment which is a fulfillment to the college in itself!

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1. Profile of the College

1 Name and Address of the College:

Name :	Maharani 's Science College for Women	
Address :	Palace Road, Bangalore	
City :	Pin : 560001	State : Karnataka
Website :	www.karnataka.gov.in/mscwb	

2 For communication :

Designation	Name	Telephone with STD code	Mobile	Fax	Email
Principal	Prof. B Lalithamma	O:08022262796 R:	9448346600	08022342438	mcs_w_bangalore1@rediffmail.com
Vice Principal	N/A	O: R:			
Steering Committee Co-ordinator	Dr.Kavitha B	O:08022262796 R:08022193707	9886494802		bkavinair@gmail.com

3. Status of the Institution:

- Affiliated College
- Constituent College
- Any other (specify)

4. Type of Institution:

- a. By Gender
- i. For Men
- ii. For Women
- iii. Co-education

b. By Shift

- i. Regular
- ii. Day
- iii. Evening

5. Is it a recognized minority institution?

- Yes
- No

If yes specify the minority status (Religious/linguistic/ any other)
(Provide the necessary supporting documents)

6. Sources of funding:

- Government
- Grant- in-aid
- Self-financing (UGC Add on Course)
- Any Other

7 a. Date of establishment of the college: 23/10/1938

b. University to which the college is affiliated /or which governs the college

(If it is a constituent college)

Bangalore University

c. Details of UGC recognition:

Under Section	Date, Month & Year (dd-mm-yyyy)	Remarks(If any)
i. 2 (f)	30/07/1994	Certificate of recognition u/s 2 (f) enclosed
ii. 12 (B)	30/7/1994	Certificate of recognition 12 (B) enclosed

(Enclose the Certificate of recognition u/s 2 (f) and 12 (B) of the UGC Act)

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

Under Section/ clause	Recognition/Approval details Institution/Department Programme	Day, Month and Year (dd-mm-yyyy)	Validity	Remarks
i.	MCA	2006	Till date	Approval letter enclosed

(Enclose the recognition/approval letter)

8. Does the University Act provide for autonomy of Affiliated/ Constituent Colleges?

Yes No

If yes, has the college applied for autonomy?

Yes No

9. Is the college recognized

a. by UGC as a College with Potential for Excellence (CPE)?

Yes No

If yes, date of recognition: (dd/mm/yyyy)

b. for its performance by any other governmental agency?

Yes No

If yes, Name of the agency and

Date of recognition: (dd/mm/yyyy)

10. Location of the campus and area in sq.mts:

Location *	Urban
Campus area in sq. mts.	11.43 acres
Built up area in sq. mts.	4707.98 sq.mt

(* Urban, Semi-urban, Rural, Tribal, Hilly Area, Any others specify)

11. Facilities available on the campus (Tick the available facility and provide numbers or other details at appropriate places) or in case the institute has an agreement with other agencies in using any of the listed facilities provide information on the facilities covered under the agreement.

- Auditorium/seminar complex with infrastructural facilities Yes
- Sports facilities
 - * play ground -Yes
 - * swimming pool-No
 - * gymnasium-Yes
- Hostel
 - * Boys' hostel Not applicable
 - i. Number of hostels
 - ii. Number of inmates
 - iii. Facilities (mention available facilities)
 - * Girls' hostel
 - i. Number of hostels : one
 - ii. Number of inmates : 270
 - iii. Facilities (mention available facilities)-Rooms-70
Recreation hall
Drinking Water
Security
- Residential facilities for teaching and non-teaching staff (give numbers available — cadre wise) –Government Quarters Available
- Cafeteria — Yes
- Health centre – Yes

First aid, Inpatient, Outpatient, Emergency care facility, Ambulance.....

Health centre staff –

Qualified doctor	Full time	<input type="checkbox"/>	Part time	<input checked="" type="checkbox"/>
Qualified nurse	Full time	<input type="checkbox"/>	Part time	<input type="checkbox"/>

- Facilities like banking, post office, book shops - yes
- Transport facilities to cater to the needs of students and staff –No
- Animal house - No
- Biological waste disposal -Yes
- Generator or other facility for management/regulation of electricity and voltage No
 - Solid waste management facility No
 - Waste water management No
 - Water harvesting Yes

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

Sl. No	Programme level	Name of the Programme/ Course	Duration	Entry Qualification	Medium of Instruction	Sanctioned / Approved Student strength	No.of Students admitted
i	Under-Graduate	PCM	3 years	PUC/12 Pass	English	114	101
		PMCs				60	60
		PME				60	42
		CBMi				45	16
		CZMi				45	45
		CBZ				72	78
		BZP				72	23
		CZBt				60	29
		CBBt				60	24
		BiSBt				20	20
		EMSt				20	16
ii	Post-Graduate	Microbiology	2 years	B.Sc.	English	15	14
		Biochemistry				30	26
		Mathematics	3 years			30	30
		Physics				15	15
		MCA				60	38
iii	M.Phil						
iv	Ph.D.						
v	Certificate course						
vi	UG Diploma						
vii	PG Diploma						
viii	Any Other (specify and provide details)						

13. Does the college offer self-financed Programmes?

Yes No

If yes, how many ?

14. New programmes introduced in the college during the last five years if any

Yes	✓	No		Number	2
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15. List the departments: (respond if applicable only and do not list facilities like Library, Physical)

Faculty	Departments (eg. Physics, Botany, History etc.)	UG	PG	Research
Science	Physics	3 years	2 years	
	Mathematics			
	Chemistry/Biochemistry			
	Microbiology		3 years	
	Computer Science			
	Statistics			
	Economics			
	Zoology			
	Botany			
	Electronics			
	Sericulture			
	Biotechnology			
	Psychology			
Arts				
Commerce				
Any other (Specify)				

16. Number of Programmes offered under (Programme means a degree course like BA, BSc, MA, M.com...)

a. annual system		<input style="width: 80px;" type="text" value="0"/>
b. semester system		<input style="width: 80px;" type="text" value="2"/>
c. trimester system		<input style="width: 80px;" type="text" value="0"/>

17. Number of Programmes with

- | | |
|---|---|
| a. Choice Based Credit System | 0 |
| b. Inter/Multidisciplinary Approach | 0 |
| c. Any other (specify and provide details) | 0 |

18. Does the college offer UG and/or PG programmes in Teacher Education?

Yes No

If yes,

- a. Year of Introduction of the programme(s).....
(dd/mm/yyyy)
and number of batches that completed the programme
- b. NCTE recognition details (if applicable)
Notification No.:
Date:dd/mm/yyyy)
Validity:.....
- c. Is the institution opting for assessment and accreditation of Teacher Education Programme separately?
Yes No

19. Does the college offer UG or PG programme in Physical Education?

Yes No

If yes,

- a. Year of Introduction of the programme(s).....
(dd/mm/yyyy)
and number of batches that completed the programme
- b. NCTE recognition details (if applicable)
Notification No.:
Date:.....(dd/mm/yyyy)
Validity:.....
- c. Is the institution opting for assessment and accreditation of Physical Education Programme separately?

Yes No

20. Number of teaching and non-teaching positions in the Institution

Positions	Teaching Faculty						Non-Teaching St aff		Technical Staff	
	Professor		Associate Professor		Assistant Professor		*M	*F	*M	*F
	*M	*F	*M	*F	*M	*F				
Sanctioned by the Sate Government Recruited			12	25	22	31	15	19	0	0
Yet to recruited										
Sanctioned by the Management/ society or other authorized bodies Recruited										
Yet to recruit										

21. Qualifications of the teaching staff:

Highest qualification	Professor		Associate Professor		Assistant Professor		Total
	Male	Female	Male	Female	Male	Female	
Permanent teachers							
D.Sc./D.Litt.							
Ph.D.			5	17	15	9	46
M.Phil.			4		7	14	25
PG			1	5	3	10	19
Temporary teachers							
Ph.D.							
M.Phil.							
PG							
Part-time teachers							
Ph.D.							
M.Phil.					2	2	4
PG					2	11	13

22. Number of Visiting Faculty /Guest Faculty engaged with the College.

17

23. Furnish the number of the students admitted to the college during the last four academic years.

Categories	2010-2011		2011-2012		2012-2013		2013-2014	
	Male	Female	Male	Female	Male	Female	Male	Female
SC		135		153		169		178
ST		23		19		29		39
OBC		453		324		376		535
General		311		496		392		318
Others								

24. Details on students enrollment in the college during the current academic year:

Type of students	UG	PG	M. Phil	Ph.D	Total
Students from the same state where the college is located	1060	280			1350
Students from other states of India	10				10
NRI Students					
Foreign Students					
Total	1350				1350

25. Dropout rate in UG and PG (average of the last two batches)

UG 17% PG NIL

26. Unit Cost of Education

(Unit cost = total annual recurring expenditure (actual) divided by total number of students enrolled)

(a) including the salary component

Rs. 82,012.00

(b) excluding the salary component

Rs.1752.00

27. Does the college offer any programme/s in distance education mode (DEP)?

Yes No

If yes,

- a) is it a registered centre for offering distance education programmes of another University

Yes No

- b) Name of the University which has granted such registration.

- c) Number of programmes offered

- d) Programmes carry the recognition of the Distance Education Council.

Yes NO

28. Provide Teacher-student ratio for each of the programme/course offered

1:15

29. Is the college applying for

Accreditation : Cycle 1 Cycle 2 Cycle 3 Cycle 4

Re-Assessment:

(Cycle 1 refers to first accreditation and Cycle 2, Cycle 3 and Cycle 4 refers to re-accreditation)

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

Cycle 1: 29/4/2003 Accreditation Outcome/Result B+

Cycle 2: 15/6/2009 Accreditation Outcome/Result B 2.78

Cycle 3: _____ Accreditation Outcome/Result

** Kindly enclose copy of accreditation certificate(s) and peer team report(s) as an annexure.*

31. Number of working days during the last academic year.

32. Number of teaching days during the last academic year

(Teaching days means days on which lectures were engaged excluding the examination days)

33. Date of establishment of Internal Quality Assurance Cell IQAC

9-10-2006

34. Details regarding submission of Annual Quality Assurance Reports (AQAR) to NAAC.

AQAR (i)	30-07-2010
AQAR (ii)	15-07-2011
AQAR (iii)	29-11-2012
AQAR (iv)	27-12-2013

CRITERION I: CURRICULAR ASPECTS

1.1 Curriculum Planning and Implementation

1.1.1 Vision, mission and objectives of the institution- how these are communicated to the students, teachers, staff and other stakeholders.

Vision

Empowering women towards excellence with scientific temper and social concern

Mission

We aspire.....

To provide quality and holistic education

To prepare students for challenging careers by practicing innovative pedagogy

To develop research culture

Objectives

To build socially responsive and committed youth power

To grow as an institution of distinction in academics and research

To motivate stakeholders to understand and promote environmental sustainability

To promote institution – industry interface

To provide a platform for the expression of women’s aspirations

The Vision, Mission and objectives of the college is framed by collecting inputs from all the stakeholders. Their ideas were fine tuned and phrased into final statements by a core group.

- The statements are prominently displayed at strategic locations like principal’s chamber, departments, display boards, office & accounts section, library and hostel to communicate to all stakeholders.
- Vision, mission and objectives of the institution is highlighted in the college website and displayed permanently at the entrance of the college.

- It is a practice to enlighten the freshers about the vision and mission of the college during the orientation programme of the respective academic year.
- The college magazine 'Chilume' has a page devoted to the vision mission statement to draw the attention of all stakeholders.
- The college prospectus states the vision, mission and objectives to enlighten prospective students and their parents.
- The IQAC notice board also flashes the vision mission statement illustrating its implementation.

1.1.2 Development and deployment of action plans for effective implementation of the curriculum - details of the process through specific example(s).

The college develops action plans for effective implementation of the curriculum at the department level.

- The work allotment and distribution of syllabus.
- Maintaining work done diary.
- The curriculum delivery is effectively done through lectures, preparing supporting and reference material and power point presentations. This is supplemented by group discussions and seminars.
- INFLIBNET service is made available for the faculty and students.
- Being a science institution emphasis is given to practical curriculum implementation by procuring equipments & chemicals and above all providing individual attention to students in laboratories.
- Faculty keep themselves updated with developments in their respective fields by participating in workshops and seminars so as to provide the latest information to the students.
- The Internal Quality Assurance Cell monitors the quality of education imparted by obtaining regular feedback from the students.

1.1.3 Support (procedural and practical) to teachers (from the University and/or institution) for effectively translating the curriculum and improving teaching practices

As the college is affiliated to the Bangalore University, the college has adopted and follows the curriculum framed by the University. In the process of delivering it to the students, the college has had a steadfast gaze on applying the course contents to address the needs of the society.

- The college follows the academic calendar specified by the affiliated University for both UG and PG courses.
- University in collaboration with the various forum organizes workshops/training programmes.
- Faculty members are encouraged to attend orientation/refresher courses/Faculty development programmes.
- The college provides ICT facilities for effective translation of the curriculum.
- Student feedback on teachers and curriculum ensures quality teaching - learning process.

1.1.4 Initiatives taken up or contribution made by the institution for effective curriculum delivery and transaction on the Curriculum provided by the affiliating University or other Statutory agency.

Initiatives for effective curriculum delivery is done through framing a time-table that makes optimum use of the working hours, distribution of syllabus at the department level and monitoring effective delivery of the curriculum. Other initiatives include-

- Teachers are encouraged to use ICT based pedagogical tools
- All departments with practicals integrate Hands-on work experience.
- Special lectures are organized by inviting experts from various fields to share their expertise.

- Supportive remedial classes are being regularly conducted for the students of socially deprived class.
- Department of Collegiate education, GoK hosts Soft skills/Personality Development Programs (Naipunya Nidhi, Hossa hejje star college etc.)
- The college has over 150 computers with latest configuration to cater the needs of computer/IT related courses .
- The college offers computing facility to the students and teachers in the library and bioinformatics facility to utilize teaching learning resources for conferences, seminars and symposia to meet the needs of curriculum delivery.
- The students are encouraged to participate in educational tours/field trips.
- Library is enriched with net-work resource centre connected with WiFi connectivity and accessible to e-journals and e-books.

1.1.5 Institutional network and interaction with beneficiaries such as industry, research bodies and the university in effective operationalisation of the curriculum

The college Career guidance and Placement cell maintains professional relations with the representatives of industry and arranges for lectures to bridge the industry institution gap. The industry and institutional visits arranged by various departments from time to time keeps them abreast of the latest developments in the market. Research culture is kept alive in the campus, by inviting scholars from various fields to motivate students. Student projects are undertaken as per curriculum. The faculty is motivated to take up research projects funded by UGC, DBT, DST, VGST and SERB. Faculty members organize/participate in conferences and seminars. As members of the Board of studies (BoS) and BOE of the affiliated university and other academic institutions, the faculty is updated with the changes in the curriculum.

1.1.6 Contributions of the institution and/or its staff members to the development of the curriculum by the University

The college follows the curriculum designed by the Board of Studies (BoS) of Bangalore University. Nineteen senior faculty members of the college from 10 departments have served as members of BoS and 23 from 13 departments are members of Board of Examiners (BoE). Nine of them have served as BoE chairpersons in the last five years and 7 as subject experts for various selection process. Almost all teachers are in the panel of examiners and are involved in evaluation process. They are also actively involved in designing the syllabus and setting question papers. Workshops on the syllabi are conducted by the University where our faculty gives their inputs, taking into consideration the students' feedback, other stakeholders views and suggestions. Opinions about the curriculum are collected informally from veterans who visit the college.

1.1.7 Development of curriculum for courses offered in the Institution other than those under the purview of the affiliating university

The institution offers an Add-on course on “Biodiversity and the role of medicinal plants in primary health care” under the aegis of the department of Botany. The curriculum of this course was developed by the faculty of botany department of our college in consultation with the Head of the Department of Botany, Bangalore University. The course aims at imparting Knowledge and Hands on training to the student participants in areas of cultivation, processing and uses of medicinal plants which enhances their employability.

1.1.8 Ensuring that the stated objectives of curriculum are achieved in the course of implementation

Institution ensures the implementation of the stated objectives of curriculum by conducting periodic internal tests, student's assignments and result analysis. 25% of our graduate students are pursuing their higher studies. The Internal Quality Assurance Cell strives to ensure quality in the course of implementation.

1.2 Academic Flexibility

1.2.1 Details of the certificate/diploma/ skill development courses etc., offered by the institution and their goals and objectives

The college with the support of Department of Collegiate education, GoK offers the following soft skill programmes to students-

Program	Period	Beneficiaries	Course details	Organisations involved	Goals	
Sahayog	2009 to 2013	III B.Sc students	courses on Medical transcription and Hardware and Networking	Meta-technologies I and Critical Edge.	Overall personality development	
Vikasana	2009 to 2013	II B.Sc students	Training in soft skills			
Manavathe	2009 to 2013	II B.Sc students	Moral and ethical education	the Art of living foundation.		
Vikasana	2013 onwards	II B.Sc Students	to improve communication skills, computer skills and life skills	Meta-technologies I		
Global shapers	2012 onwards	III B.Sc and post-graduate students	for corporate leadership training and time management	World Economic forum		Improve employability and life skills
Star scheme	2013 onwards	III B.Sc students	Employability skills- IT/Banking sector/ Animation	National Skill Development Corporation		
Bioinformatics Certificate course	2006 onwards	B.Sc and M.Sc Students	Bioinformatics	Department of Biotechnology, Government of India	Create awareness about the field of bioinformatics Use of Bioinformatics in Biology	
Add on course	2009 onwards	B.Sc Students	Biodiversity and the role of medicinal plants in primary health care”	UGC	Create awareness of Biodiversity in general and medicinal plants in particular Use of	

					medicinal plants in primary health care Cultivation and propagation of medicinal plants
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1.2.2 Twinning /dual degree

The college does not offer dual degree programs

1.2.3 Institutional provisions with reference to academic flexibility

The college offers B. Sc. Course and students joining the college have a choice of 13 combinations for Undergraduate courses. Students are properly guided and given the freedom to take the subject of their choice from a wide range of options. The college offers four PG courses in Microbiology, Biochemistry, Mathematics and Physics and has the credit of being the only Government College in Karnataka to offer Masters in Computer Applications (MCA). For PG courses selection is done centrally by the University and for the MCA course selection is based on the entrance conducted by VTU.

English is the compulsory language and as electives, students can choose to study Kannada/Sanskrit/ Hindi/ Urdu/ Tamil/Telugu. Applied subjects like Biotechnology, Biochemistry, Computer science Electronics, Microbiology and Sericulture are interdisciplinary.

The university has started the credit based system (CBS) from the academic year 2014- 15 and the college follows the same.

Under the affiliation system, the University does not permit flexibility for the students to move from one discipline to another, Credit transfer and accumulation facility and Lateral and vertical mobility within and across programmes and courses

Sl.No.	Courses offered by University	Courses offered by the Institution
1	Physics, Mathematics, Computer Science	Physics, Mathematics, Computer Science (PMCs)
2	Physics, Mathematics, Electronics	Physics, Mathematics, Electronics (PME)
3	Physics, Chemistry, Mathematics	Physics, Chemistry, Mathematics (PCM)
4	Chemistry, Botany, Zoology	Chemistry, Botany, Zoology (CBZ)
5	Chemistry, Botany, Microbiology	Chemistry, Botany, Microbiology (CBMi)
6	Chemistry, Zoology, Microbiology	Chemistry, Zoology, Microbiology(CZMi)
7	Chemistry, Zoology, Biotechnology	Chemistry, Zoology, Biotechnology (CZBt)
8	Chemistry, Botany, Biotechnology	Chemistry, Botany, Biotechnology (CBBt)
9	Botany, Zoology, Psychology	Botany, Zoology, Psychology (BZP)
10	Biochemistry, Sericulture, Biotechnology	Biochemistry, Sericulture, Biotechnology (BiSBt)
11	Economics, Mathematics, Statistics.	Economics, Mathematics, Statistics(EMSt)
12	Biochemistry, Genetics, Sericulture	-
13	Biochemistry, Botany, Zoology	-
14	Chemistry, Botany, Genetics	-
15	Chemistry, Botany, Sericulture,	-
16	Biochemistry, Genetics, Zoology	-
17	Chemistry, Zoology, Sericulture	-
18	Electronics, Mathematics, Computer Science	Electronics, Mathematics, Computer Science (EMCs)
19	Computer Science, Mathematics, Statistics	Computer Science, Mathematics, Statistics (CsMSt)

The students are also encouraged to take up the Add-on-course/skill development and Certificate courses which can enhance their employability and entrepreneurship. The department of Computer Science conducted Microsoft certified Net course during February-April 2012, specifically dealing with ASP.Net for the faculty members and students.

12.4 Self-financed programmes and how they differ from other programmes, with reference to admission, curriculum, fee structure, teacher qualification, salary etc.

UGC Add on course, “Biodiversity and the role of medicinal plants in primary health care” is partly self-financed. This course is job oriented with more importance on practicals, seminars, field visits and project work. Curriculum is framed by the college, involving faculty from our college and experts from the field. This course differs from the regular course in the following aspects:

Criteria	Regular course	Self-financed course
Admission	Based on merit cum roster system	First cum first serve basis
Curriculum	Designed by Bangalore University with college faculty inputs as BOS members	Designed by committee of experts which includes faculty from the college. Syllabus is approved by Bangalore University
Fee Structure	Decided by the Government	Decided by the UGC - CDC
Teacher qualification	M.Sc. M.Phil/ NET/ SLET	M.Sc. with Technical Expertise
Salary	UGC	Decided by the UGC-CDC Rs.250 per hour

1.2.5 Details of additional skill oriented programmes, relevant to regional and global employment markets

- Under the initiative of the Department of Collegiate Education (DCE) , Govt. of Karnataka, the programme “**HosaHejje**” was being offered in the college from 2009-2013. Under this programme, special classes in soft skills were conducted for students as follows.

II yr B.Sc – **Vikasana**- communication skills, computer skills, life skills

III yr B.Sc- **Sahayog**- office management, computer hardware and networking

These classes were conducted by corporate training companies namely Critical Edge and KQES in association with the college staff.

- From the year 2013-2014, the programme “**Naipunya Nidhi**” under the DCE, is being offered in our college for students of I, II and III B.SC which aims at imparting soft skills to the students and increase their competence in the employment market.
- For selected final year and post graduate students, the programme “**Global Shapers**” offers training for corporate leadership.
- **Add on course-** “Biodiversity and the role of medicinal plants in primary health care” offered by the department of botany helps employability skills.
- **Bioinformatics certificate course** funded by Department of Biotechnology, Government of India is frequently conducted for PG and UG students to create awareness of bioinformatics in biology teaching.

1.2.6 Flexibility of combining the conventional face-to-face and Distance Mode of Education for students to choose the courses/combination of their choice’

Not applicable.

1.3 Curriculum Enrichment

1.3.1 Efforts made to supplement the University’s Curriculum to ensure that the academic programmes and Institution’s goals and objectives are integrated

In order to facilitate the integration of academic programmes with the institution’s goals and objectives, various departments organize field-trips, industrial visits, lectures and workshops. Competitions like essay writing, scientific debates and elocution are conducted in each department to stimulate the student’s scientific temperament. Science exhibitions are organised to create research interest.

Despite infusing global thinking, the college has never undermined the importance of instilling patriotism and discipline. The NCC wing of the college that was the very first battalion for Karnataka, with the first lady officer,

continues the legacy of inculcating the spirit of nationalism in our students. To impart the spirit of service among students, the NSS wing has taken up several activities including camps which are in tune with the institutional goals. Personality development, weekly assembly, extension activities and other programmes of the college makes sure that students never lose sight of moral and cultural values.

1.3.2 Efforts made to enrich and organize the curriculum to enhance the experiences of the students so as to cope with the needs of the dynamic employment market

Special classes in soft skills, communication skills, computer skills, life skills office management, computer hardware and networking conducted by corporate training companies namely Critical Edge and KQES in association with the college staff and Directorate enhance student experiences. The “Global Shapers” program for final year students corporate leadership abilities.

The institution organizes SC/ST and minorities coaching classes for competitive exams like IAS, IFS, KAS, Public service commission and banking. This programme is funded by the UGC and classes are conducted by subject experts.

Workshops like “Beekeeping- Creating Women entrepreneurship in rural economy” organized by Department of Zoology and “RNAi technology and its applications” by Biochemistry Department and lecture on “Budget Analysis” by the Economics Department, provide entrepreneurial skills and hands on training to students and faculty. The Bioinformatics Facility courses increase awareness and interest in students for future employability.

1.3.3 Efforts made by the institution to integrate the cross cutting issues such as Gender, Climate Change, Environmental Education, Human Rights, ICT etc., into the curriculum

The nature club of our institute NISARGA takes initiatives to sensitize the students on environmental issues. Environmental Science has been integrated into

the curriculum of III semester undergraduate course; also Environment and public health is offered to I semester students. These courses help to enhance environmental awareness and social responsibility.

The club exclusively dedicated to the cause of women is **SABALA**. This forum focuses on empowering women by introducing the students to the legal aspects of women related topics, strategies to be adopted in fighting atrocities against women, skill development programmes, newer career frontiers to be conquered etc. The Kannada forum **KANNADATI** inculcates human values by organizing special lectures from eminent writers. Interactive sessions are organized to sensitize students on gender issues.

The employment cell of the college **UDYOGA SETU** is actively involved in bringing job opportunities to the notice of the students, helping them to prepare for competitive exams and interviews. The TQM unit of the college teaches employability requirements like soft skills and personality development skills. The NCC wing inculcates discipline and patriotism and the NSS unit imparts the attitude of service and social concern. The Physical Education department trains the students not only in games but builds up sportive attitude and good physique. The weekly assembly makes the students focus on life skills by making them give motivational talks, tips on useful topics, discuss about socially and scientifically relevant topics. Above all, it instills organizing capacity and confidence.

1.3.4 Value-added courses/enrichment programmes offered to ensure holistic development of students

There are many enrichment programmes which are regularly organized to develop different skills of the students along with the course work.

Moral and ethical values

The NSS and Rangers wing of the college engages the students in community development activities. The Students are also motivated by way of special lectures. Moral and ethical education courses are conducted as a part of Manavathe, by the Art of Living Foundation

Employability and life skills

The placement cell of the college invites reputed IT ,BT and BPO companies to update the students on current industrial requirements. As a part of Naipunya nidhi and Hosa hejje, courses on Medical transcription, Hardware & Networking, office management enhance the employability of the students. These programmes train students on soft skills like spoken English, communication ,resume writing and leader ship qualities. The Weekly assembly and Essay/lecture competitions build organizational, oratory and creative skills of the students. Students are also given responsibilities in organizing cultural programmes, competitions, seminars, workshops to improve their team building and organizational skills. The college Alumni association organizes programmes like International Women's Day, Eco-march, Eco-day to build entrepreneurship and create awareness about the environment.

Better career options

Placement cell conducts aptitude, technical and preplacement training; Tutorials are conducted on CAT/PGCET/KMAT exam preparation for SC/ST/OBC students with UGC financial support since 2011.

Community orientation

The NSS, NCC and Ranger units of the college instill the spirit of service by organizing camps and visits to orphanages. Film shows are arranged to create awareness about issues like HIV/AIDS, Breast Cancer, meditation, patriotism and social problems. Students *enmasse* participated in an awareness programme against the use of Endosulphan by sending post cards to the Union Ministry of Environment and Forest, Government of India. College in association with Bangalore University participated in Walkathon to create awareness about cleanliness and civic sense. Students attended assembly session in Vidhana Soudha to understand the functioning of the state administration.

1.3.5 Extent of use of the feedback from stakeholders in enriching the curriculum

The information collected from feedback given by students, parents, alumni and peers is analyzed and these are brought to the notice of the BoS during regular meetings. This has been incorporated in the syllabus of many subjects.

1.3.6 Monitoring and evaluation of the quality of enrichment programmes

Feedback from participants are collected at the end of all enrichment programs conducted in the college, analyses and suggestion are incorporated in future programs.

1.4 Feedback System

1.4.1 Contributions of the institution in the design and development of the curriculum prepared by the University

The institution is affiliated to Bangalore University and follows the curriculum set by the University. However, the teachers from the college being active members of the BOS have ample opportunities to include suggestions from all stakeholders during curriculum design. Nineteen senior faculty members of the college from 10 departments have served as members of BoS and 23 from 13 departments are members of Board of Examiners (BoE) in the last five years. Many of them have been involved in the recent revision of syllabus of the University. Almost all teachers are in the panel of examiners and are involved in evaluation process. They are also actively involved in designing the syllabus and setting question papers. Workshops on the syllabi are conducted by the University where our faculty gives their inputs, taking into consideration the students' feedback, other stakeholders views and suggestions. Faculty members regularly attend workshops and seminars on revision of curriculum.

1.4.2 Formal mechanism to obtain feedback from students and stakeholders on curriculum; it's communication to the University and for curriculum enrichment and introducing changes/new programmes

Curriculum feedback format is given to the final year UG and PG students, alumni, parents- to give suggestions to the current syllabus in terms of applicability, employability and appropriate suggestions are presented to the Chairman of the concerned department of university to be discussed and incorporated while reframing the syllabus in the consequent Board of Studies meeting.

1.4.3 New programmes/courses introduced by the institution during the last four years and its rationale

New combinations that include Electronics, Mathematics and Computer Science (EMCs) and Computer Science, Mathematics and Statistics (CsMSt) have been introduced from the academic year 2014-15. The PG course In Physics was started in the year 2009. The new combinations were introduced to meet the demands of the changing educational scenario and to improve the employability of the students.

CRITERION II: TEACHING - LEARNING AND EVALUATION

2.1 Student Enrollment and Profile

2.1.1 Ensuring publicity and transparency in the admission process

Publicity in the admission process

- College ensures publicity in the admission process by notification hosted on college website www.karnataka.gov.in/mscwb to provide ready and relevant information to stakeholders regarding admission. These include procurement of admission forms, eligibility criteria, intake capacity, rules and regulations, fee structure, courses offered etc.
- Until the academic year 2013-14 prospectus was made available to the student aspiring to procure admission to the college. All relevant information regarding the admission procedure, infrastructure, fee & scholarships, various activities of the college, achievements of the students in academic as well as sports and other activities is conveyed through the prospectus.
- From the academic year 2014-15 admission process has been made online by Directorate of Collegiate Education (DCE) on the website www.dce.kar.nic.in. This has also been announced by the authorities in leading news papers.
- The admission notification is also displayed on the college notice boards, providing detailed and related information about the process of admission.

Transparency in the Admission Process

To ensure transparency in admission process, the Principal of the college constitutes an admission committee with senior faculty members as convenor and co convenor. Every department is represented by at least one faculty member in this committee. The committee processes the applications received and makes selection lists adhering to the merit norms and state government rules. The selection lists are displayed for attention of all concerned. Any queries regarding

the propriety of selection procedure are addressed with due details and courtesy. The same committee also counsels and admits the selected candidates. The presence of parents/guardians is mandatory during admission. Details of admitted candidates are entered in the admission register with their photograph and signature. The approval of the Principal is obtained at every stage of this process. With the process getting online the same committee scrutinizes the merit list put up by the DCE and completes the process in college.

2.1.2 Criteria adopted and process of admission to various programmes

Applications for admissions to undergraduate courses are called for in the month of May immediately after the II PU results are announced. Admission committee scrutinizes the applications and selection lists are announced adhering to the merit norms and state government rules. From the Academic year 2014-15 the merit list is announced on the DCE website. Online applicants are given a unique ID number. The college admission committee members conduct counselling and facilitate admission. The cut off percentage set for admissions at the entry level is 35%. For UG courses the admission is based on merit at the + 2 qualifying examination cum reservation, as per the order of Government of Karnataka. Admissions to postgraduate courses are carried out by Bangalore University. The process begins after the announcements of 6th semester results and subsequent admission notification is given out in newspaper. The students selected as per Government norms by counselling at the university are admitted to the college. Admission to MCA is done through VTU entrance and counselling. The college renews the admission for II and III year B.Sc and II year M.Sc and II and III year MCA students.

2.1.3 Minimum and maximum percentage of marks for admission at entry level for each of the programmes offered by the college

Minimum percentage of marks for undergraduate course is 35%. The government of Karnataka has waived the tuition fee and laboratory fee of women students

joining Government colleges and this has opened the doors of the colleges for everybody. The college does not deny admission to any eligible girl student.

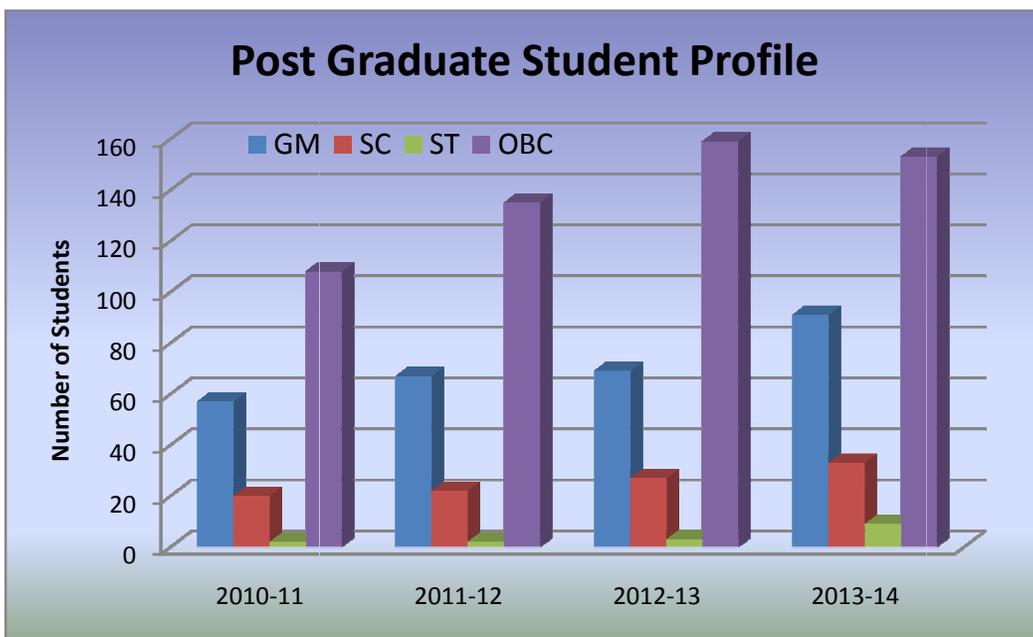
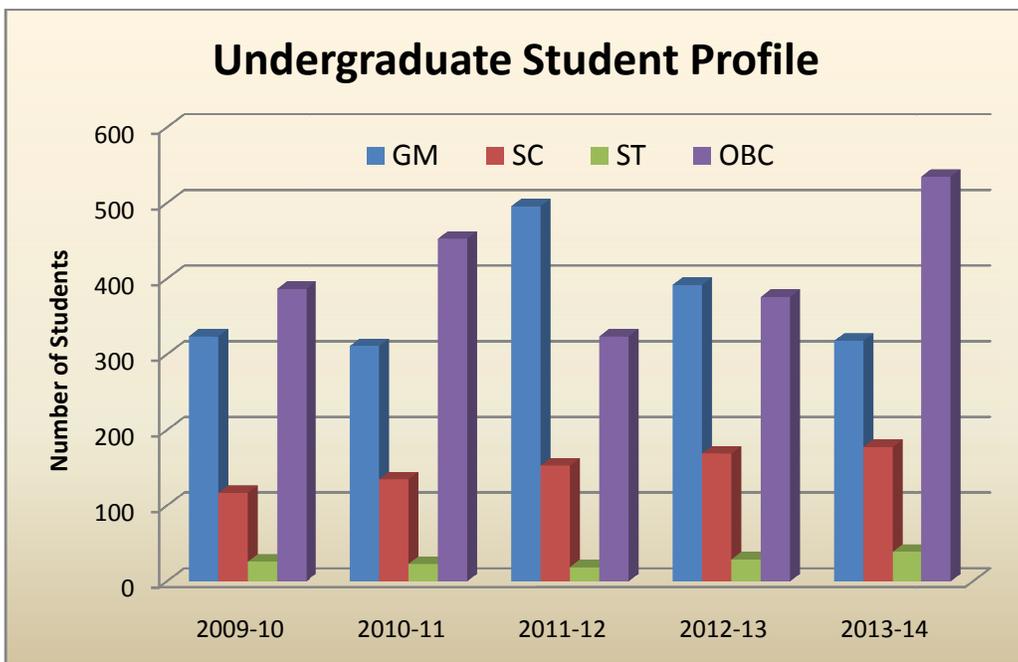
2.1.4 Mechanism to review the admission process and student profiles annually and its contribution to the improvement of the process

Being a Government college with a motto of increased access for girls to higher education, the college does not review the admission process based on student profiles. The admissions are done according to the guidelines and rules as stipulated by the Government of Karnataka. Admission Committee takes care of the admission process and Placement Cell maintains the student profiles of final year students. Admission convenors and members facilitate the admission process. Care is taken to ensure documentation of the number of applications and scrutiny of the same before admitting the student. This brings about transparency, streamlining and systematizing the admission process, and ensures following of reservation policy strictly as per provision of the Government and selection of meritorious students from the weaker sections.

2.1.5 Strategies adopted to increase/improve access for all categories of students to reflect the National commitment to diversity and inclusion

The college is dedicated to women's education both at UG and PG level. Most of our students are from rural areas and belong to socially and economically weaker sections. With the Government waiving off tuition and laboratory fees the college has increased access to women students for Science education. More than 50% percent of our students belong to SC, ST and OBC categories, Access is ensured to these marginalised groups through the total implementation of reservation-cum-merit policy of the Government. Applicants excelling in sports and other state students are also given due credence during admission. The college strictly adheres to the admission norms issued by the Government of Karnataka. This ensures justice and equity. Ramps, restroom facilities are provided in the main building and library to provide access to differently-abled students. Scholarships are extended to SC/ST/Minority students.

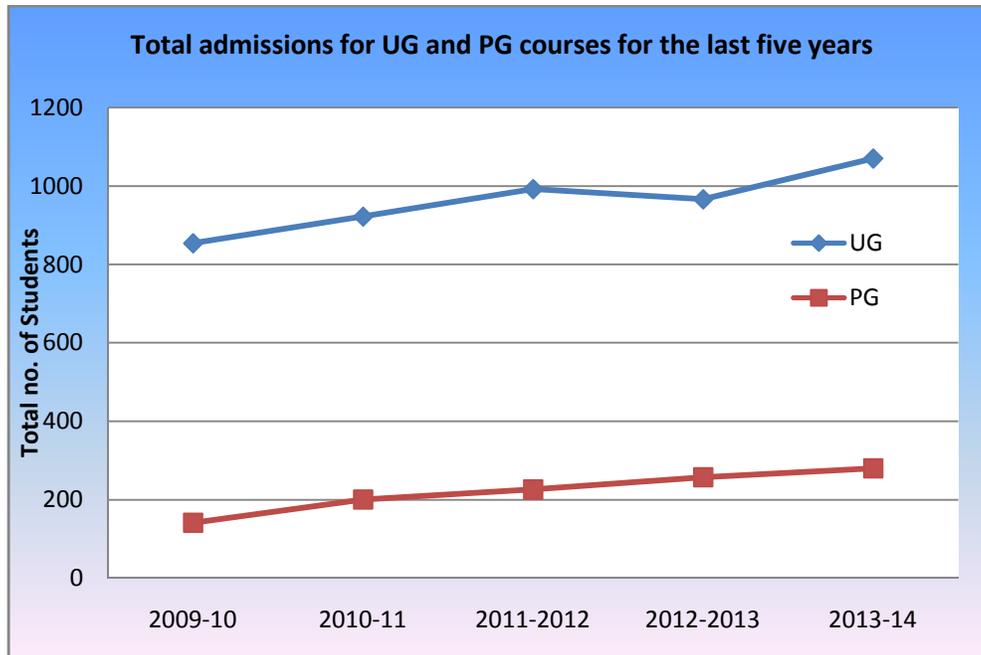
The following charts depict the student profile of undergraduate and post graduate students of our college and indicate an upward trend in the admissions of SC, ST and OBC students.



2.1.6 Details for various programmes offered by the institution during the last four years and comment on their trends

Academic Year	Programmes	Number of Applications	Number of Students	Demand Ratio
2009-10	UG	753	420	1.8:1
2010-11	UG	720	401	1.8:1
2011-12	UG	793	362	2.:1
2012-13	UG	760	383	2:1
2013-14	UG	957	462	2:1

Admission to PG courses is done through counseling at the University and MCA is done at the PG CET. The trends of both UG and PG students has shown an increase in the last 5 years which is indicative by the graph below.



2.2 Catering to Student Diversity

2.2.1 Catering to the needs of differently-abled students and ensuring adherence to government policies

The college does not have any differently-abled students at present. As there are class rooms on the ground floor, they can be made available to differently-abled students, in the event of their getting admitted. Ramps have been provided in both the buildings and the library. Restroom for differently –abled students is there at the heritage building and in the college annex. The institution fully adheres to governmental policies regarding the needs of differently-abled students. Seats are reserved at the time of admission in various programmes.

2.2.2 Assessment of the students' needs in terms of knowledge and skills before the commencement of the programme

At the beginning of the course, every teacher regularly devotes a few hours to provide continuity between the previous level and the current program of study. At present this serves the purpose of a bridge course in the absence of a formal one. In addition, students are encouraged to avail UGC remedial classes are held in all subjects for SC, ST and minority students. These classes go a long way in bridging the knowledge gap. The TQM facilitators in the college collect the data about knowledge and soft skill status of the entrants, through a questionnaire during the orientation programme. Some of the faculty conduct exam at the beginning of the course to identify academically weak students.

2.2.3 Strategies adopted to bridge the knowledge gap of the enrolled students (Bridge/Remedial/ Add-on/Enrichment Courses, etc.) to enable them to cope with the programme of their choice

- Slow learners are identified.
- Bilingual explanations in classroom lectures and discussions.
- Concept clarification and problem solving exercises.
- Remedial coaching classes are conducted for SC/ST/minorities.

- Simplified versions of books are recommended to them.
- Revision of topics & special tests are conducted for them.
- Written notes on difficult topics and are circulated among students for reference and study.
- Previous years question papers are made available to students in the department and library and solved in the classroom.
- The M.Sc. students are encouraged to learn the subject by voluntary projects.
- Peer learning is encouraged

2.2.4 Sensitization of staff and students on issues such as gender, inclusion, environment etc.

The Women's Cell, 'Sabala' addresses issues related to women and organizes seminars on such issues. Promotion of environmental awareness is done by the environmental club (Nisarga) of the College. NCC and NSS Wings of the college sensitize staff and students on various socio-cultural issues. Environmental science is included in the syllabus of undergraduate studies.

2.2.5 Identifying and responding to special educational/learning needs of advanced learners

The institution identifies special educational/learning needs of advanced learners through direct interaction with advanced learners and on the basis of feedback of the teacher concerned. Advanced learners are given opportunities and assistance to hone their skills through various modes like presentations in class, writing articles for college magazine, newsletters, participating in competitions, projects etc. They are also advised to take up extra reading beyond the prescribed curriculum. Participation in interdepartmental, intercollegiate and national level academic programmes provide opportunities for achievers to experience academic satisfaction These opportunities are kept open even for the slow learners, who are

brought into the main stream by encouraging the advanced learners to team up with them.

2.2.6 Collection, analysis and use of data and information on the academic performance (through the programme duration) of the students at risk of drop out

The College collects data and information on the academic performance of the students at risk of drop out from class lectures, class tests, assignments and semester examinations. The class mentors keep track of the performance of the students from the disadvantaged sections of the society and inform them of the provision of Scholarships provided by the Department of Social Welfare, Department of Minority affairs, Government of Karnataka and Government of India. Provision to apply for scholarships and student welfare funds are made at the college level. The Government has waived off tuition and laboratory fees to women students which is a boon to our students who hail from economically weaker sections of the society. To cater to the slow learners, students are encouraged to meet the teachers beyond the class for additional help and help beyond curriculum. To facilitate learning in slow learners regular counselling is done and they are advised to attend remedial classes. The class mentors motivate the slow learners to unleash their potential. Mentors also help identify needy students and refer them to the counselling cell, which diagnoses their problem and suggests psychological steps, especially in cases of acute stress, depression, low self-esteem etc. The college in association with the Directorate of Collegiate Education conducts special programs to boost the analytical and communicative skills for undergraduate students. M.Sc. students are given corporate leadership training which boosts the confidence of the students. At the end of the course the placement and career guidance cell organizes workshops on curriculum vitae writing and mock interview.

2.3 Teaching-Learning Process

2.3.1 Planning and organizing the teaching, learning and evaluation schedules (Academic calendar, teaching plan, evaluation blue print, etc.)

The college adheres to the academic calendar framed by the University. However the IQAC prepares a schedule of academic events at the college level. The time table committee frames the college time table and schedules the classes as per the university norms. At the department level the distribution of work in theory and practicals is done with meticulous planning under the guidance of the respective HoDs. Teachers plan their lectures individually which is monitored by the Principal through the Heads of the department and work diaries. Tests and exams are conducted at regular intervals. Evaluation schemes are conveyed to the students by the faculty who take part in evaluation of answer scripts. University provides the evaluation blueprints for the final examinations.

The post graduate departments have adopted inquiry based learning of practicals. The students are encouraged to conduct experiments based on problem based learning (PBL). In problem based learning (PBL), small groups of students are presented with contextual situations and asked to define the problem, decide what skills and resources are necessary to investigate the problem and then pose possible solution. The research projects are assigned to students well in advance when they are in III semester and they study the problem in III and IV semester and produce a dissertation report. Some of the research work is published too. Students are encouraged to discuss with scientists from NCBS, Bangalore and CUBE, HBSCE, Mumbai.

2.3.2 IQAC contribution to improve the teaching –learning process

IQAC provides the development and application of quality benchmarks/parameters for the various academic and administrative activities of the institution. It promotes research and to improve the scientific temper and

infrastructure in the college. Organization of lectures, seminars and workshops is encouraged to spread awareness on academic and social issues. Evaluation of teachers and the facilities in the college is regularly conducted which helps in improving the teaching learning process in the college. The IQAC plans and actively participates in enhancing the infrastructural facilities in terms of space, equipment, laboratories, libraries etc. It also appreciates, encourages and provides support required to all staff to participate in faculty development programs. In short the IQAC monitors promotion, implementation and continuous improvement of innovations in Curriculum, Co-curricular and Extra-curricular activities of the institution and works towards the enhancement of the learner's knowledge, capacity and personality.

2.3.3 Student-centric learning, support structures and systems available for teachers to develop skills like interactive learning, collaborative learning and independent learning among the students

The college has recognized the need for making education student centric. All possible efforts are made to ensure their fullest growth and development in a safe and congenial environment. To make teaching-learning student centric, teaching plan is designed to include assignments, student seminars and quiz. Care is taken to make classes interactive. Remedial classes are conducted for academically weak students. Teachers have adopted instructional methods that focus more on conveying concepts and make grasping them easy. Students' needs and requests are kept in view while ordering books for library. In most of academic related matters decisions are taken after consulting the students too. Feedback about teaching, lab facilities, teaching aids and completion of syllabus is obtained formally and informally which facilitates student centric learning. Students are encouraged to take part in planning and organizing academic extension activities like expert talks/Internet access and laboratory with modern equipments to facilitate hands on training. This is accompanied by experiential teaching like projects-based learning, industrial visits, field work and practical classes.

Programs on communication and life skills enhance the overall personality of the student.

2.3.4 Nurturing critical thinking, creativity and scientific temper among the students to transform them into life-long learners and innovators

To infuse critical thinking and creativity in the students various clubs have been formed. The Eco club *NISARGA* takes the students closer to nature related issues and enables them to understand, analyze and help the conservation of various aspects of environment. The Kannada forum **KANNADATI** is meant for promoting studies in Kannada language and culture. The weekly assembly instills organizing capacity, team work and confidence in students. Creative endeavours like articles, stories, poems by students find a place of prominence in the newsletter and college magazine. Besides providing an opportunity to publish their articles, the magazine also involves them as student editors in all the areas of its publication right from editing, designing to printing. A number of departments in the college have also put up their Wall Magazine which is maintained by the students. Each department has a forum, wherein lecture competitions, quizzes, essay writing are held every year. Institution has effective mechanism to participate in community services through extension programmes to develop innovative, creative, value-based education for inculcating social responsibilities.

Students take active interest and involve themselves in organizing National/State seminars, conferences and workshops along with their faculty. This exercise exposes them to the thrust areas of research and their interaction with eminent scientists kindles their scientific thinking and creativity. The Botany department maintains a medicinal plant garden and conducts botanical tours that merge study and creativity. The department also organizes competitions for scientific models. Visits to industries and research institutions by students of the department of Chemistry, Microbiology and Sericulture create special impact on learning and scientific temper. Preparing models and participating in science exhibitions make learning more experiential and creative. Student projects have been undertaken by both undergraduate and post graduate students. Post graduate students of our

college are encouraged to present papers, posters and publish research articles in journals; some of the research findings are published as stories in leading newspapers to create public awareness.

2.3.5 Technologies and facilities available and used by the faculty for effective teaching

The teaching fraternity adopts chalk and talk method as well as ICT to make classroom learning interesting. Botany and Zoology departments have museums with a good collection of specimens. Many departments especially PG, have technology enabled class rooms which is made use of by the teachers to make power point presentations. Four smart class rooms are also in the offing. Adequate infrastructure in the laboratories allows the teachers to give hands on training to students in the practical aspects. The library provides Infilbnet to teachers and students to enable them to keep abreast with the latest in their fields. The college has DBT funded Bioinformatics facility to cater to research activities and provide education in computational biology to students. This facility also has various softwares to support research activities and provides internet facility to faculty and students.

2.3.6 Exposure of students and faculty to advanced level of knowledge and skills (blended learning, expert lectures, seminars, workshops etc.)

There are avenues for the teachers and students to keep pace with new developments in their subjects:

- Students are assigned various creative tasks, such as writing articles and matter for wall magazine and college magazine, interacting with resource persons during seminars and workshops. The students are encouraged to present seminars on recent developments. Such interactions are mutually beneficial to the students and the faculty.
- The department of Botany conducts field work for collection of Plants, while departments of Chemistry, Microbiology, Sericulture and Zoology organize industrial and institutional visits.

- The College library has subscribed to various journals related to different subjects. In addition to this, books and magazines are purchased by the College on a regular basis for knowledge up-gradation. Newspapers and Internet are used on daily basis to keep track of the latest advancements in the respective field. Inlibnet in the library is an additional resource.
- The faculty keeps pace with recent developments in their disciplines participating in national seminars, workshops, summer schools, refresher courses and orientation programmes.
- They are also invited to be Resource Persons for various Seminars & Workshops. These interactions strengthen the involvement of teachers in curricular activities, the benefits of which are passed on to the students.
- Continuous involvement in research work with teaching, as research is complementary to teaching and helps the faculty to keep pace with the recent developments in the various subjects.
- Students and teachers alike make use of the lectures delivered through Edusat.

2.3.7 Details on the academic, personal and psycho-social support and guidance services (professional counseling/mentoring/academic advise) provided to students

Mentor system exists in the college and is built with teams as unit cells. Each team consists of a teacher and 15-20 students. The interaction between students and teacher has become more informal, frequent and sincere. The class has an 'elder' in the mentor to whom students can look up to, for encouragement, support, correction, sharing of problems ranging from academics to interpersonal relationships. The mentors become a strong link between students, various functional bodies of the college and parents. This is significant since, most of the students who come to our college are from socially and economically challenged sections, who have no support system elsewhere. The weekly assemblies are organized by the students under the guidance of mentors. An important method of obtaining informal feedback from students regarding their experience in the college has been through mentors. Mentors also meet regularly to coordinate,

discuss and implement measures that benefit students. The principal of the college always chairs these meetings and guides the mentors. The student welfare officers regularly interact with the students. The college counseling cell with 19 counselors take care of the emotional needs of the students and staff. The Placement Cell of the college helps the students take charge of their career development from exploring their job options. It also helps in developing skills that employers look for by conducting talks. The Microbiology department has a foster family system that helps juniors and seniors interact for academic and other activities.

2.3.8 Innovative teaching approaches/methods adopted by the faculty during the last four years and efforts made by the institution to encourage the faculty to adopt new and innovative approaches and the impact of such innovative practices on student learning

- Illustrating through examples or experiments, particularly by science teachers.
- Project-based learning and experiential learning like field work, visits to industries, socio-economic surveys, health survey & organizing student seminars based on the curriculum.
- Interactive method, audio, organizing seminars based on the curriculum, project-based learning with study oriented tour/field work, socio-economic surveys based on the syllabus.

“Tell me and I forget, show me and I remember, involve me and I understand”

.....*Chinese proverb*

Inquiry based teaching is adopted in some departments which inspires students to learn more thoroughly. Teachers are facilitators of their student’s inquiry. Active learning techniques are adopted by some departments to enhance critical thinking among the students Collaborative/Cooperative learning is followed in departments where students have to perform a research project as part of their curriculum. Undergraduate departments of Zoology, Electronics and Postgraduate courses, Microbiology and Computer science have adopted these techniques. Students get

a chance to speak, share personal views and develop the skill of working with others. The group members' work together to complete a given task. Think pair share is followed by faculty in lecture classes for peer group understanding of the topic. Students are given time to think about a topic, turn to their neighbour for a short discussion, and then share the answers with the rest of the class. Brainstorming is used for some of the topics in the class. Debates are staged in class which are effective tools for encouraging students to think about several sides of an issue. Some of the departments and all the PG departments encourage students to Role Play. Through role play students actually experience the materials they are studying. Biological science departments use many case studies to make students understand topic well. PG departments where student research project is compulsory follow problem based learning to understand the scientific question.

2.3.9 Use of library resources to augment the teaching- learning process

The college has a general library and almost all departments have departmental libraries. With over 60000 books and 17 journals the library caters to the needs of both students and teachers. The college library subscribes to Infilbnet to augment teaching learning process and have an ezone to provide internet access to students. Newspapers and Internet are used on daily basis to keep track of the latest advancements in a particular field. A separate periodical and PG section exists in the library. Copies of syllabi prescribed by the university, and question papers are also available to students for ready reference. The library staffs keep the faculty and the students updated regarding its latest acquisitions. The new titles are displayed at the entrance of the library. Students are also encouraged to make use of library services by giving assignments and references. They are provided with a student library card which enables them to set books issued from the library. Departmental Libraries are managed by the staff for the benefit of faculty and students.

2.3.10 Challenges in completing the curriculum within the planned time frame and calendar and approaches to overcome these

The Institutional mechanisms make certain that curriculum is completed within the time frame of the academic calendar. Individual faculty ensures that the syllabus allocated to them is completed on time by planning their teaching in the beginning of the semester. This is monitored by the Principal through the Heads of the Departments for effective implementation. At times the institution does face challenges due to shortage of faculty in some departments which is overcome by recruiting guest faculty. Any classes that have been missed due to other activities in the college like cultural events, workshops, or unexpected closure due to reasons beyond the control of the Institution is overcome by taking extra classes.

2.3.11 Monitoring and evaluation of the quality of teaching learning

Quality of teaching learning is monitored by the IQAC through feedbacks obtained from students. An analysis report is prepared based on the student feedback on teaching and the same is shared by the Principal with the concerned teachers for necessary remedial and corrective measures. Sincere attempts are made for continuous improvement in the performance of the teachers based on the feedback. All out efforts are made to improve the performance of every staff member by prevailing upon them to be effective teachers and good facilitators. An informal academic audit is made by the head of the institution on a regular basis either by holding departmental meetings or general staff meeting. Sometimes even on regular rounds by the Principal, feedback is taken from the students and enquired after. The teacher's diaries are regularly seen and signed by the Principal on a monthly basis. In the year 2011-12 the department of collegiate education trained the assistant professors with the motto of "Training the trainers". The topics covered were Inquiry based teaching, active teaching techniques which helped the faculty to be better teachers.

2.4 Teacher Quality

2.4.1 Strategies adopted in planning and management (recruitment and retention) of its human resource (qualified and competent teachers) to meet the changing requirements of the curriculum

Faculty details

Highest Qualification	Professors		Associate Professors		Assistant Professors		Total
	Male	Female	Male	Female	Male	Female	
Permanent Teachers							
D.Sc./D.Litt.	-	-	-	-	-	-	-
Ph.D	-	-	5	17	15	9	46
M.Phil.	-	-	4		7	14	25
PG	-	-	1	5	3	10	19
Guest Faculties							
Ph.D							
M.Phil.					2	2	4
PG					2	11	13

The permanent faculty are appointed by the Karnataka Public Service Commission. If any faculty position lies vacant it is informed to the higher authorities and they in turn transfer faculty from other government colleges in the state. Guest faculty wherever required apply online on the website of the Directorate of collegiate education who release the merit list of the registered candidates. The guest faculty is then appointed by the college after due verification of documents. The existing teachers are expected to update their knowledge so as to meet the changing requirements of the curriculum. Some teachers get trained in their respective subject domain through attending and presenting research papers in conferences and undergoing short term training programmes.

2.4.2 Coping with the growing demand/ scarcity of qualified senior faculty to teach new programmes/ modern areas (emerging areas) of study being introduced (Biotechnology, IT, Bioinformatics etc.) and details on the efforts made in this direction and the outcome during the last three years

The teachers who teach modern areas of study are encouraged to attend seminars and workshops to update themselves. Since many teachers are involved in research they are better equipped to train students. During the last three years many teachers have participated in number of state and national level seminars and workshops. Also in subjects like Biochemistry eminent speakers have delivered lectures to augment classroom learning.

Date and Year	Speaker	Topic
27.10.2012	Dr. Rashmi Raghunath, Assistant Professor , Dept of Biochemistry, Jain University, Bangalore	DNA Replication
03.12.2012	Prof. N.H Manjunath, Chairman, Dept of Biochemistry, Bangalore University	Immune system
04.12.2012	Prof. Devraj V R, Dept of Biochemistry, Bangalore University	Replication of retro virus HIV
27.12.2012	Dr. Rashmi Raghunath, Assistant Professor , Dept of Biochemistry, Jain University, Bangalore	Translation
30.8.2012	Dr. Siddalinga Murthy, Dept of Biochemistry, Bangalore University	Nucleotide metabolism, enzyme regulation

2.4.3 Details on staff development programmes during the last four years and strategies adopted in enhancing the teacher quality.

a) Nomination to staff development programmes

Academic Staff Development Programmes	Number of faculty nominated				
	2009-2010	2010-11	2011-12	2012-13	2013-14
Refresher Courses		1	15	14	
HRD programmes					
Orientation Programmes	2	0	4	0	
Teacher empowerment training	0	19	8	17	
Summer / winter schools, workshops, etc.	55	43	26	35	18

b) Faculty Training programmes organized by the institution to empower and enable the use of various tools and technology for improved teaching-learning

Changes in curriculum is at the University level where many of our teachers are in the BOS and BOE. Hence they are aware of any changes brought about in the curriculum well in time. The teachers are encouraged to attend workshops conducted by various departments to discuss the changes in curriculum. Teacher empowerment programs conducted by DCE have participation from many of our faculty. Faculty members are periodically deputed to attend programs on new and emerging technologies; Teachers make use of Internet and Library and infolibnet e-journal for updating themselves. Besides this the college organizes seminars and conferences which help as a learning source for the faculty.

c) Percentage of faculty

Faculty	Percentage			
	2009-10	2010-11	2011-12	2012-13
Invited as resource persons in Workshops / Seminars / Conferences organized by external professional agencies	3%	3%	4%	4%
Participated in external Workshops/Seminars/Conferences recognized by national/ international professional bodies	61%	51%	31%	55%
Presented papers in Workshops / Seminars/Conferences conducted or recognized by professional agencies	19%	29%	14%	8%

2.4.4 Policies/systems in place to recharge teachers

The college being governed by the Department of Collegiate Education, Government of Karnataka, and under 2(f)/12 (B) the faculty avail the UGC-FIP facility for professional improvement. This facility involves study leave, regular salary and suitable replacement of the staff. In addition to this the staff also makes use of UGC, DST, SERB grants for major and minor research projects. The staff is encouraged to participate in National / International seminars and conferences, training programs etc. to upgrade their knowledge and is given leave or OOD. The college has also organized national and state level workshops and industrial visits to keep abreast with the latest development in respective subjects and also to interact with scientists.

Sl.No	Professional development program	No. of faculty who have availed the facility/no. of programs organized during last three years
1.	UGC FIP	09
2.	UGC Major Project	04
3.	UGC Minor Project	26

UGC-Faculty Improvement Programme (FIP)

Sl.no	Name of the faculty	Dept	Period of FIP on Study Leave
1	Hemalatha A	Zoology	2009-2012
2	Abinandini David	Zoology	2010-2013
3	Sandhya Kulakarni	Physics	2009-2012
4	Sri Prakash G	Physics	2009-2012
5	Madhavi K.Y	Physics	2010-2013
6	Sumana K.S	Physics	2010-2013
7	Ravi Kollarkar	Electronics	2010-2013
8	Latha V	Zoology	2013-till date
9	Hemalatha K S	Physics	2013-till date

Travel grants to college for presenting papers in international conferences

Name of the faculty	Conference details	Place	Amount sanctioned by UGC (Rs)
Dr. Manjula A.C. Sericulture	4 th Global Summit on Medicinal and Aromatic plants, October,2011	Malaysia	72,204
Dr. Kavitha B Microbiology	9 th International Symposium on earthworm ecology,5-10 Sept,2010	Mexico	1,68,440
		Total	2,40,644

PTAC grants availed by faculty

Sl.no	Name of the faculty	Dept	year	Amount sanctioned(Rs)
1	N Nagarathna	Maths	2010	2,590
2	Shantha Kumari	Sports	2010	2,700
3	K S Sumana	Physics	2010	300
4	Kavitha B	Microbiology	2010	300
5	R K Vanishree	Maths	2010	1,800
6	Ramesh I	Zoology	2010	1,000
TOTAL				8,690

2.4.5 Number of faculty who received awards / recognition at the state, national and international level for excellence in teaching during the last four years. Contribution of the institutional culture and environment to such performance/achievement of the faculty

Awards and Recognitions

NAME of the Faculty	Department	Award/Recognition	Period/Awarded by
Dr. Suresh Kumar	Botany	Glory of Excellence in Education	National and International Compendium, New Delhi, 2013
Dr. Madhusudan	Biotechnology	Recipient of SRFP for Teachers for Research carried out at CIMAP, Lucknow.	Indian Academy of Science Bangalore, April-June, 2012.
Dr. Bhushanam	Zoology	Young Scientist Award State Madhumitra Award	International workshop on 'Technology transfer in bee keeping – APIEXPO' 2014
Mohan kumar B S	Zoology	Summer Research Fellowship	IAS, INSA and NSA, 2011.
Dr. Kavitha B	Microbiology	Best Teacher Award	ISBR School, 2013-2014.
Dr. Vijaya B.N	Zoology	Kannada Rajyotsava Sanmana in the field of education	Kannada Sanga , Bangarpet, Kolar on 29/11/2011
Ajitha E	Psychology	Director General's Plaque of Honor Chief minister's commendation card	First in order of merit during pre-commission course at Gwalior 2013- 2014
Dr. L.G Meera	Kannada	monthly prize for short story	Mayura magazine 2010
		prize for the book Ranga shale	Karnataka bala vikasa academy 2011
		Budhdha prashsthi	Rangothri kala samsthe 2011
		R.Kalyanamma praashsthi	Makkala koota 2012

Dr. Asha Devi	Kannada	Ravindranath Tagore National Fellowship for Cultural Research	Ministry of Culture, GoI 2012-13
		G.S.S Vishwastha Mandali	G.S.Shivarudrappa Award - 2011
		Raashtrakavi Govindapai Samshodhana Kendra	V.M. Inamdar Award - 2011
Dr. K.Y Prathibha	Botany	Felicitation for encouraging students to participate in cultural programs	Kannada Samskritillake and Padmavathi Charitable Trust

The college provides necessary infrastructure and other required support to encourage teachers to excel in their teaching and this has seen our teacher being recognized for their teaching. The research advisory committee takes care of the research needs of the college and helps faculty with research proposals. Our faculty have also been selected as summer research fellows which enhances their research exposure.

2.4.6 Evaluation of teachers by the students and external Peers and its use for improving the quality of the teaching-learning process

The College has introduced evaluation of the teachers by the students. The feedback from the students is obtained teacher-wise and course-wise. The model questionnaire issued by the NAAC is used as a model to prepare the feedback form for this purpose. The feedback forms are analysed by the Statistics department and gives the evaluative report teacher-wise to the Principal. These reports are perused by the Principal who inturn will have a one to one talk with teachers if need be for future improvement.

2.5 Evaluation Process and Reforms

2.5.1 Ensuring that the stakeholders of the institution especially students and faculty are aware of the evaluation processes

Students are informed about the mode of examination, pattern of question paper, method of evaluation in the prevailing examination system during the course of study. Model question papers are discussed in detail. The scheme of evaluation obtained by teachers during previous University valuations is discussed in the class. Almost all teachers are in the BoE panel of examiners and hence are involved in the University paper evaluation. This allows them to critically understand the process and pass on this information to the students. Senior faculty who are in the BoS inform their staff about any changes in the process as when it happens.

2.5.2 Major evaluation reforms of the university that the institution has adopted and the reforms initiated by the institution on its own

Semester scheme has been adopted in both UG and PG courses with internal assessments based on the regularity of the student attendance and student performance in class tests and assignments. This has facilitated continuous evaluation of the students. Students are also assessed based on the seminars and presentations they give and their overall performance in class. The university has also introduced the OMRs for error free processing of results.

2.5.3 Ensuring effective implementation of the evaluation reforms of the university and those initiated by the institution on its own

The college follows all the University procedures and these are intimated to the stakeholders from time to time. Tests and assignments are conducted in the college continuously. The college makes sure that the entry of marks in the OMRs is also tracked to ensure error free submission to the University.

2.5.4 Details on the formative and summative assessment approaches adopted to measure student achievement

Formative evaluation designed to test the cognitive skills of the students is based on tests, assignments, quiz, field trip reports, seminars, term papers and practicals. Summative evaluation is done through pre final examinations at the college and final examination by the university.

2.5.5 Significant improvements made in ensuring rigor and transparency in the internal assessment during the last four years and weightages assigned for the overall development of students (weightage for behavioral aspects, independent learning, communication skills etc.

Rigor and transparency in the internal assessment is ensured in each department. The internal assessments marks are given on the basis of the students attendance, and performance in seminars, tests and assignments. The details of the marks scored by the students are maintained in the department register which can be assessed by the student if required and informed to the parents during parent – teacher meetings. 10% weightage of IA is given to the attendance of the students, 5% weightage of IA is given to the performance of students in the class test and 5% to the independent learning and self efforts of the students.

2.5.6 Graduates attributes specified by the college and ensuring the attainment of these by the students

The graduate attributes specified by the college include

General Attributes	Specific attributes	Steps to ensure attainment of attributes
Academic excellence	In depth and extensive understanding of the chosen courses	providing in-depth knowledge in the respective subjects in both theory and practicals
	An academic curiosity and willingness to open to new ideas	Building a strong sense of intellectual integrity and scientific temper
Scientific and Critical thinking	The ability for independent, conceptional and scientific thinking	Care is taken to see that the students are able to initiate and formulate viable and relevant research questions and apply them to their existing
	The ability to identify	

	<p>problem, collect evidences and analyze</p> <p>The ability to work independently and as a team</p>	<p>knowledge.</p> <p>Student research projects, Posters, oral presentations and seminars help to think critically scientifically, and execute successfully.</p> <p>Research publication by students and participation in science exhibitions help in analyses and presentation of data</p>
Personal development and effective communication	<p>Identify personal strength and weakness</p> <p>An awareness of personal strength and weakness</p> <p>Ability for self reflection, discovery and personal development</p> <p>Develop effective communication for different purposes and contexts</p>	<p>Assembly held every week enables organizational skills and team building</p> <p>skill development programs to boost confidence and leadership qualities</p> <p>Writing essay participating in debates enhances public speaking skills and communication skills</p> <p>Sports improves fitness ability to work as a team</p>
Social Responsibility	<p>Awareness and appreciation of ethical values</p> <p>Awareness and appreciation of social and cultural diversity</p> <p>Understanding of social and civic responsibilities</p>	<p>NSS, NCC environmental club, Rangers help students to appreciate community service and environmental consciousness to develop into socially responsible citizens</p>

2.5.7 Mechanisms for redressal of grievances with reference to evaluation both at the college and University level

Grievances regarding the evaluation at college level are addressed by every teacher in and beyond the class rooms. Evaluation of papers of the university

exams is done centrally by the University. The University rules apply in the redressal of the grievances regarding evaluation and anomalies in the declaration of results. At the college level a few teachers designated as liaison officers and student welfare officers and the office staff acts as a link between the college and the University. They are specifically tasked with overseeing the redressal of problems regarding evaluation and results declaration.

2.6. Student performance and Learning Outcomes

2.6.1 College learning outcomes and creating awareness to students and staff

Graduates and Post Graduates of the college will be able to:

- Think critically and creatively and apply analytical reasoning to address challenges and day to day problems;
- Communicate ideas and values clearly, effectively while listening to others' ideas with an open mind;
- Apply knowledge of diversity to promote equity and social justice;
- Act responsibly at local, national and global levels;
- Demonstrate expertise and integration of ideas, methods in their discipline of study.

The learning outcomes are discussed in staff meetings, orientation programs of I BSc and I MSc students and reiterated every year.

The college vision mission and objectives encompass the learning outcomes. The stakeholders are made aware of these through the prospectus. The college aims at grooming girls into confident, culturally conscious and globally competent individuals, which translates the learning outcomes into reality. The college looks forward to providing in-depth knowledge in the respective discipline and a strong sense of intellectual integrity. The students are encouraged to be critical and creative thinkers and be adept at learning in a wide range of ways, including ICT. Care is taken to see that the students are able to initiate and formulate viable and relevant research questions and apply them to their existing knowledge. Students

are given skill development programs to boost their confidence and be socially responsible citizens with leadership qualities.

2.6.2 Monitoring and communicating the progress and performance of students through the duration of the course/programme and analysis of the student's results/achievements and explain the differences if any and patterns of achievement across the programmes/courses offered.

The institution monitors the progress and performance of students throughout the duration of the course/programme through classroom lectures and internal tests. The progress of the students is communicated to them in the class and outside after evaluation of their assignments and tests for slow learners this exercise is done on one to one basis. The parents are informed about the same during Parents—Teachers meetings.

Analysis of the students results (last five years)

B.Sc

Programme	Programme wise details pass %				
	2009-10	2010-11	2011-12	2012-13	2013-14
B.Sc I Semester	71.7	57.4	44.7	60.2	49.8
B.Sc.II Semester	72.3	71.3	48.1	46.4	53.9
BSc.III Semester	71.6	62.3	60.9	57.1	46.2
BSc.IV Semester	73.7	73	71.8	55.4	60.7
BSc.V Semester	78.1	69.2	70.6	70.5	54.3
BSc.VI Semester	77.2	82.1	81.8	71.1	60.1

Post Graduate:

M.C.A

Semester	No. of Students Appeared	Results			Total Pass Percentage
		2 nd Class	1 st Class	Distinction	
Academic Year 2010-11					
1 st Semester	12	0	4	2	50
2 nd Semester	12	1	7	1	75
3 rd Semester	12	0	9	0	75
4 th Semester	12	0	4	5	75
5 th Semester	12	0	4	5	75

6 th Semester	12	-		12	100
Academic Year 2011-12					
1 st Semester	11	0	10	1	90.01
2 nd Semester	11	0	5	0	45.45
3 rd Semester	11	0	8	1	81.82
4 th Semester	11	0	8	1	81.2
5 th Semester	11	0	10	10	90.5
6 th Semester	11	0	11	11	100
Academic Year 2012-13					
1 st Semester	36	1	18	4	64
2 nd Semester	36	0	21	3	66.66
3 rd Semester	33	0	12	15	81.81
4 th Semester	33	0	14	15	87.87
5 th Semester	33	0	13	15	84.84
6 th Semester	33	0	0	33	100

M.Sc

Semester	No. of Students Appeared	Results		Total Pass Percentage
		2 nd Class	1 st Class	
Academic Year 2010-11				
1 st Semester	71	13	22	72
2 nd Semester	69	11	23	69.8
3 rd Semester	59	09	34	74.5
4 th Semester	59	06	32	70
Academic Year 2011-12				
1 st Semester	62	8	21	74
2 nd Semester	62	11	25	72.5
3 rd Semester	67	13	30	68.4
4 th Semester	67	12	28	72
Academic Year 2012-13				
1 st Semester	73	9	18	69.4
2 nd Semester	72	11	21	65
3 rd Semester	70	15	28	72.5
4 th Semester	71	13	30	71.5

List of Rank holders

Sl No	Name of the Candidate	Course	Period/year	Percentage	Rank
1	Poorvi.J Patel	BSc	2010	93.04	5
2	Pavithra M	MSc Physics	2011	78.0	3
3	Nalinamma	MSc	2012	89.02	5

		Mathematics			
4	Priscilla Anthony	MSc Microbiology	2012	78.25	5
5	Helen Anitha F	B.Sc Tamil	2012	gold medal	I
6	Sajila S	B.Sc Tamil	2010	gold medal	I

2.6.3 Teaching, learning and assessment strategies structured to facilitate the achievement of the intended learning outcomes

The teaching, learning and assessment strategies of the institution are structured to facilitate the achievement of the intended learning outcomes through well-equipped laboratories and library, spacious, well-ventilated classrooms, audio-visual teaching aids, regular class tests, written assignments and cocurricular activities.

- Separate Computer Laboratory for Computer-based learning in Physics, Mathematics, Statistics, Electronics and Microbiology Departments.
- The College laboratories and libraries help the students inculcate innovation by allowing them to explore and experiment innovatively
- The College magazines provide them a platform to give expression to their creativity. Some departments encourage students to express themselves through the Wall Magazines.
- Various departments organize industrial visits and interactive talks to instil entrepreneurship amongst students.
- The College NSS Wing regularly organize programmes to enhance the social commitment of the students.
- Organizing seminars and project work help team building
- The practical-classes ensure the development of practical skills based on theoretical knowledge.

- Problem solving exercises, field studies/visits, industrial visits – hands on experience, and project works ensure skill development in relevant subject areas of study.

2.6.4 Measures/initiatives taken up by the institution to enhance the social and economic relevance (student placements, entrepreneurship, innovation and research aptitude developed among students etc.) of the courses offered

The college Placement cell takes care of the placement requirements and career guidance of the student through job fair and talks on career opportunities. Departments like zoology have conducted awareness programs on Bee keeping, Sericulture as a subject is in itself socially relevant and motivates students, Mushroom cultivation, wine production, Ethanol production and Citric acid production is a part of the syllabus of Microbiology. Research aptitude in the students is developed by the in-house projects that the students do with guidance from the staff.

2.6.5 Collection and analysis of data on student performance and learning outcomes and its use for planning and overcoming barriers of learning

The College collects the data of the student performance through IQAC which also monitors the achievement of learning outcomes through the examination committee. The semester results of the students are analysed and the departments showing less pass percentage than the university average are expected to overcome their specific issues. The class mentors also monitor the learning outcomes of the students.

2.6.6 Monitoring and ensuring the achievement of learning outcomes

Monitoring of the learning outcomes is done by the following means-

A comprehensive time table is made for theory, practical and remedial classes. Attendance is compulsorily taken for every lecture. Assignments and test are corrected within a short duration and the marks are maintained in the register, which acts as a ready reckoner for the academic progress of the students. These

are also brought to the notice of the parents. Counseling is given to slow learners. Parents of such students are called to meet their respective faculty member, if required. The lab courses are continuously assessed and students are also given additional lab practice. Students are encouraged to participate in cocurricular and sport activities and extra care taken with their academics. NSS and NCC activities are also supported by the faculty.

2.6.7 Use of assessment/ evaluation outcomes as an indicator for evaluating student performance by institution and teachers for the achievement of learning objectives and planning

In-depth result analysis of the students is done year wise, subject wise to evaluate their academic performance. Their participation in NCC, NSS, cultural and cocurricular activities is tracked by the respective mentors. This assessment indicates the overall student performance and helps the college achieving the learning outcomes and faculty in planning the same. The overall performance of the student is recognized combination wise and 'best out going student' awards in academics and other activities are conferred.

CRITERION III: RESEARCH, CONSULTANCY EXTENSION**3.1 Promotion of Research****3.1.1 Recognized research center/s of the affiliating University or any other agency/organization**

Five departments of the college have applied for research center status to Bangalore University. A visit by the committee is expected any time to assess the institutions facilities. Some of our faculty members are recognized as research guides in other Universities. The faculty have availed research grants from UGC, DBT, DST and SERB. Our college has been sanctioned with 04 Major and 26 minor Research Projects in pure and applied sciences and we have successfully completed 1 major and 13 minor research projects during the period 2009- 2014.

3.1.2 Monitoring and addressing the issues of research by Research committee, its composition and recommendations for implementation and their impact

The college has a research committee coordinated by Dr. Ramgopal G, Associate Professor, Department of Physics. The committee consists of representatives from all departments who have research experience and Ph.D degree. The following are the members

Name		Department
Dr.Ramgopal	Convenor	Physics
Dr.Nagesh Babu	Member	Biochemistry
Dr.Viswanath.T	Member	Microbiology
Dr.Vanishree	Member	Mathematics
Dr.Shivashankrappa L.H	Member	Sericulture
Dr.Shobha V Bhimsen	Member	Economics
Dr.Asha Devi M.S	Member	Kannada
Dr.Sriprakash	Member	Physics

Dr.Suresh Kumar C	Member	Botany
Dr.Hemalatha A	Member	Zoology
Dr.Yethiraj	Member	Computer Science

The committee is keen to get approval to establish a research centre, have processed and submitted the application to Bangalore University. The committee maintains the details of research projects funded by various agencies like UGC, DST, DBT, SERB and VGST and supervises its financial status. Minor and major research projects are recommended and processed by the committee. The committee recommends for application of research grants and this has led to enhancement in proposals submitted to UGC. Also, the Proposals for workshops, seminars and conferences have been submitted under the guidance of the research committee. The committee also enlighten faculty on the availability of research grants of different funding agencies.

3.1.3 Measures taken by the institution to facilitate smooth progress and implementation of research schemes/ projects

Autonomy to the principal investigator	The Principal investigator is given autonomy to carry out their research work independently. Head of the Institution supervises the progress of research through the Research committee.
Timely availability or release of resources	Based on the need requested by the principal investigator and recommendations made by the research committee, principal decides the timely dispersal of resources. The financial details of projects is monitored by the faculty under the guidance of Principal.
Adequate infrastructure and human resources	The Principal Investigator is free to use the available infrastructure and human resources in the college.
Time-off, reduced teaching load, special leave etc. to teachers	Research work is carried during semester breaks and non-teaching hours.

Support in terms of technology and information needs	The Library and Bioinformatics facility provide Internet facility to the investigators for their research needs
facilitate timely auditing and submission of utilization certificate to the funding authorities	The college ensures that there is timely audit and submission of the Utilization certificates. The annual auditing of income and expenditure of research activities is done by the authorized chartered accountants. The same is submitted to the funding agencies for obtaining completion certificate. The college has a timely record of submission of utilization certificate. This has resulted in increasing the sanction of more projects to the college.
any other	Funds generated through research projects have alleviated the infrastructure of research laboratories in the college. The DCE releases fund annually for updating the available technologies like print journal to e-journals, library digitalization and bar-coding and to avail membership in INFLIB-NET for scientific information. The college has DBT funded Bioinformatics facility to cater research activities and provide education in computational biology to students. This facility also has various software to support research activities.

3.1.4 Efforts made by the institution in developing scientific temper and research culture and aptitude among students

Developing scientific temper and research culture among students being an integral part of our vision and mission, the college lays emphasis on the same by the following activities-

- **Projects for students** – the college was sanctioned with 04 VGST projects and were successfully completed. Students from the departments of Zoology, Microbiology, Botany and Computer-science are also guided to do projects as prescribed in their curriculum and are evaluated.
- **Science exhibition** – students have participated in zonal and state level science exhibitions conducted by Karnataka Vignana Parishath (Government of Karnataka) and other colleges. On the event of Platinum

jubilee celebrations of the college, a Science Lecture series and an inter-collegiate Science Exhibition was organised on March 22nd 2014, in association with Karnataka State Vignana Parishath. 64 participants took part in it and prizes were awarded for best exhibits in Biological, Physical and Chemical Sciences separately. Lectures on “Fostering Scientific Temper” And on “Significance of National Science Day –remembering Sir C.V. Ramnan” was delivered by Dr. Someshwar and Dr. Chellakere Yeriswamy.

- **Quiz and lecture contest** – the college has encouraged students to actively participate in inter-collegiate, department wise quiz and lecture contest competitions. Students have won laurels and prizes.
- **Visits to Institutes and Industries**- Students are taken to various research institutes and industries to keep abreast of the recent technologies. Also field trips are arranged to collect samples.
- Students have also participated in oral, poster presentation, scientific collage competitions as well as publications in journals and college magazines.
- Students were encouraged to pursue add-on course related to research.
- Various departments of our college have organized numerous workshops, seminars, conferences and invited lectures to expose students to scientists and inculcate scientific and research culture.

3.1. 5 Faculty involvement in active research (Guiding student research, leading Research Projects, engaged in individual/collaborative research activity, etc.)

- Faculty of PG department of microbiology are involved in guiding in-house student projects as a part of the curriculum

Name of the faculty	Number of Students
Dr. Kavitha B	7
Dr. Arun Jyothi Mathias	7

Dr. Viswanatha T	7
Sri A Dhulappa	6

- Faculty of Physics, Biochemistry and Mathematics are involved in guiding students for Ph.D. programme

Name of the faculty	Number of Students for Ph.D/M.phil
Dr. Nagesh Babu	3
Dr. L. G Meera	3
Dr. Asha Devi	2
Dr. Ramagopal	1
Dr. Vanishree K	2
Dr. Bellad	2

- Around 28 faculty members have been sanctioned minor and major research projects of which 14 have completed their projects; the other projects are ongoing. Most of the research projects are interdisciplinary.
- The faculty members are encouraged to take up research work through faculty development programme (FDP) and 09 faculty have availed the opportunity since 2009.

3.1.6 Details of workshops/ training programmes/sensitization programmes conducted/organized by the institution with focus on capacity building in terms of research and imbibing research culture among the staff and students.

Almost all the departments are involved in organizing workshops and conferences in the college with focus on imbibing research culture among staff and students

Sl No	Department	Date	Topic of Workshop/ Seminar/ Symposium	Funding agency Grant sanctioned by (Rs)
1.	Mathematics	12-13 March 2012	National Conference on 'Role of discrete mathematics in mathematics and computer science'	UGC 1,00,000=00
2.	Botany	8-9 Oct, 2009	National Conference on 'Emerging trends in medicinal plants research'	56,250=00
3.	Economics	23, feb 2010	Seminar on 'Disaster management- issues and solutions'	30,000=00=00
4.	Physics	29 th -31 st March 2012	Workshop on 'Experimental physics'	1,00,000=00
5.	Botany	21-22 March 2013	National Conference on 'Biotechnological approaches in medicinal and aromatic plants research'	1,50,000=00
6.	Chemistry	13-14, Feb 2014	National Conference on 'Frontiers in applied spectroscopy'	1,00,000=00
7.	Bio-Chemistry	To be conducted	National Conference on 'Enzyme research in agriculture, food and industrial biotechnology'	1,00,000=00
8.	Microbiology	To be conducted	Seminar on 'New approaches and concepts in microbial biotechnology'	95,000=00
9.	Zoology	To be conducted	Seminar on 'Stress and Health: frontiers of research in stress related diseases and management'	1,25,000=00
10.	Chemistry	To be conducted	Seminar on 'Advanced nanotechnology and its applications'	1,30,00=00
11.	Statistics	11-12 Sep 2014	Seminar on 'Statistical applications of R- software'	1,20,000=00
12.	Microbiology	19- 20 sep 2013	Lecture workshop on 'Microbial Genomics'	Indian Academy of

				Sciences 97,000=00
13.	Physics	12-13 Nov 2013	Lecture workshop on 'Modern trends in characterization of materials'	Indian Academy of Sciences Rs. 93250=00
14.	Mathematics	6-7 March 2014	Lecture workshop on 'Mathematical Modelling using differential mathematics'	Indian Academy of Sciences Rs. 67690=00
15.	Biochemistry	10 th - 25 th Feb 2014	21 day Workshop on 'RNAi technologies and its applications'	DBT 3,05,000=00
16.	Economics	29- 30 Aug 2013	National conference on 'FDI in India- Impact and challenges'	UGC 1,00,000=00
17.	Zoology	31 Aug 2013	Workshop on 'Bee keeping- Creating Women entrepreneurship in rural economy'	Department Self
18.	Physics	9, April 2013	National Seminar on 'Solar Energy and its applications'	BBMP and KSPCB Rs. 100000=00

3.1.7 Details of prioritized research areas and the expertise available with the institution

Sl no	Department	Area of research	Field of expertise
1	Chemistry and Biochemistry	Synthetic organic chemistry, electro chemistry, kinetics, analytical chemistry, plant molecular biology, phytochemistry, phytotherapeutics	Synthetic organic chemistry, electro chemistry, kinetics, analytical chemistry, plant molecular biology, phytochemistry, phytotherapeutics
2	Physics	Chemistry, physics, bioinformatics,	Composite materials, laser dyes, solar radiation

		geological science, environmental science	
3	Electronics	Fibre optic communication, analogue to digital converters, feeding systems for antennas, fuzzy logic controller	Analogue to digital converter, antennas and SMPS, fuzzy logic controller.
4	Computer science	Data mining and software engineering, system simulation, queing theory, object oriented concepts, image processing	Data mining and software engineering
5	Statistics	Inference	-
6	Economics	Women urban cooperative banking	Banking and quantitative method
7	Mathematics	Computational fluid dynamics, fluid dynamics, topology, complex analysis	Computational fluid dynamics, fluid dynamics
8	Botany	Cytogenetics, plant breeding, hydrobiology, plant pathology, mycology, tissue culture, plant biotechnology, taxonomy	Cytogenetics, plant breeding, hydrobiology, plant pathology, mycology, tissue culture, plant biotechnology, taxonomy
9	Zoology	Cytogenetics, physiology, reproductive physiology, fishery	Neurotoxicology, molecular physiology, apiculture, biophysics,

		biology, entomology	sericulture
10	Sericulture	Biochemistry, genetics, pest control	Sericulture
11	Biotechnology	Molecular embryology, gene toxicity, molecular biology, entomology	Molecular embryology, gene toxicity, molecular biology, entomology
12	Microbiology	Invertebrate microbiology, microbial biotechnology, environmental, medical, soil microbiology	Microbial diversity, environmental and medical microbiology, antibiotic resistance, enzymes in bioengineering process
13	English	Common wealth literature and phonetics	Common wealth literature and phonetics
14	Telugu	Lyrical creations	Lyrical creations
15	Kannada	Feminist criticism, cultural criticism	Music, dance, criticism
16	Psychology	Positive Psychology,	Psychological Test

3.1.8 Efforts of the institution in attracting researchers of eminence to visit the campus and interact with teachers and students

Various departments of the college organizes workshops and lectures providing an opportunity to teachers and students to interact with eminent researchers. Details of eminent speakers who visited the college during the last four year include

Sl No	Name of the invitee and affiliation	Purpose of visit	Topic spoken
1.	Prof. P Balaram, Director, IISc	National conference on frontiers in applied	Keynote address
2.	Dr. Reji Philip, Raman Research Institute		Nonlinear optics
3.	Prof. Syed Akheel Ahmed,		Green spectroscopic

	Former vice chancellor, Mysore university	spectroscopy	methods
4.	Dr. Chandrashekar , Bruker india scientific pvt. Ltd		NMR applications in inorganic metal complexes
5.	Dr. M.S Reddy, Professor and director, Centre for apicultural studies, Bangalore university	Workshop	Beekeeping
6.	Dr. Mehaboob basha and Dr. M. G Venkatesha Professors, department of zoology, Bangalore university	Invited lectures	Toxicology and entomology
7.	Anantha A. C, Bharath Electronics Ltd.	Guest lecture	Applications of microcontrollers.
8.	Prof. Anjali A Karande, Department of Biochemistry, IISc	Faculty development programme in microbiology	Immunology of cancer
9.	Prof. Depankar Nandi, Department of Biochemistry, IISc		Major histocompatibility complex
10.	Uday Kumar Ranga, Molecular Biology and Genetics unit, JNCASR		Ways and means to improvise performance of an HIV DNA vaccine.
11.	Prof. Jayant B Udgaonkar, NCBS, Bangalore		Protein Misfolding and Diseases
12.	Prof. D.N. Rao, Department of Biochemistry, IISc., Bangalore		Restriction Modification Enzymes
13.	Prof. Sowdhamini, NCBS, Bangalore		Role of Bioinformatics in Morden biology
14.	Prof. M R N Murthy, Department of Molecular Biophysics Unit, IISc., Bangalore		Protein Structure
15.	Prof. Umesh Varshney , Department of Biochemistry, IISc., Bangalore		Mechanism of Protein Synthesis in Prokaryotes
16.	Prof. S. Mahadevan, Department of MRDG, IISc., Bangalore	Lecture Workshop on microbial Genomics	Evolution in the microbial World
17.	Dr. Shikha Laloraya, Department of Biochemistry, IISc., Bangalore		Chromosome organization in Saccharomyces

			cerevisiae
18.	Dr. Deepa Agashe, NCBS, Bangalore		Bacterial genome evolution
19.	Dr. Saumitra Das, Department of Microbiology and Cell biology, IISc. Bangalore		Translational control of cellular genes by internal initiation
20.	Dr. V Nagaraja, Department of Microbiology and Cell biology, IISc. Bangalore		Metagenomics- a revolution in microbiology
21.	Dr. Balasubramanyam M, Assistant director and senior scientist, madras diabetics and research foundation, Chennai.	RNAi technologies and its applications.	Core faculty
22.	Dr. Rajalakshmi Gope, Prof and head, department of human genetics		Core faculty
23.	Satish S, ISRO	National workshop	Satellites and its applications
24.	Dr. Sheela ,IISc	National conference	Renewable energy and climate change
25.	Dr. K. J. Rao, IISc		Novel properties of materials
26.	Dr. A. Raghunathan, RRI		Liquid crystals and its applications
27.	Dr. Krishna B Athreya, IOWA State university, USA	Invited lecture	Polynomial formula for sum of powers and integrals.
28.	Dr. H. B. Walikar ,Karnatak university, Dharwad	National conference	Fibonacci numbers
29.	Mrs. Jija Hari Singh, DGP home guard and director of emergency and fire services	State level workshop	Disaster management
30.	Dr. Bisalaiah, Former vice chancellor, UAS Bangalore	National conference	FDI in agriculture
31.	Dr. Ravishankar ,IIHR	Guest lecture	Molecular markers
32.	Dr. A. K. Roy, Bhagalpur university	National conference	Conservation of medicinal plants
33.	Dr. R.R Rao, Central Institute of Medicinal Plants	National conference	Biopreservation
34.	Dr. Akula Ramakrishna, CSIR, Mysore		Secondary metabolites

3.1.9 Percentage of the faculty utilized Sabbatical Leave for research activities

Our Faculty have not availed sabbatical leave, nevertheless they have availed leave for completion of their doctoral degrees through UGC FDP programme

3.1.10 Details of the initiatives taken up by the institution in creating awareness/advocating/transfer of relative findings of research of the institution and elsewhere to students and community (lab to land)

The findings of research are presented and discussed during workshops, conferences and seminars. The same is published in reputed journals and magazines. Students are encouraged to participate in workshops, conferences, seminars and hands on training organized by the college as well as other institutions. They have made oral and poster presentations of their projects completed in the department. Departments of Microbiology, Botany, Zoology, Biotechnology and Chemistry, have wall magazines where recent trends in the respective fields of research are collected and displayed by the students and faculty.

Student research project of Ms. Divya K (M.Sc- 2014) titled “ are we aware how contaminated our mobile phones are?” was published as story in Bangalore mirror (News Paper) on 11/8/2014. The research findings were discussed in Kannada news Channels- Suvarna news 24x 7 and Public TV on 11th and 12 of Aug 2014.

3.2 Resource Mobilization for Research

3.2.1 Percentage of the total budget earmarked for research and details of major heads of expenditure, financial allocation and actual utilization.

Funds are allocated by the Government for improving laboratory infrastructure. Government also sanctions grants for books and journals that are being used for research. The teachers make use of the grants that can be procured from UGC, DBT, DST, SERB and other funding agencies. These funds are utilized as per the allocation by the funding agencies. The College permits use of existing

infrastructure for research activities. Internet is made available freely to staff and the bioinformatics facility is being made use of optimally.

3.2.2 Provision of seed money to the faculty for research and details of the amount disbursed and the percentage of the faculty that has availed the facility in the last four years

Our college being governed by the Department of Collegiate Education, Government of Karnataka, the provision for providing seed money to the faculty for research does not exist. But the faculties are encouraged to take up the research facilities availed through the research bodies such as UGC, DST, DBT, VGST and SERB.

3.2.3 Financial provisions made available to support student research projects by students

The research body, VGST has financially supported four student research projects during 2009- 2014, to the departments of Physics, Chemistry, Botany and Sericulture. Microbiology students make use of the consumables in the laboratories for their in house projects.

Details of student projects VGST

Sl. No	Name of the students	Guide	year	Title of the Project	Sanctioned (Rs)
1.	S Asma and Nayana Bhat	Dr. Shylaja, Dr. Shubha	2010-2011	Study of antibacterial activity of <i>Costus Pictus</i> (Insulin Plant)	30,000/-
2.	D. Divya, and Suhasini R	Dr. Shubha Dr. Shylaja,	2010-2011	Study of antibacterial activity of <i>Sauropus androgynus</i>	30,000/-
3.	Vindhya and Shobana	Dr. Shivashankarappa	2011-2012	Comparative study of Growth parameters and biochemical	30,000/-

				analysis of mulberry by using silk worm litter and FYM	
4.	Ramya Shree G.V and Mamatha B.N	Dr. Vijaya Kumar G	2013-2014	Preparation and study of polyvinyl alcohol film as humidity sensor	23,000/-

3.2.4 Interaction of various departments/units/staff of the institute in undertaking inter-disciplinary research with examples of successful endeavors and challenges faced in organizing interdisciplinary research

30 faculty members have taken up inter-disciplinary research projects. During the period of research, faculty members have shared the laboratories, information and technical skills. Faculties from the department of Chemistry have used microbiology laboratory and faculty expertise for microbial testing of their samples. The Microbiology department frequently uses the expertise of statistics department faculty for analysis of their project results using statistical softwares. An interdisciplinary project proposal between Microbiology and Biochemistry departments has been recently submitted to UGC. A student project with the help of chemistry and microbiology department is being executed.

3.2.5 Ensuring optimal use of various equipment and research facilities of the institution by its staff and students

Equipments procured through research funds, UGC and state grants are utilized by the staff and students of the college. The faculty of the departments are permitted to make use of equipments available in the sister departments. Bioinformatics facility is widely used by the staff and students for *in-silico* research.

3.2.6 Special grants or finances from the industry or other beneficiary agency for developing research facility

The college has not received such grants

3.2.7 Support provided to the faculty in securing research funds from various funding agencies, industry and other organizations and details of ongoing and completed projects and grants received during the last four years

Details of major research projects:

Sl. No	Name of the faculty and Department	Duration on Year From To	Title of the project	Funding agency and status	Total Grants	
					Sanctioned (Rs)	Released (Rs)
1.	Dr. Kavitha B Microbiology	2006	Establishment of Bioinformatics Infrastructure facility (BIF) for the promotion of Biology Teaching through Bioinformatics(BT BI)	DBT / Ongoing	54,00,000	54,00,000
2.	Dr.S.M Gangadharaiah Kannada	2008-2012	Usage of Kannada in Parliament	UGC / Completed	1,87,000	1,18,500
3.	Dr.Vanishree Mathematics	2010-2013	Analytical and numerical study of ginzburg-landau model arising in porous media convection	UGC/ Completed	8,59,300	6,02,800 + 4,05,577
4.		2011	Identification and functional analysis of novel miRNA from French bean (Phaseolus vulgaris) under abiotic stress conditions	UGC/ Ongoing	11,30,800	8,11,800
5.	Dr. Nagesh Babu Chemistry/ Biochemistry	2012	Studies on small RNA mediated responses to abiotic stress in finger millet	DBT / Ongoing	23,30,000	19,00,000
6.		2013	Towards understanding transcriptional regulatory networks in abiotic stress responses and tolerance in groundnut	SERB/ Ongoing	12,00,000	6,00,000

7.	Dr. Babu Giriya Gowda Chemistry	2013	Spectroscopic and electrochemical evaluation of pharmaceutically important drugs with new biomolecules	UGC / Ongoing	9,06,800	5,02,800
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Details of minor research projects:

Sl. No	Name of the faculty and department	Year	Topic	Total grants		Status
				Sanctioned (Rs)	Released (Rs)	
1.	Dr.A.C.Manjula Sericulture	2009 - 2013	Biochemical analysis in some races of tropical silk worm.	1,60,000/-	1,37,500/- +22,454/-	Completed
2.	Dr. Shabana Begum Zoology	2009 - 2012	Fluoride induced toxic impairments in rat nervous system:an evaluation on multigenerational study.	1,05,000/-	75,000/- +30,000/-	Completed
3.	Dr.N.Nagarathna Mathematics	2009 - 2012	The effects of dispersion and gravity modulation on buoyancy convection in stratified flows through porous media	85,000/-	77,500/-	Completed
4.	P.Suman Microbiology	2009 - 2013	To study and identify the aeroallergens	1,10,000/-	80,000/- +24,000/-	Completed
5.	Shantha Kumari Physical Education	2009 - 2012	A comparative study of haemoglobin,serum cholesterol and vital capacity among sedentary and non sedentary college girls	1,05,000/-	90,000/- +14,927/-	Completed
6.	Vidya .G Chemistry	2009 - 2012	Bioremediation of textile dyes	1,35,000/-	1,05,000/- +29,058/-	Completed
7.	Dr. S.S. Bellad Physics	2009 - 2011	Synthesis of Li-Mg ferrite	70,000/-	40,000/- +24,000/- +4,274/-	Completed
8.	Dr. Shafia Hoor.F Chemistry	2010 - 2012	Electroless deposition and characterization of Fe-MO and FE-MO-Pt alloys	1,50,000/-	1,07,000/- +42,500/-	Completed
9.	Veena.K Chemistry	2010 - 2012	Synthesis of substituted naphthol(2,1-b) furan for suppression of pimples	2,00,000/-	1,45,000/- +44,000/- +10,978/-	Completed
10.	Shubha Botany	2010 -	Growth and antioxidant	1,70,000/-		Completed

		2011	content analysis of compost and bioinoculant treated medicinal plants.		1,40,000/- +24,000/-	
11.	Salma Begum Economics	2010 - 2012	Role of govt policies in the devt of enterprenuership among women	1,10,000/-	70,000/-	Completed
12.	Dr. Balasubramanyam Zoology	2010 - 2012	Investigations on minor constituents of wild and apiary honey of western ghats of Karnataka.	1,90,000/-	1,89,717/- +32,217/-	Completed
13.	Dr. Ramesh.I Zoology	2010 - 2012	Monitoring of ground water quality with special ref to fluoride and arsenic of bagepalli taluk in chikkaballpur district	1,60,000/-	1,30,000/- +28,789/-	Completed
14.	Dr. Vishwanath. T Microbiology	2011	Isolation of host specific bacteriophages from sewage against human pathogens.	1,20,000/-	90,000/-	Ongoing
15.	Dr. Narayana Hosamani Botany	2011	Biodegradation and utilization of keratinous waste.	1,30,000/-	90,000/-	Ongoing
16.	Dr. Nadaf. Y. F Physics	2011	Rotational reorientation and nanostructure studies of laser dyes	75,000/-	42,500/-	Ongoing
17.	Dr. Vijay Kumar. G. Physics	2014	Preparation and studies on pure and rare earth doped poly vinyl alcohol films	1,02,000/-	81,000/-	Ongoing
18.	Dr. Madhusudhan. S Bio Technology	2014	Quarium quenching – a target to attenuate the virulence of <i>Ralstonia solaneceraum</i>	2,00,000/-	160000/-	Ongoing
19.	A. Dhulappa Microbiology	2014	An approach on citric acid synthesis through strain improvement by using <i>Aspergillus oryzae</i>	1,90,000/-	135000/-	Ongoing
20.	Dr. Prathibha. K. Y. Botany	2014	Understanding the role of non coding RNA.....important crop plants	1,40,000/-	72500/-	Ongoing
21.	Dr. Suresh Kumar Botany	2014	Antimicrobial activity of gymnema sylvestre	1,30,000/-	80000/-	Ongoing
22.	Dr. Nagana Gouda Biochemistry	2014	Production, characterization of microbial galactosidases and their applications	2,00,000/-	150000/-	Ongoing
23.	Sridhar B. T. Chemistry	2014	Phenoxazines as specific inhibitors of	1,75,000/-	1,02,500/-	Ongoing

			Akt in cancer cells and their kinetics and mechanistic approach			
24.	Mohan kumar B.S. Zoology	2014	Functional study on aging in Rat brain mitochondria.....oxidative stress	1,70,000/-	1,25,000/-	Ongoing
25.	Dr. A. C. Manjula Sericulture	2014	Molecular characterization of some Indian Mulberry varieties	1,50,000/-	1,20,000/-	Ongoing
26.	Dr. M. Bhushanam Zoology	2014	Physico-chemical properties and antibacterial efficacy of Apis Honey	1,20,000/-	80,000/-	Ongoing

3.3 Research Facilities

3.3.1 Research facilities available to the students and research scholars within the campus

Most of our departments have adequate research facilities for students to undertake projects. PG students of Microbiology take up in house projects. Departments of Botany and Zoology also have undertaken curricular projects in the departments. High-end instruments, sophisticated information technology, digitalized library are widely used by both the students and faculty for their research.

3.3.2 Strategies for planning, upgrading and creating infrastructural facilities to meet the needs of researchers especially in the new and emerging areas of research

The research committee of the college involves in planning and creating infrastructural facilities for the proposed research area. The major strategy is to get funds to support the research facilities from various funding agencies. Many faculty members have availed these facilities for the upgradation of their laboratories. With 3 major projects the department of Biochemistry is well equipped with the latest facilities.

3.3.4 Research facilities made available to the students and research scholars outside the campus / other research laboratories

The college encourages and permits students to approach outside research laboratories and institutions on their own for projects.

3.3.5 Library/ information resource center or any other facilities available specifically for the researchers

The college library was set up in the year 1938 with the meager book collection of 200. Gradually the number of books has increased to 42,237 which include 26340 titles and 6237 reference books and 302 CD ROMs. The strength of our library is the good collection of resources for both curriculum and research. The library also provides 6247 e-journals, 93809 e-books through INFLIBNET NLIST programme, 32 national and international Journals with 50 back volumes. The library is also supported with well qualified librarians who provide services to the stakeholders.

The college has been sanctioned with full fledged bioinformatics laboratory funded by DBT. Ours is the only Government college in the state to have this facility, to cater the research activities and provide education in computational biology to students.

3.3.6 Collaborative research facilities developed/ created by the research institutes in the college. For ex. Laboratories, library, instruments, computers, new technology etc

The college has not as yet developed such facilities but our faculty have been in collaboration with other institutes for their research work.

3.4 Research Publications and Awards

3.4.1 Highlights of the major research achievements of the staff and students in terms of

Patents obtained and filed (process and product)	Nil
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Original research contributing to product improvement	Nil
Research studies or surveys benefiting the community or improving the services	A study on Biodegradation and utilization of keratinous waste was done by Dr. Narayan Hosamani
	M.Sc. student Divya guided by Dr. Arun Jyothi Mathias have made a study on presence of Multiple antibiotic resistant bacteria on mobile phones.
	Dr. Jayasheelan has done work on Monitoring of ground water quality of bagepalli taluk in chikkaballpur district, a study of distribution of radionucleides in cultivated land in and around Chikmagalur, a study on airborne radioactivity levels in dwellings of Tumkur district and many more related work.
	Studies on Antifungal and anti bacterial activity has been done by Dr. Lalitha V
Research inputs contributing to new initiatives and social development	A study on Role of Govt policies in the development of entrepreneurship among women was conducted by Prof. Salma Begum
	Investigations on minor constituents of wild and apiary honey of western ghats of Karnataka was done by Dr. Balasubramanyam

3.4.2 Publication of research journal(s): indicate the composition of the editorial board, publication policies and whether such publication is listed in any international database

The college does not have a research journal of its own. Nevertheless the faculty of the college are members of the editorial board of research journals. The details are as follows

Dr. Arun Jyothi Mathias, Microbiology department	Editorial Board Member of International Journal of Horticulture and Crop Science Research (IJHCSR) International Journal of Molecular Genetics (IJMG) International Journal of Applied Biotechnology and
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	Biochemistry(IJABB) Developmental Microbiology and Molecular Biology (DMMB) The International Journal of Agriculture Food Science & Technology (IJAFST) International Journal of Biotechnology and Bioengineering Research (IJBBR) International Journal of Genetic Engineering and Biotechnology (IJGEB) International Journal of Applied Agricultural Research(IJAAR)
Dr. Nagesh Babu, Biochemistry Department	Reviewer for Greener Journals

3.4.3 Details of publications by the faculty and students

Sl. No.	Name of the Faculty	Publications since 2009	
		National	International
1.	Dr Sandhya kulkarni	04	
2.	Dr S S Bellad		03
3.	Dr Vijayaskumar	01	03
4.	Dr Jayasheelan		07
5.	Dr. Hanumantha raju N	3	
6.	Dr. Vanishree R K		6
7.	Dr. Shobha V Bhimsen	5	
8.	Dr. Madhusudhan S	1	2
9.	Dr. Prathibha K Y	1	4
10.	Dr. Lalitha V		30
11.	Dr. Shashikala Devi K	3	3

12.	Dr. Nagesh babu R		13
13.	Dr. Keshamma E		1
14.	Dr. Nagana gouda V Kote		2
15.	Dr. Asma Saquib	3	5
16.	Dr. Shafia Hoor F	2	1
17.	Veena K	1	4
18.	Dr. Babu giriya gowda		4
19.	Dr. Prajwal Lourdes lobo		11
20.	Dr. Shivkumar K N	3	1
21.	Dr. Ravindra naik T		5
22.	Dr. L H Shivshankarappa	3	2
23.	Dr. Shabana begum	7	8
24.	Dr. Hemalatha A	2	
25.	Dr. Bhushanam M		2
26.	Mohan kumar B S	1	
27.	Dr. Kavitha B	2	1
28.	Dr. Arun jyothi Mathais	3	2
29.	Dr. Vishvanath T	1	15
30.	Mr. Dhulappa A		1
31.	Mariraj V Sedam	14	
	Total	60	136

Details of publications by faculty is given in their respective departmental reports

Number of papers published by students in peer reviewed journals

Name of the student and department	Publication details
Spoorthi N Jain Reena V Aishwarya Sampath Divyashree BC	Spoorthi N Jain *Vishwanatha T, , Reena V, Divyashree BC Aishwarya Sampath, Siddhalingeswara KG, Venugopal N., Ramesh I. 2012. Antibiotic synergy test: Checkerboard method

<p>Department of Microbiology</p>	<p>on multidrug resistant <i>Pseudomonas aeruginosa</i>. International research Journal of pharmacy. 2(12).pp 196-198.</p> <p>Divyashree BC, *Vishwanatha T, Spoorthi N Jain , Reena V, Aishwarya Sampath, Siddhalingeswara KG, Venugopal N. Evaluation Of In Vitro Synergy Between Ampicillin And Kanamycin Against <i>Staphylococcus Aureus</i> Journal of Drug Delivery & Therapeutics; 2012, 2(4), 144-146</p> <p>Aishwarya Sampath, Vishwanatha T*, Sathishagouda S, Spoorthi N Jain ., Divyashree B.C., Reena V.,. Siddhalingeswara K.G., Venugopal. N. and Dayanad A.(2011) Bacteriophage: Novel biocontrol agent against citrus canker., Asiatic Journal of Biotechnology Resources; 2011; 2 (6) 775-779</p> <p>Vishwanatha T, Spoorthi N.Jain, Reena V, Divyashree B.C, Siddalingeswara K.G, Karthic J and Sudipta K.M.(2010). Screening Of Substrates For Protease Production From <i>Bacillus licheniformis</i>. International Journal of Engineering Science and Technology. Vol. 2(10), 6550-6554</p>
<p>F Soundra Josephine, Ramya V S, Neelam Devi</p> <p>Department of Microbiology</p>	<p>F Soundra Josephine¹, Ramya V S¹, Neelam Devi¹, Suresh Babu Ganapa²,Siddalingeswara K. G¹. Venugopal. N¹ and Vishwanatha T: 2012., Isolation, production and characterization of protease from <i>Bacillus Sp</i> isolated from soil sample. J. Microbiol. Biotech. Res., 2012, 2 (1):163-168</p>
<p>Aishwarya Sampath Spoorthi N. Jain Divyashree B.C Reena V. Sowmya G</p> <p>Department of Microbiology</p>	<p>Vishwanataha T., Aishwarya Sampath, Spoorthi N. Jain, Divyashree B.C., Reena V., Sowmya G., MohanKumar B.S.,Venugopal N., Sharangowda J. Patil and Siddalingeswara K.G.(2012) A Novel Approach for Screening and Synthesis of β - Galactosidase from Microbial Origin., International Journal of Applied Biotechnology and Biochemistry. Volume 2, Number 3 pp. 285-290</p>

Name of the faculty	Details of Chapter in Books/ Books edited/ Books
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	written
Dr. L. G Meera	Ranga Shale (plays for children) 2010, Chitarnatya foundation, Bangalore
	Kempu balunu maththu ithara shishu geethegalu(Kannada rhymes audio CD) 2010 Chitarnatya foundation, Bangalore
	Adishakthiya lekhami – literary criticism 2010- Chitarnatya foundation, Bangalore
	Makkala kuvempu maththu ithara natakagalu – plays for children (to be published)
Dr. Asha Devi	Naduve Suliva Aatma- collection of critical essays 2012- Aaharnishi Prakashana, Shimoga
	Veena Shanteswara Vachiike (Ed.) Nudi Prakashana, Bangalore 2012
	Hudugarada Dukha (Ed.) - Aaharnishi Prakashana, Shimoga 2014
	Books in Press D. R Nagaraj- Bele Baluava Barahagalu , Vasantha Prakashana Kannadada 10 mahatvada munudigalu, Abinava Prakashana
Dr. Shobha V Bhimsen	Dr. Rais Ahamed book on Co-operative Management and Development—Text and Cases Mittal Publications ISBN No.81-8324-2863 2009
	Dr. P. Arunachalam-Inclusive growth in India, serials publication, New Delhi-ISBN No.978-81-8387-3086 2010
	Prof. Mookambika, Dr. Raghukumar- Women in service sector in India- Himalaya Publications ISBN No.878-93-819792-6-6
	Dr. Rais Ahamed, Dr. Mohamd Co-operatives in India Regal Publications, New Delhi ISBN No.978-81-81-84-412-2 2014
	Prof. Deepali Khale- Financial inclusion, Issues and Challenges Mittal publications , New Delhi 2013

3.4.4 Details of

* research awards received by the faculty:

Sl. no	Name of the faculty	Department	Award	Year

1.	Dr. Bhushanam M	Zoology	Ph.D.	2009
2.	Dr. Vijaya B.N	Zoology	Ph. D.	2010
3.	Dr. Arun Jyothi mathias	Microbiology	Ph.D.	2010
4.	Dr. Hanmantha Raju N	Physics	Ph.D.	2010
5.	Dr. Vijaykumar G	Physics	Ph.D.	2011
6.	Dr. Kavitha B	Microbiology	Ph.D.	2012
7.	Dr. Asma Saqib	Biochemistry	Ph.D.	2012
8.	Dr. Shashikala Devi	Chemistry	Ph.D.	2012
9.	Dr. Yethiraj	Computer science	Ph.D.	2012
10.	Dr. Prajwal Lourdes Lobo	Chemistry	Ph.D.	2013
11.	Dr. Hemalatha A	Zoology	Ph. D.	2013
12.	Dr. Sandhya Kulkarni	Physics	Ph. D.	2014
13.	Dr. Sriprakash G	Physics	Ph.D.	2014
14.	Dr. Madhusudan S	Bio technology	Ph. D.	2014
15.	Dr. Mariraj Sedam	Librarian	Ph. D.	2014

*** recognition received by the faculty from reputed professional bodies and agencies, nationally and internationally**

Name of the Faculty	Department	Award/Recognition	Period/Awarded by
Dr. Madhusudan	Biotechnology	Recipient of SRFP for Teachers for Research carried out at CIMAP, Lucknow.	Indian Academy of Science Bangalore, April-June, 2012.
Dr. Bhushanam M	Zoology	Young Scientist Award and State Madhumitra Award.	International workshop on technology transfer in bee-keeping (APIEXPO- 2014) organised by BUB and AIBA, GOK during 24/2/2014-2/3/2014.
Mohan kumar B S	Zoology	Summer Research Fellowship	IAS, INSA and NSA, 2011.