



MILAGRES COLLEGE

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Contents

Year 2021-2022

- Faculty
- Action Plan 2021-2022
- Action Plan Implemented: Activities
- Staff Achievements
- Student Achievements
- Result Analysis
- Laboratory
- Best Practices
- Planning and Curriculum Delivery
 - ✓ Lesson plan
 - ✓ Departmental Meetings
 - ✓ Department Library
 - ✓ Tutorials
 - ✓ Bridge Course, Internal Tests
 - ✓ Advanced Learners
 - ✓ Slow Learners: Remedial Coaching
- Cross Cutting Issues of the Curriculum
- Programme Specific Outcomes
- Attainment of Course Outcome, Programme Specific Outcome and Course Outcome
- Mentor-Mentee

DEPARTMENT OF CHEMISTRY

Year: 2021-2022

➤ Faculty

Staff					
Sl.No.	Name of the Staff	Qualification	Status	Designation	Date of Joining the Service
01	Rev. Dr (Fr) Prakash Anil Castelino	M Sc. Ph.D	Management	Associate Professor & HOD	01-01-2019
02	Mrs Loyleeta M D Souza	M Sc., K-SET	Management	Lecturer	01-01-2021
Lab Asst	Mr. Dinakar Poojary	M.A.	Permanent	Lab Asst	1507-1984

No. of Students

III B Sc	II B Sc	I B Sc
27	15	14

➤ Action Plan For the Academic Year 2021-2022

- 1) Arranging at least two guest Lectures to BSc Students
- 2) Organize inter class seminar, Quiz and Science Model Competitions
- 3) Organize University level Fr G. D'Cruz memorial Science Competitions to PG, UG and PU Students.
- 4) Arranging Study Tour/Industrial Visits to B Sc. Students.
- 5) Participation in National/International level Seminars.

- 6) Training to Students on software's like Chem draw, chem Sketch.
- 7) Basics of Computer skills to B Sc. Students.
- 8) Bridge Course and Remedial course in Chemistry to the students.
- 9) Waste Management Seminar
- 10) Visit to Planetarium, Chemical Industry
- 11) Visit to neighbouring Colleges, PU and Highschools
- 12) Help to neighbouring schools
- 13) Support to economically poor students to help their studies.
- 14) Staff attending atleast two national/state level seminars.
- 15) Online classes-use of PPT, google class rooms
- 16) Seminars, assignments to students.
- 17) Involve in social development activities (NSS, NCC, awareness programmes)
- 18) Celebrate National Festivals.

➤ **Action Plan Implemented: Activities Conducted During the Year 2021-2022**

➤ **Curriculum:**

Classes, Laboratory experiments were conducted in accordance with the syllabus prescribed by the Mangalore University-UG course.

For III and II years CBCS syllabus was implemented.

For I years NEP syllabus is Introduced.

Participation of Staff and Students in National Conference at Udupi

Staff Members Dr (Fr) Prakash Anil Castelino and Mrs. Loyleeta D'Souza participated in the National Conference on 29-07-2022 at Poornaprajna College, Udupi on the topic 'Recent Developments in Chemical Sciences'.

Dr (Fr) Prakash Anil Castelino, moderated/chaired the session in the National Conference on 29-07-2022 at Poornaprajna College, Udupi on the topic 'Recent Developments in Chemical Sciences'.

The Department of Chemistry apart from the regular academic and related activities conducted various activities which are of use for the growth of staff and students. The Prominent ones are,

Work shop on Waste Management and Development of Green Campus.

Along with the Science Association, the Chemistry Department conducted '**Waste Management Programme**' on 03-03-2022, in the Audio Visual Hall in which 56 students and 6 staff members participated in the event which had inputs, discussion and action Plan. Mr. Joseph Rebello, was the resource person.

Campus Cleaning and Segregation of Waste.

The Department of Chemistry and 56 students joined hands and cleaned path adjacent to the play ground till the main entrance of the Church, on 04-03-2022 as a token of service to maintain a clean campus. 56 students and Dr Prakash Anil Castelino and Mrs. Loyleeta D'Souza, the staff members participated in the event. The students expressed their joy over contribution of their work towards the College.

Visit to Swami Vivekananda Planetarium, Science Museum and Biological Park at Pilikula, Mangalore All staff members of Science faculty and all 56 students visited Pilikula, Mangalore on 26-08-2022 and spent an entire day refreshing. Refreshing memories at heritage museum, Exposure to nature at Zoological park, creativity expressions in Science Museum and visuals of Planetarium added new scope for development and also spirit of Research for future in students.

➤ Staff Achievements

Staff Members **Dr (Fr) Prakash Anil Castelino** and **Mrs. Loyleeta D'Souza** participated in the National Conference on 29-07-2022 at Poornaprajna College, Udupi on the topic '**Recent Developments in Chemical Sciences**'.

Dr (Fr) Prakash Anil Castelino, moderated/chaired the session in the National Conference on 29-07-2022 at Poornaprajna College, Udupi on the topic '**Recent Developments in Chemical Sciences**'.

➤ Students Achievements: Student's participation in seminars and competitions. Student's tiny steps

5 students of III B SC, **Miss. Monica Mendonca, Miss. Nisitha, Mr. Aaronha Alex DSouza, Mr. Delson D'Souza, and Mr. Girish M.** participated in the National Conference on 29-07-2022 at Poornaprajna College, Udupi on the topic '**Recent Developments in Chemical Sciences**'.

Science Fest 'Synantiemai' for PU, UG and PG Students of Science streams.

Fr G. L. D'Cruz memorial Science Fest/Get together 'Synantiemai' was organized along with Science Association on 03-08-2022 in AV Hall, Silver Jubilee Hall, MCCE Hall and Chemistry Lab to PU, UG and PG students of Science streams. Ardent and passionate lovers of Science from the PU, Degree Colleges and Post Graduate Centres of 13 colleges numbering about 200 enthusiastically attended the Fest. The leadership was taken by the students of B Sc. programme.

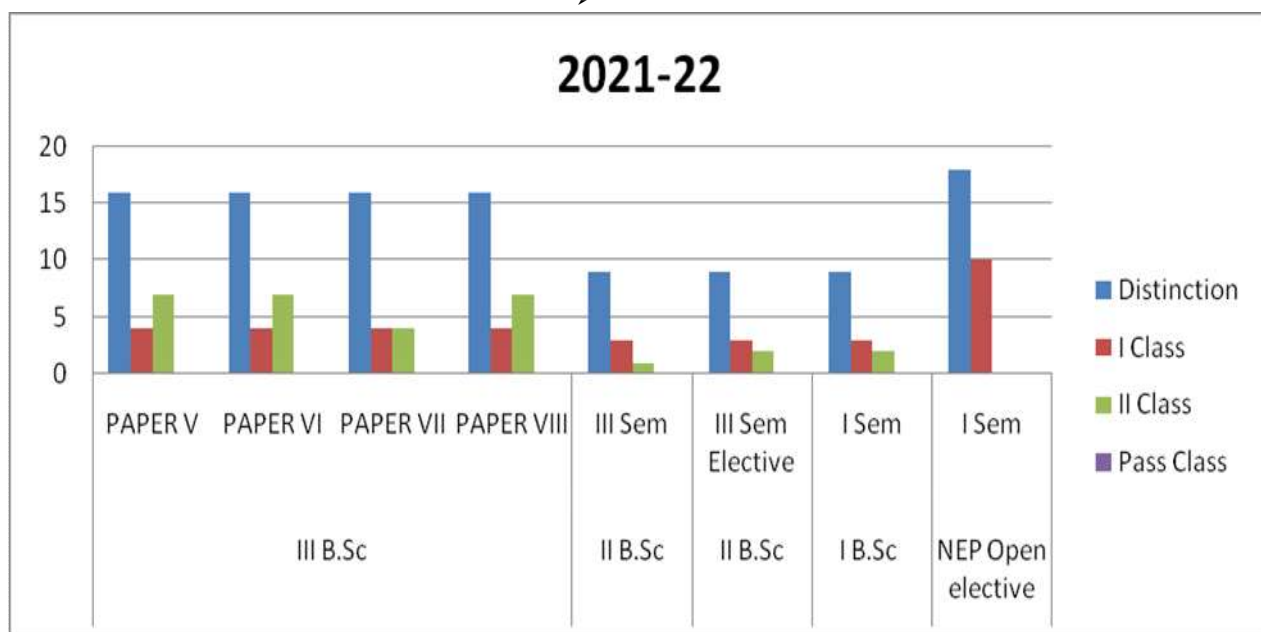
The Department is in grief at the death of Mr. Shodan Shetty, who left this world due to an accident. May his Soul Rest in Peace.

Milaverse: Students participated in a week long leadership training programmes. Students planned programmes, and systematically materialized them.

Nayak- Day without Teachers Students shouldered the responsibility of teachers totally for a day in the campus, for which the Chemistry Department was not an exception.

Result Analysis: University Examinations 2021-2022

CLASS		Total Students	Students appeared	Students Passed	Percentage	Distinction	I Class	II Class	Pass Class
III B.Sc	PAPER V	27	27	27	100	16	4	7	0
	PAPER VI	27	27	27	100	16	4	7	0
	PAPER VII	27	27	27	100	16	4	4	0
	PAPER VIII	27	27	27	100	16	4	7	0
II B.Sc	III Sem	15	15	13	86.66	9	3	1	0
II B.Sc	III Sem Elective	15	15	15	100	9	3	2	0
I B.Sc NEP	I Sem	14	14	14	100	9	3	2	0
NEP Open elective	I Sem	30	30	28		18	10	0	0



➤ **Laboratory**

The department has a full pledged laboratory. The Laboratory was renovated in 2020. It has basic facilities required for UG curriculum. Safety precautions, signboards were added. Apron and safety precautions like goggles are providing best guidelines. The laboratory contains safety measures such as fire extinguishers, First aid etc. and is well maintained.

➤ **Best Practices**

1. Opportunity and Guidance to college/high school students to have experience in the campus, Department and in the Laboratory.
2. Special encouragements to the students in using Departmental Library to acquire additional knowledge in the subject.
3. Getting students to the Campus to participate in various Science Events.
4. Computer skills
4. Soft Skill Developments
- 5.. Visit to Primary schools and creating awareness of Basic Sciences.

➤ **Planning and Curriculum Delivery**

The assessment of the effective delivery of the curriculum and learning outcome is ensured through bridge course, the periodic interaction with the learners, assignments, class tests, internal assessment tests (mandatory by the University) and university semester examinations.

✓ **Lesson plan**

Teachers prepare monthly plan of the syllabus for each semester to complete the syllabus systematically.

✓ **Department Meetings**

We conduct Dept. Meetings to discuss many issues relating to the curriculum. Staff and the Laboratory Asst meet regularly to discuss the curriculum. Regular meetings were conducted to discuss mode of operation of syllabus, Bridge course, remedial courses, activities of the department etc. Every programme was evaluated during the Departmental meetings. After the announcement of the results/class test the performance of each student was evaluated and the remedial measures were taken.

- ✓ Syllabus - Method of Teaching
- ✓ Conducting Bridge Course
- ✓ Identifying slow learners and remedial coaching
- ✓ Discussion on guest lectures

- ✓ Project for the year and visits to farms, industries, fisher folk, banks etc.
- ✓ Conducting Tests and Seminars
- ✓ Review of syllabus done and students' performance in examinations.
- ✓ Use of modern techniques of teaching
- ✓ Preparation for NAAC visit - Documents to be prepared

✓ **Departmental Library**

Latest editions are available in all the Disciplines of Chemistry are available in the Department Library to have additional Knowledge. Research journals of Chemistry and Environment and Chemistry Today are also available in the College Library. All the books are used by the students. Mr. Ronald Rajesh Lewis and Mr. Laxman, Alumni of the Department donated a number of books to the Departmental Library.

✓ **Bridge Course**

A bridge course of 10 hours for newly admitted students is conducted every year to I B Sc. Students. The main objective of the course is to bridge the gap between subjects studied at Pre-university level and subjects they would be studying in Graduation. The syllabus was framed. It included the introduction to Chemistry, Fundamentals of Chemistry, basic Information of Periodic table, Atomic Structure, IUPAC Nomenclature and volumetric analysis. At the end of Bridge course a test was conducted and the progress was evaluated. These classes help them to understand the syllabus of I degree better. 14 students participated in the programme.

✓ **Internal Tests**

Every year we conduct class test/ internal assessment tests to evaluate the learning ability, skills of the students.

The performance of the learners in university examinations is documented in the register of examinations, class test/ internal assessment test scorings are documented in the office for computation of internal assessment marks.

After the evaluation of the internal assessment & university examinations, advanced learners and slow learners are identified and special efforts are made to encourage them.

➤ **Tutorials**

The tutorial work taken by Dr Prakash Anil Castelino and Mrs. Loyleeta M. D'Souza. Two hours of tutorials per week were held. About 15 students were given to each lecturer and the teacher guided the students in both academic as well as co-curricular activities. Timely advice was given to the student/s.

➤ **Advanced learners**

Advanced learners are asked to refer more books from the library and collect more information from online and are motivated to present papers and teach their peers. These students were given text books and asked to prepare notes and help the slow learners. They were made to present papers in class and Seminars with power point presentations and on the board by the traditional methods.

15 students were part of it.

➤ **Slow Learners: Remedial coaching**

These students were given remedial coaching after class hours. Tests were given to these students. They were made to write assignments. Examination question papers were discussed with them. Students benefited from constant tips and revision along with constant instruction on different issues and concepts.

14 students were part of it.

➤ **Teaching Methodology**

Students and staff use modern and Innovative techniques of teaching along with traditional method of chalk and talk.

➤ **Cross Cutting Issues of the Curriculum in the Chemistry Department.**

Human Values: Value Education Classes, Communal harmony

Gender : Study Constitution, Co-education college, Respect to others, National Festival Celebrations

Environment and Sustainability: Eco friendly practices in the Lab, Environment Chemistry, Students participate in NCC, NSS, Paddy cultivation, Chemistry in Daily Life.

Professional Ethics: Right usage of knowable to build progressive and development Society, Importance of Higher Education, Lab safety.

➤ **PROGRAMME SPECIFIC OUTCOMES**

The Department gives awareness about the programme outcomes to have an overall idea about the knowledge, skills, abilities and attitudes that students can acquire during the pursuit of UG courses. In the B. Sc programme Chemistry Courses are part. The specific learning outcomes of various courses are built into the curriculum of each programme is available on the Mangalore **University website**

(www.mangaloreuniversity.ac.in). Learning outcomes form an integral part of college vision, mission and objectives.

The Institution communicates the programme and course outcomes to the teachers and students in the following ways:

- Learning Outcomes of Programs and Courses are uploaded on the website of the college.
- Freshers get the required information from the college prospectus, college notice boards and student Handbooks.
- During admission, Students are informed of the courses and their outcomes.
- The outcomes of each programme and the course outcome of each subject are made known to the students by organizing Orientation Programmes.
- The hard copy of the syllabus of each subject with course outcomes is made available in the respective departments for ready reference for the teachers and students.
- Course outcomes are displayed on the departmental notice board.
- Teachers make the students understand the learning outcome of each unit, making the teaching-learning process more fruitful.
- The interactive sessions with successful alumni are organized to guide students to choose programmes to shape their careers.
- Teachers of every department interact with the students about what they are supposed to get at the end of each program.
- Teachers participate in the workshops organized for revising the syllabus of the various subjects under various programmes of the University.
- College puts up the digital flex boards in the prominent area of the college to make the stakeholders aware of the programmes of the college and also highlights students achievements and list the kind of jobs that students can get after completion of the different programs.
- **Programme Specific Outcome for Chemistry are,**
 - Helps Students to develop skills
 - Laboratory Experience
 - Scope for Research and Higher Education: M Sc. Ph. D, Bed etc.
 - Competitive exams preparation
 - Civil service-Entry
 - Development of Scientific temper

➤ Attainment of Course Outcome (CO'S), and Programme Specific Outcomes (PSO's)

Students are evaluated based on continuous evaluation based on

- Through the Vision, Mission of the College

“To transform youth into responsible citizens and competent professionals through quality education and research.”

- Vision Mission of the Department
- Through their Learning capacity: Slow, average and Advanced Learners
- Exposure to Industry, Field Visits
- Seminars, Projects etc.
- Entrepreneurship awareness.
- Certificate courses and training programmes.
- Experiential learning.
- Coaching for competitive exams (IAS, CET etc.)
- Talent Nurturing programmes in the campus: Soft skill Development
- Course outcomes are measured through the performance of the students in the class, practical, internal evaluations, and external evaluations.

ATTAINMENT OF COURSE OUTCOME, PROGRAMME SPECIFIC OUTCOME AND COURSE OUTCOME

Table 1: Assessment Method

Component	Maximum Marks		Maximum Weightage %
	Assessed	Awarded	
Semester	100	100	100

Table 2: Weightage by students and Scale used to assess the attainment

Weightage obtained	Scale used	Level of attainment of Outcome
0-40	1	Low
41-50	2	Lower
51-60	3	Moderate
61-75	4	High
75-100	5	Higher

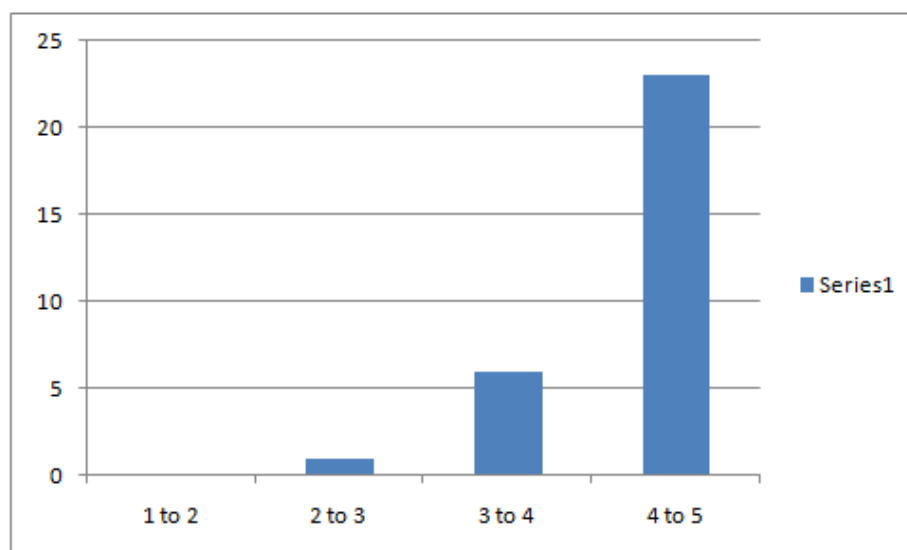
Formula Applied For Course Outcome: =IF(D5<41,1,IF(D5<51, 2, IF(D5<61, 3, IF(D5<76, 4,5))))

Attainment of Course Outcome

Attainment of Course Outcome				
SL NO	DEPARTMNET	SEM	COURSE	MEAN
1	BSC	I	BSCCHN	4.23
2	BSC	I	English	4.77
3	BSC	I	Language-Kannada/Hindi	4.54
4	BSC	I	MATHEMATICS	3.77
5	BSC	I	BSCCHPN	5
6	BSC	I	BSCMTPN	4.77
7	BSC	I	Digital Fluency	5
8	BSC	I	H & W	5
9	BSC	I	YOGA	5
10	BSC	I	Open Elective	4.62
11	BSC	III	PHYSICS PRACTICAL III	4.67
12	BSC	III	MATHEMATICS PRACTICAL-III	4.53
13	BSC	III	COMPULSORY FOUNDATION COURSE IN ENGLISH	4.2
14	BSC	III	Gender Equity	4.8
15	BSC	III	MATHEMATICS SEQUENCES, SERIES & DIFFERENTIAL EQUATIONS	3.27
16	BSC	III	PHYSICS	2.87
17	BSC	III	EXTRA AND CO-CURRICULAR ACTIVITIES	4.87
18	BSC	III	CHEMISTRY PAPER III	4.07
19	BSC	III	CHEMISTRY AND ENVIRONMENT	4.47
20	BSC	III	CHEMISTRY PRACTICAL III	5
21	BSC	III	LANGUAGE	4.4

22	BSC	V	PHYSICS PRACTICALS V	4.68
23	BSC	V	CONDENSED MATTER PHYSICS	3.54
24	BSC	V	MODERN PHYSICS	3.39
25	BSC	V	PRACTICAL LAB V	4.54
26	BSC	V	GRAPH THEORY	4.32
27	BSC	V	ALGEBRA AND LAPLACE TRANSFORMS	4.14
28	BSC	V	CHEMISTRY PRACTICAL V	5
29	BSC	V	CHEMISTRY PAPER VI	3.75
30	BSC	V	CHEMISTRY PAPER V	3.75

Distribution of Courses by attainment of Course outcome –BSC



Percentage Distribution of Courses by attainment of Course outcome – BSC

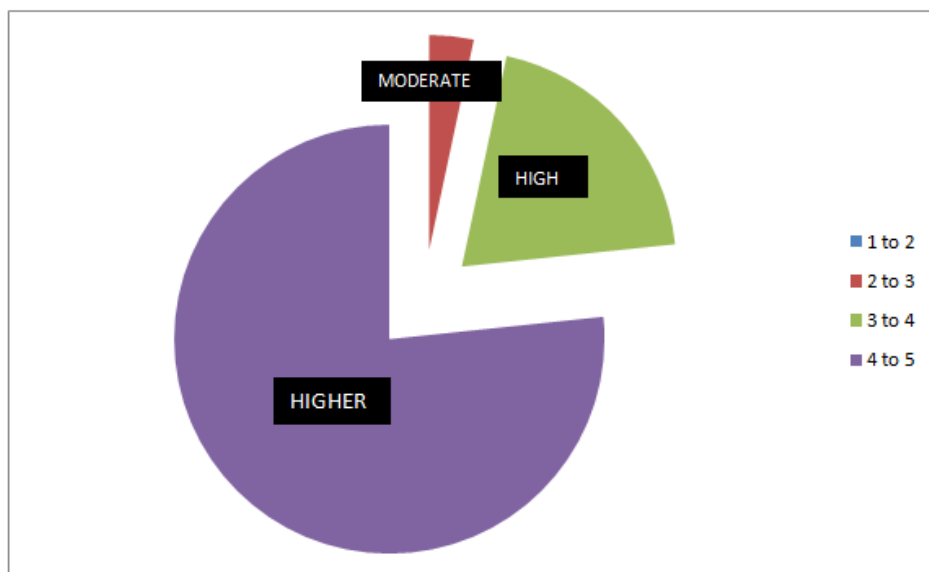


Table 3: Weightage by students and Scale used to assess Program Outcomes

SI No.	Scale used	Level of attainment of Outcome
1	0-1.5	Low
2	1.5 – 2.5	Lower
3	2.5-3.5	Moderate
4	3.5 – 4.5	High
5	4.5 and above	Higher

ATTAINMENT OF PROGRAMME OUTCOME(BSC)					
Sl. No.	DEPARTMENT	OVERALL OUTCOME ACROSS YEARS			PROGRAM OUTCOME
		I	II	III	
1	BSC	4.669231	4.284848	4.123015873	4.359031709

College Cumulative Average

As the means of all years were tabulated to derive the POs for each UG , the means of the UG have been tabulated to arrive at the cumulative average for the

performance of the institution in attainment of the PO's and CO's. As illustrated below, the college average (as per Table 3) falls in the scale of HIGH.

College Cumulative Average: 3.69913567

Attainment level: High

➤ **Mentor-Mentee**

Every teacher of the department conducts is assigned the responsibility of mentoring a group of students. The teacher interacts personally with the allotted students to know their family background, social and economic status, their emotional problems if any. These mentees meet mentors regularly to seek advice and share their feelings. Mentors give guidance, and advice to the mentees to improve their performance in the studies ,encourage them to participate in extra-curricular activities, prepare them to face the challenges in life and become a successful in life.

Students Progression

Best Ourgoing Student: Monica Leyona Mendonca-III B Sc.

Name	Progression after UG
ANUSHA SHETTY	M Sc. Chemistry
CHAITHRA SHETTY	M Sc. Chemistry
KEERTHANA	Cognizant, Mangalore
KEERTHANA SHETTY	Infosys
GIRISH KUMAR M D	M Sc. Physics
KEERTHESH	M Sc. Chemistry
MONICA LEYONA MENDONCA	M Sc. Chemistry
RASHMITHA	M Sc. Physics
ARROONHA ALEX DSOUZA	M Sc. Chemistry

DELSON D'SOUZA	M Sc. Maths
NIDHI MARIA MACHADO	M Sc. Maths
Sushmitha	Infosys
Nischitha	Infosys



Best Ourgoing Student: Monica Leyona Mendonca-III B Sc.

Glympsies of year 2021-2022







