Rayat Shikshan Sanstha's

Abasaheb Marathe Arts and New Commerce, Science College, Rajapur

INTERNAL QUALITY ASSURANCE CELL (IQAC) 2022-23

Notice of the first meeting of the IQAC for the academic year 2022-23

Date: 28th June 2022

All members of the IQAC are informed that the first meeting of IQAC will be held on 1st July 2022 at 11:00 a. m. in IQAC Meeting Hall. All members are requested to attend the same.

The agenda has enclosed with the notice.

Coordinator
Internal Quality Assurance Cell

Principal
A.M.A. & N.C.S. College
Rajapur, Dist. Ratnagiri.

Agenda of the first meeting of the IQAC for academic year 2022– 23:-

1) Submission of AQAR for academic year 2021-22.

2) Review of online admission status of UG classes.

3) Preparation of academic calendar and departmental perspective plan for the academic year 2022-23.

4) Discussion on semester wise syllabus planning and time- table for teaching learning process.

5) Organization of seminars during the academic year 2022-23.

6) Discussion on establishment of Language Lab.

7) Any other relevant issue (s) with permission of the chairman.

Rayat Shikshan Sanstha's

Abasaheb Marathe Arts and New Commerce, Science College, Rajapur

INTERNAL QUALITY ASSURANCE CELL (IQAC) 2022-23

Minutes of the first meeting of the IQAC for the academic year 2022-23

The first meeting of the IQAC for the academic year 2022-23 was held on 1st July 2022 at 11:00 a. m. in IQAC Meeting Hall. Following members of the IQAC were present for the meeting.

Sr. No.	Name of the Member	Designation
1	Dr. G. D. Harale	Chairperson
2	Adv. Rahul Rane	Member, Management Representative
3	Mr.Dilipsheth Patankar	Member, Industrialist
4	Mr. Satish Redij	Member, Society
5	Mr. Prasad Moharkar	Member, Alumni
6	Mr. G. R. Karade	Member, Teaching Staff
7	Mr. G. B. Pawar	Member, Teaching Staff
8	Dr. H. N. Akolkar	Member, Teaching Staff
9	Mr. A. A. Londhe	Member, Teaching Staff
10	Mr. A. S. Mali	Member, Teaching Staff
11	Mr. S. M. Kamble	Member, Teaching Staff
12	Dr. K. A. Sasane	Member, Teaching Staff
13	Mr. D. S. Walke	Member, Administrative Staff
14	Miss. Purva Bakalkar	Student Representative
15	Dr. A. V. Bhave	Coordinator

Dr. A. V. Bhave, IQAC Coordinator initiated the meeting by welcoming all the members of IQAC and read the minutes of the last meeting of the IQAC for academic year 2021-22. The minutes of the earlier meeting and action taken report were approved by the IQAC members without any modification.

Agenda

Agenda of the first meeting for academic year 2022 – 23 was as follows:-

1) Submission of AQAR for academic year 2021-22.

2) Review of online admission status of UG classes.

3) Preparation of academic calendar and departmental perspective plan for the academic year 2022-23.

4) Discussion on semester wise syllabus planning and time- table for teaching learning process.

5) Organization of seminars during the academic year 2022-23.

6) Discussion on establishment of Language Lab.

7) Any other relevant issue (s) with permission of the chairman.

It was resolved that:

1) AQAR for the academic year 2021-22 should be submitted online on or before October 2022.

2) Admission of UG classes should be carried out as per the timeline given by University of Mumbai.

3) All academic departments should prepare perspective plan for the academic year 2022-23 and execute the same during the academic year.

4) All faculty members should submit semester wise syllabus planning to IQAC and conduct lectures as per the plan.

5) Academic departments should plan for organization of seminars during the academic year 2022-23.

6) Language Lab should be established for the benefit of all language departments.

7) IQAC of the college should conduct induction programme for fresher students of UG classes.

Coordinator
Internal Quality Assurance Cell

Principal
A.M.A.&N.C.S.College
Rajapur,(V.Gothne)Dist.Ratnagiri.

Rayat Shikshan Sanstha's

Abasaheb Marathe Arts and New Commerce, Science College, Rajapur

INTERNAL QUALITY ASSURANCE CELL (IQAC) 2022-23

Action Taken Report

In accordance with the first meeting of the IQAC for the academic year 2022-23 held on 1st July 2022

Sr. No.	Particulars	Action taken
1.	Submission of AQAR for the academic year 2021-22	AQAR for the academic year 2021-22 was submitted to NAAC online on 05/06/2023
2.	Review of online admission status of UG classes	Online admission of UG classes were completed in stipulated time as per the timeline given by University of Mumbai.
3.	Preparation of academic calendar and departmental perspective plan for the academic year 2022-23.	Each academic department prepared perspective plan /academic calendar for academic year 2022-23 and executed the same during the academic year 2022-23.
4.	Discussion on semester wise syllabus planning and time table for teaching learning process.	All faculty members submitted semester wise syllabus planning and individual time table to the IQAC and executed the same during the academic year 2022-23.
5.	Organization of seminars during the academic year 2022-23.	IQAC and academic departments of the college conducted 5 seminars during the academic year 2022-23.
6.	Discussion on establishment of Language Lab.	Established Language Lab and installed software.
7.	Any other relevant issue (s) with permission of the chairman.	IQAC of the college conducted induction programme for fresher students of UG classes online in July 2022. Prin Dr. G. D. Harale provided guidance to the students and gave information about different facilities available on the college campus.

Coordinator
Internal Quality Assurance Cell

Principal
A. M. A. & N. C. S. College
Rajapur, Dist. Ratnagiri.

Rayat Shikshan Sanstha's

Abasaheb Marathe Arts and New Commerce, Science College, Rajapur

INTERNAL QUALITY ASSURANCE CELL (IQAC) 2022-23

Notice of the second meeting of the IQAC for the academic year 2022-23

Date: 18th October 2022

All members of the IQAC are informed that the second meeting of IQAC will be held on 20th October 2022 at 11:00 a. m. in IQAC Meeting Hall. All members are requested to attend the same.

The agenda has enclosed with the notice.

Coordinator
Internal Quality Assurance Cell

Principal
A.M.A. & N.C.S. College
Rajapur, Dist. Ratnagiri.

Agenda of the second meeting of the IQAC for academic year 2022– 23:-

1. Review of Admission Status of UG and PG classes.
2. Review of completion of syllabus of UG and PG classes.
3. Review about requirement for sports material.
4. Review of research contribution of faculty members during 2022-23.
5. Review of activities conducted during the first term of 2022-23.
6. Submission of data for NIRF 2023.
7. Any other relevant issue(s) with permission of the Chairman.

Rayat Shikshan Sanstha's

Abasaheb Marathe Arts and New Commerce, Science College, Rajapur

INTERNAL QUALITY ASSURANCE CELL (IQAC) 2022-23

Minutes of the second meeting of the IQAC for the academic year 2022-23

The second meeting of the IQAC for academic year 2022-23 was held on 20th October 2022 at 11: 00 a.m. in IQAC Meeting Hall. Following members of the IQAC were present for the meeting.

Sr. No.	Name of the Member	Designation
1	Dr. G. D. Harale	Chairperson
2	Adv. Rahul Rane	Member, Management Representative
3	Mr.Dilipsheth Patankar	Member, Industrialist
4	Mr. Satish Redij	Member, Society
5	Mr. Prasad Moharkar	Member, Alumni
6	Mr. G. R. Karade	Member, Teaching Staff
7	Mr. G. B. Pawar	Member, Teaching Staff
8	Dr. H. N. Akolkar	Member, Teaching Staff
9	Mr. A. A. Londhe	Member, Teaching Staff
10	Mr. A. S. Mali	Member, Teaching Staff
11	Mr. S. M. Kamble	Member, Teaching Staff
12	Dr. K. A. Sasane	Member, Teaching Staff
13	Mr. D. S. Walke	Member, Administrative Staff
14	Miss. Purva Bakalkar	Student Representative
15	Dr. A. V. Bhave	Coordinator

Dr. A. V. Bhave, IQAC Coordinator initiated the meeting by welcoming all the members of IQAC and read the minutes of the first meeting of the IQAC for academic year 2022-23. The minutes of the first meeting and action taken report were approved by the IQAC members without any modification.

Agenda

Agenda of the second meeting for academic year 2022 – 23 was as follows:-

1. Review of Admission Status of UG and PG classes.
2. Review of completion of syllabus of UG and PG classes.
3. Review about requirement for sports material.
4. Review of research contribution of faculty members during 2022-23.
5. Review of activities conducted during the first term of 2022-23.
6. Submission of data for NIRF 2023.
7. Any other relevant issue(s) with permission of the Chairman.

It was resolved that:

1. More efforts are required to be taken to increase admissions of UG and PG classes during the upcoming academic year.
2. Review of completion of syllabus of UG and PG classes during the first term should be taken.
3. Gymkhana department should purchase required sports material.
4. The IQAC reviewed research contribution of all faculty members and resolved to disburse Rs.500 for paper presentation in conference once in the academic year 2022-23 to the faculty members.
5. All academic departments and support services should continue quality initiatives during 2022-23.
6. IQAC should collect data required for NIRF 2023 and submit the same as per the timeline given.

Coordinator
Internal Quality Assurance Cell

Principal
A.M.A.&N.C.S.College
Rajapur,(V.Gothne)Dist.Ratnagiri.

Rayat Shikshan Sanstha's

Abasaheb Marathe Arts and New Commerce, Science College, Rajapur

INTERNAL QUALITY ASSURANCE CELL (IQAC) 2022-23

Action Taken Report

In accordance with the second meeting of the IQAC for the academic year 2022-23 held on 20th October 2022

Sr. No.	Particular	Action Taken
1	Review of Admission Status of UG and PG classes.	Admission of UG and PG classes were completed as per the timeline given by University of Mumbai.
2	Review of completion of syllabus of UG and PG classes.	Syllabus for first term of UG and PG classes was completed.
3	Review about requirement for sports material	Gymkhana department purchased required sports material.
4	Review of research contribution of faculty members during the academic year 2022-23.	1 Patent, 2 Books and 7 Research Papers in UGC Care Listed Journals published and two seminars conducted are the major research outcomes during the first term of the academic year 2022-23.
5	Review of activities conducted during the first term of the academic year 2022-23	All academic departments and support services were given suggestion to preserve the documents of the activities conducted during the first term of the academic year 2022-23.
6	Submission of data for NIRF 2022-23.	The college has participated in NIRF 2022-23 in Overall and College category in the year and submitted the required data on 19/01/2023.

Coordinator
Internal Quality Assurance Cell

Principal
A.M.A. & N.C.S. College
Rajapur, Dist. Ratnagiri.

Rayat Shikshan Sanstha's

Abasaheb Marathe Arts and New Commerce, Science College, Rajapur

INTERNAL QUALITY ASSURANCE CELL (IQAC) 2022-23

Notice of the third meeting of the IQAC for the academic year 2022-23

Date: 17th January 2023

All members of the IQAC are informed that the third meeting of IQAC will be held on 20th January 2023 at 11:00 a. m. in IQAC Meeting Hall. All members are requested to attend the same.

The agenda has enclosed with the notice.

Coordinator
Internal Quality Assurance Cell

Principal
A.M.A. & N.C.S. College
Rajapur, Dist. Ratnagiri.

Agenda of the third meeting of the IQAC for academic year 2022– 23:-

1. Organization of Student Satisfaction Survey (SSS) for academic year 2022-23.
2. Organization of lectures on NEP and campaign for ABC Id.
3. Planning for examinations of UG and PG classes during First Half of 2023.
4. Review of teaching learning process and attendance of UG and PG classes.
5. Review of perspective plan/ academic calendar of academic departments and support services.
6. Documentation of the activities conducted during academic year 2022-23.
7. Any other relevant issue(s) with permission of the Chairman.

Rayat Shikshan Sanstha's

Abasaheb Marathe Arts and New Commerce, Science College, Rajapur

INTERNAL QUALITY ASSURANCE CELL (IQAC) 2022-23

Minutes of the third meeting of the IQAC for the academic year 2022-23

The third meeting of the IQAC for the academic year 2022-23 was held on 20th January 2023 at 11:00 a. m. in IQAC Meeting Hall. Following members of the IQAC were present for the meeting.

Sr. No.	Name of the Member	Designation
1	Dr. G. D. Harale	Chairperson
2	Adv. Rahul Rane	Member, Management Representative
3	Mr.Dilipsheth Patankar	Member, Industrialist
4	Mr. Satish Redij	Member, Society
5	Mr. Prasad Moharkar	Member, Alumni
6	Mr. G. R. Karade	Member, Teaching Staff
7	Mr. G. B. Pawar	Member, Teaching Staff
8	Dr. H. N. Akolkar	Member, Teaching Staff
9	Mr. A. A. Londhe	Member, Teaching Staff
10	Mr. A. S. Mali	Member, Teaching Staff
11	Mr. S. M. Kamble	Member, Teaching Staff
12	Dr. K. A. Sasane	Member, Teaching Staff
13	Mr. D. S. Walke	Member, Administrative Staff
14	Miss. Purva Bakalkar	Student Representative
15	Dr. A. V. Bhave	Coordinator

Dr. A. V. Bhave, IQAC Coordinator initiated the meeting by welcoming all the members of IQAC and read the minutes of the second meeting of the IQAC for academic year 2022-23. The minutes of the earlier meeting and action taken report were approved by the IQAC members without any modification.

Agenda

Agenda of the third meeting for academic year 2022-23 was as follows:-

1. Organization of Student Satisfaction Survey (SSS) for academic year 2022-23.
2. Organization of lectures on NEP and campaign for ABC Id.
3. Planning for examinations of UG and PG classes during First Half of 2023.
4. Review of teaching learning process and attendance of UG and PG classes.
5. Review of perspective plan/ academic calendar of academic departments and support services.
6. Documentation of the activities conducted during academic year 2022-23.
7. Any other relevant issue(s) with permission of the Chairman.

It was resolved that:

1 .Online Student Satisfaction Survey (SSS) for academic year 2022-23 be conducted in the month of March 2023 and analysis of the feedback received should be done before fourth meeting of IQAC.

2. Staff Academy should organize lectures on NEP and Admission committee in coordination with Mentor Teachers should ensure that each and every student should have ABC Id.

3. Planning for examinations of UG and PG classes conducted during First Half of 2023 should be carried out.

4. Review of teaching-learning process and regular attendance of the students should be conducted.

5. Each academic department and support service should complete the remaining activities stated in their respective Perspective Plan before April 2023.

6. All academic departments and support services should up keep documents as per the SOP of NAAC.

Coordinator
Internal Quality Assurance Cell

Principal
A.M.A.& N.C.S.College
Rajapur,(V.Gothne)Dist.Ratnagiri.

Rayat Shikshan Sanstha's

Abasaheb Marathe Arts and New Commerce, Science College, Rajapur

INTERNAL QUALITY ASSURANCE CELL (IQAC) 2022-23

Action Taken Report

In accordance with the Third meeting of the IQAC for the academic year 2022-23 held on 20th January 2023

Sr. No.	Particular	Action Taken
1	Organization of Student Satisfaction Survey (SSS) for academic year 2022-23.	IQAC of the college conducted Students Satisfaction Survey in February-March 2023. 114 students participated in the survey.
2	Organization of Lectures on NEP and campaign for ABC Id.	Staff Academy organized lectures on NEP and Admission committee in coordination with Mentor Teachers organized campaign for ensuring that each and every student should have ABC Id.
3	Planning for examinations of First Half of 2023.	Examinations of UG and PG classes of first half of 2023 were conducted in the month of March, April and May 2023 as per the timetables given by University of Mumbai.
4	Review of teaching learning process and attendance of UG and PG classes.	All HODs monitored the smooth conduct of online lectures of UG and PG classes during the academic year. Syllabus completion reports were collected from respective faculty members. Regular attendance of the students recorded.
5	Review of perspective plan/ academic calendar of academic departments and support services.	All academic departments and support services conducted majority of the activities as per their perspective plan/ academic calendar by the end of the academic year 2022-23.
6	Documentation of the activities conducted during the academic year 2022-23.	All academic departments were given suggestions to preserve documents of activities conducted during the academic year 2022-23 as per the SOP given by NAAC.

Coordinator
Internal Quality Assurance Cell

Principal
A.M.A. & N.C.S. College
Rajapur, Dist. Ratnagiri.

Rayat Shikshan Sanstha's

Abasaheb Marathe Arts and New Commerce, Science College, Rajapur

INTERNAL QUALITY ASSURANCE CELL (IQAC) 2022-23

Notice of the fourth meeting of the IQAC for the academic year 2022-23

Date: 25th April 2023

All members of the IQAC are informed that the fourth meeting of IQAC will be held on 28th April 2023 at 11:00 a. m. in IQAC Meeting Hall. All members are requested to attend the same.

The agenda has enclosed with the notice.

Coordinator
Internal Quality Assurance Cell

Principal
A.M.A. & N.C.S. College
Rajapur, Dist. Ratnagiri.

Agenda of the fourth meeting of the IQAC for academic year 2022– 23:-

1. Documentation and drafting of AQAR for the academic year 2022-23.
2. Review of Plan of Action and ATR for academic year 2022-23.
3. Analysis of Student Satisfaction Survey (SSS) for the academic year 2022-23.
4. Review of examinations of UG and PG classes.
5. Review of research contribution of faculty members during the academic year 2022-23.
6. Planning for admission of S.Y/T.Y.B.A/B.Com/B.Sc. and M.Com. II classes for the academic year 2023-24.
7. Any other relevant issues with permission of the Chairman.

Rayat Shikshan Sanstha's

Abasaheb Marathe Arts and New Commerce, Science College, Rajapur

INTERNAL QUALITY ASSURANCE CELL (IQAC) 2022-23

Minutes of the fourth meeting of the IQAC for the academic year 2022-23

The fourth meeting of the IQAC for the academic year 2022-23 was held on 28th April 2023 at 11.00 a.m. in IQAC Meeting Hall. Following members of the IQAC were present for the meeting.

Sr. No.	Name of the Member	Designation
1	Dr. G. D. Harale	Chairperson
2	Adv. Rahul Rane	Member, Management Representative
3	Mr.Dilipsheth Patankar	Member, Industrialist
4	Mr. Satish Redij	Member, Society
5	Mr. Prasad Moharkar	Member, Alumni
6	Mr. G. R. Karade	Member, Teaching Staff
7	Mr. G. B. Pawar	Member, Teaching Staff
8	Dr. H. N. Akolkar	Member, Teaching Staff
9	Mr. A. A. Londhe	Member, Teaching Staff
10	Mr. A. S. Mali	Member, Teaching Staff
11	Mr. S. M. Kamble	Member, Teaching Staff
12	Dr. K. A. Sasane	Member, Teaching Staff
13	Mr. D. S. Walke	Member, Administrative Staff
14	Miss. Purva Bakalkar	Student Representative
15	Dr. A. V. Bhave	Coordinator

Dr. A. V. Bhave, IQAC Coordinator initiated the meeting by welcoming all the members of IQAC and read the minutes of the third meeting of the IQAC for the academic year 2022-23. The minutes of the earlier meeting and action taken report were approved by the IQAC members without any modification.

Agenda

Agenda of the fourth meeting for the academic year 2022-23 was as follows:

1. Documentation and drafting of AQAR for the academic year 2022-23.
2. Review of Plan of Action and ATR for academic year 2022-23.
3. Analysis of Student Satisfaction Survey (SSS) for the academic year 2022-23.
4. Review of examinations of UG and PG classes.
5. Review of research contribution of faculty members during the academic year 2022-23.
6. Planning for admission of S.Y/T.Y.B.A/B.Com/B.Sc. and M.Com. II classes for the academic year 2023-24.
7. Any other relevant issues with permission of the Chairman.

It was resolved that:

1. Collected all data and values required for submission of AQAR 2022-23 and prepared draft of the same.
2. Plan of Action and ATR for academic year 2022-23 be evaluated and prepared annual report of the college accordingly.
3. Analysis of Student Satisfaction Survey (SSS) done by IQAC should be put before CDC and college should take corrective measures for improvement as per the suggestions received from the students.
4. Examination Section of the college should plan for First Half examination of UG and PG classes as per the instructions given by the University of Mumbai.
5. The IQAC should collect documents pertaining research contribution of faculty members during the academic year 2022-23 and incorporate the same for submission of AQAR to NAAC.
6. Admission Committee should plan for admission of second and third year of UG and second year of M. Com. for academic year 2023-24.
7. The IQAC should prepare reports for Academic and Administrative Audit for the academic year 2022-23 to be conducted by Rayat Shikshan Sanstha, Satara.

Coordinator
Internal Quality Assurance Cell

Principal
A.M.A.& N.C.S.College
Rajapur,(V.Gothne)Dist.Ratnagiri.

Rayat Shikshan Sanstha's

Abasaheb Marathe Arts and New Commerce, Science College, Rajapur

INTERNAL QUALITY ASSURANCE CELL (IQAC) 2022-23

Action Taken Report

In accordance with the fourth meeting of the IQAC for the academic year 2022-23 held on 28th April 2023

Sr, No.	Particulars	Action Taken
1	Documentation and drafting of AQAR for the academic year 2022-23.	Collected all data and values required for submission of AQAR 2022-23 and prepared draft of the same. The AQAR 2022-23 will be submitted to NAAC online in March 2023.
2	Review of Plan of Action and ATR for academic year 2022-23.	Plan of Action and ATR for academic year 2022-23 were put before CDC. The same have been approved by the CDC during the meeting held on 21/06/2022.
3	Analysis of Student Satisfaction Survey (SSS) for the academic year 2022-23.	Analysis of Student Satisfaction Survey was done by the IQAC and corrective measures were taken for institutional quality sustenance.
4	Review of examinations of UG and PG classes.	First Half Examinations were conducted in the month of April. May and June as per the timeslots given by University of Mumbai.
5	Review of research contribution of faculty members during 2022-23	1 Patent, 2 Books and 17 Research Papers in UGC Care Listed Journals published and five seminars conducted are the major research outcomes during the academic year 2022-23
6	Planning for admission of S.Y/T.Y. B.A/B.Com/B.Sc. and M.Com. II classes for the academic year 2023-24.	Admission process of S.Y/T.Y.B.A/B.Com/B.Sc. and M.Com. II classes for the academic year 2023-24 was initiated in June 2023.

Coordinator
Internal Quality Assurance Cell

Principal
A.M.A. & N.C.S. College
Rajapur, Dist. Ratnagiri.

Rayat Shikshan Sanstha's
Abasaheb Marathe Arts & New Commerce Science College Rajapur

Department of Chemistry

Attainment of the Programme Outcome

The Department of Chemistry was established in June 1994. The purpose behind the establishment was to give an opportunity to bring the student from remote area of Konkan region to the higher education in chemical science. The B. Sc Chemistry programme enabled the students to enhance their critical thinking, during the three year degree course. The curriculum enhances the mental thoughts of the students this leaded them to take decisions at intellectual, organizational and personal from different perspectives of life. The Department of Chemistry conducted the Campus Interview and most of the students were placed during the interview. The course of chemistry had attained high level of results and academic achievements with enriching programme outcomes.

The further attainments are as follows.

1) Learners obtained an idea about stereochemistry of organic compounds and organic reaction mechanism.
2) They had got knowledge regarding the use of spectroscopic techniques in the structural determination of simple organic compounds.
3) They understood the knowledge of s, p, d, and f-block elements.
4) They had obtained the knowledge of co-ordination compounds including bonding, thermodynamics, kinetic aspects, magnetic and electronic properties
5) Learners acquired the basic knowledge of thermodynamics and electrochemistry.
6) They got an idea of atomic structure and chemical bonding.
7) They learnt the application of elementary quantum mechanics in determining the structure of atom & molecule.
8) Learners knew about the fundamental applications of various drugs such as Analgesic, Antipyretics and Anti-inflammatory.
9) Learners were acquainted with general introduction, classification and applications of dyes.
10) They got familiar with the basic knowledge of sophisticated analytical instruments.

A. M. A. & N. C. S. College, Rajapur V. Gothane
Tal. Rajapur, Dist. Ratnagiri

I/C Principal
A.M.A. & N.C.S.College
Rajapur, Dist. Ratnagiri.

Rayat Shikshan Sanstha's

Abasaheb Marathe Arts and New Commerce, Science College, Rajapur

Department of Chemistry

Program Outcomes (Pos):

1) Idea of stereochemistry of organic compounds and organic reaction mechanism.
2) Use of spectroscopic techniques in the structural determination of simple organic compounds.
3) Gaining the knowledge of s, p, d, and f-block elements.
4) Chemistry of co-ordination compound including bonding, thermodynamic and kinetic aspects, magnetic and electronic properties
5) Basic knowledge of thermodynamics and electrochemistry.
6) Idea of atomic structure, chemical bonding and stereo chemistry.
7) Application of elementary quantum mechanics in determining the structure of atom & molecule.
8) Fundamental applications of various drugs such as Analgesic, Antipyretics and Anti-inflammatory.
9) General introduction, classification and applications of dyes.
10) Basic knowledge of sophisticated analytical instruments.

Program Specific Outcomes (PCOs):

1) Improve the knowledge of students in chemical sciences.
2) Create awareness of the students in environmental problems.
3) Understanding the need of modern tools in chemical sciences.
4) Awareness of the knowledge of instruments to students.
5) Information regarding the market for chemical industry.
6) Developing the practical skill of the students.
7) Understanding the basic information of drugs and dyes.
8) General introduction to Dyestuff Chemistry.
9) Safety in laboratory.
10) Introduction to quality concepts such as quality control, quality assurance and sampling.

Course Outcome (Cos)

Name of Program	Course Title	Course outcomes
F. Y. B. Sc. General Chemistry (Sem-I)	Chemistry P-I	**Physical Chemistry:** Knowledge about chemical thermodynamics, First law of thermodynamics, thermodynamic terms and chemical calculations based on expressing concentration of solutions. Inorganic Chemistry: **Inorganic Chemistry:** Can understand the atomic structure, Rutherford atomic model, Bohr's theory, concept of principles of quantum mechanics, Periodical table and periodicity. **Organic Chemistry:** Can write the IUPAC names of any organic compounds from their structure and draw its structure from its IUPAC name. Bonding and structure of organic compounds, fundamentals of organic reaction mechanisms.
	Chemistry P-II	**Physical Chemistry:** Gain the knowledge of chemical kinetics, order and molecularity of reaction, Integrated rate equation of first and second order reaction, Liquid state such as surface tension, viscosity, refractive index and liquid crystals. **Inorganic Chemistry:** Student comparatively studies the properties of main group elements such as electro negativity, oxidation state, diagonal relationship, allotropy, catenation property. **Organic Chemistry:** Can draw the Fischer, Newman, Sawhorse projection formulae, Cis-Trans, Syn-Anti, E/Z nomenclature. Introduction of optical isomerism and conformation analysis of alkanes.
	Practical's	**Paper-I:** 1. They can determine the rate constant for the hydrolysis of esters by HCl as catalyst, standardization of NaOH by using succinic acid, determination of enthalpy. 2. Commercial analysis of mineral and organic acids and salt of weak acid and strong base. Titrametric analysis using double indicators. **Paper-II:** 1. Can determine the percentage purity of sample by gravimetric analysis.

		2. They can purify and recrystallize the given organic compounds and determine the melting point, boiling point separation of mixtures by chromatographic techniques.
F. Y. B. Sc. General Chemistry (Sem-II)	Chemistry-I	**Physical Chemistry:** They can understand the kinetic theory of gaseous, *Vander-Waals* equation, experimentation of Joule-Thomson effect chemical equlibria and thermodynamic parameters. **Inorganic Chemistry:** They can know the concept of qualitative analysis and acid-base theories i.e. Arrhenius, Lowry-Bronsted and Lewis theory, application of HSAB principle. **Organic Chemistry:** They can understand the chemistry of aliphatic hydrocarbons, elimination reactions, Markownikoff's and anti-markownikoff's addition across alkenes. Electrophilic and nucleophilic additions.
	Chemistry-II	**Physical Chemistry:** Student can gain the knowledge of ionic equiliria, introduction and types of buffer solutions. Molecular spectroscopy and solid state chemistry. **Inorganic Chemistry:** Students can understand the types of chemical bonds, comparison between ionic and covalent bond. VSEPR theory and its applications and limitations. They can find out the oxidation number of various elements, extraction of elements, titration curves of single and multi-electron system. **Organic Chemistry:** They can know the stereochemistry of cyclo-alkanes and conformational analysis. Can apply Huckel's rule to aromatic compounds, determine the anti-aromaticity and aromatic characters of arenes.
	Practical's	**Paper-I:** 1. They can determine the rate constant for the saponification reaction between ethyl acetate and NaOH. Determine the pH values of Buffer solutions. Plotting the calibration curve of $KMnO_4$ by colorimeter. Can write the Material Data Safety Sheet (MSDS). 2. Semi micro qualitative analysis of simple two acidic radicals and two basic radicals from mixture. **Paper-II:** 1. They can find out percentage of Cu(II) in sample by iodimetry.

		2. They can characterize the organic compound containing C, H, O, N, S and halogens elements.
S. Y. B. Sc. (Sem-III)	General Chemistry-I	**Physical Chemistry:** 1. They can know the concept of chemical thermodynamics, Partial Molal Properties, Chemical Potential and its variation with Pressure and Temperature. 2. Can know the concept of electrochemistry, Conductivity, equivalent and molar conductivity and their variation with dilution for weak and strong electrolytes. 3. Can determine the transference number and its experimental determination using Moving boundary method. **Inorganic Chemistry:** 1. Student can understand the chemical bonding, Non-Directional and directional Bonding. 2. Can understand the role of Hybridization and types of hybrid orbitals-*sp*, sp^2, sp^3, sp^3d, sp^2d^2*and* sp^2d sp^3d^2. Molecular Orbital Theory: Linear combination of atomic orbital's (LCAOs) to give molecular orbitals. 3. They can able to draw the Molecular orbital diagram of O_2,O_2^+ O_2^-,O_2^{2-} etc. **Organic Chemistry:** 1. Can study the reactions and reactivity of halogenated hydrocarbons such as Alkyl halides, Aryl halides: Reactivity of aryl halides towards nucleophilic substitution reactions. 2. They can be familiar with the concept of organo-magnesium and organo-lithium compounds and reactivity of carbon-metal bond. 3. Student can know the methods of preparation and reactions of alcohols, phenols and epoxides.
	General Chemistry P-II	**Physical Chemistry:** 1. Student learned the basic concepts of Chemical Kinetics: Reversible or opposing, consecutive and parallel reactions. 2. They can study the effect of temperature on the rate of reaction, Arrhenius equation, Concept of energy of activation. 3. Students can familiarize with the theories of reaction rates i. e. collision theory and activated complex theory of bimolecular reactions. 4. Know the concept of Solutions: Ideal solutions and Raoult's law, deviations from Raoult's law-non-ideal solutions. Vapour pressure-composition and temperature - composition curves of ideal and non-ideal solutions. Distillation of solutions.

		5. Student can study the partial miscibility of liquids: Critical solution temperature; effect of impurity on partial miscibility of liquids with respect to Phenol-Water , Triethanolamine-Water and Nicotine-Water systems **Inorganic Chemistry:** 1. Students aware about the selected topics on p block elements i. e, Boron, Silicon, Germanium, Nitrogen family. **Organic Chemistry:** 1. Student can study the chemistry of carbonyl compounds. 2. They can draw mechanism of Benzoin condensation, Knoevenagel condensation, Claisen-Schmidt and Cannizzaro reaction.
	Basics of Analytical Chemistry P-III	1. Learners should be able to decide how to identify a sample and prepare it for analysis 2. Can select a proper procedure for analysis and identify sources of possible errors in the results obtained. 3. Student can able to select proper titrimetric method identify a suitable gravimetric method. 4. Learners can perform the required calculations involved in the analysis by titrimetry as well as gravimetry.
	Practical's	1. Students can able to handle the analytical instruments such as conductometer, Potentiometer, Colorimeter, pH meter etc. 2. Can determine the energy of activation of acid catalyzed hydrolysis of methyl acetate. 3. Can investigate the reaction between $K_2S_2O_8$ and KI with equal initial concentrations of the reactants 4. They can identify the cations in a given mixture and separating them by analytical method. 5. Check the quality of water sample estimation of its total hardness. 6. Can investigate the purity of organic substances and prepare the derivatives of organic compounds. 7. Can learn the estimation of drugs by titrametric analysis.
S. Y. B. Sc. (Sem-IV)	General Chemistry P-I	**Physical Chemistry:** 1. They can know the concept of Electrochemistry and phase equilibria. 2. Can draw the phase diagrams of one-component systems. **Inorganic Chemistry:** 1. Can learn the properties of Transition series elements. 2. They can understand the Chemistry of Titanium and vanadium. 3. They can familiarize with the Chemistry of Coordination Compounds. 4. Can apply the eighteen electron rule to metal ions. **Organic Chemistry:** 1. Student can know the reaction of carboxylic acids and

		their derivatives. 2. Learners can write the mechanism of Claisen condensation and Dieckmann condensation reaction.
	General Chemistry P-II	**Physical Chemistry:** 1. Learners can know the laws of crystallography and types of crystals and also learn characteristics of simple cubic, face centered cubic and body centered cubic systems. 2. They can derive the Bragg's equation and also determine the Avogadro's number. 3. Student understands the concept of Catalysis. **Inorganic Chemistry:** 1. Student can learn the behavior of ions in aqueous medium. 2. Uses and Environmental Chemistry of volatile Oxides and oxo-acids. **Organic Chemistry:** 1. Student can know the importance of heterocyclic compounds and their synthesis, reaction and applications.
	Basics of Analytical Chemistry P-III	1. The learner understands the importance of separation in sample treatment and various methods of separations. 2. They can learn how to select a method of separation of an analyte from the matrix 3. They know the principle of solvent extraction and effect of various parameters on solvent extraction of a solute. 4. Student can familiar with the various types of electrodes or half cells. 5. Learner understands the use of statistical methods in chemical analysis, Computation of Confidence limits and confidence interval. 6. Can know the method to draw best fitting straight line 7. Test for rejection of doubtful result
	Practical's	1. Students can able to handle the analytical instruments such as conductometer, Potentiometer, Colorimeter, pH meter etc. 2. Can compare the strengths of two strong acids by studying kinetics of acid hydrolysis of methyl acetate. 3. Thorough knowledge regarding inorganic preparations. 4. They learn about qualitative Analysis of bi-functional organic compounds. 5. They familiar with the tools in analytical chemistry. 6. They can make acquainted about paper chromatography and solvent extraction techniques.
T. Y. B. Sc. (Sem-V)	Physical Chemistry P-I	1. Students became familiar with rotational and vibrational spectrum for diatomic molecules and concept of Raman Spectroscopy. 2. They can learn about colligative property, and their determination methods. They also understand the concept of

		collision theory, study of kinetics of fast reaction. 3. They can know the concept of radioactivity, detection and measurement of radioactivity using counters, applications of radioisotopes, nuclear reactions, construction and working of nuclear reactors. 4. Idea about surface chemistry and colloidal state.
	Practical's	1. Student can able to determine the molecular weight of compound by Rast method. 2. They can determine the order of reaction by fractional change method. 3. Learners can understand the adsorption of acetic acid on charcoal. 4. Students can able to handle the analytical instruments such as conductometer, Potentiometer, pH meter etc.
	Inorganic Chemistry P-II	1. Student can learn about molecular symmetry and chemical bonding. They also know the concept of point group. 2. Can understand crystal lattice, lattice point, unit cell and lattice constants. Further, understands defects in solids and concept of superconductors. 3. They can learn about various properties and applications of inner transition elements. 4. They can learn the classification and characteristics of non-aqueous solvents, comparative chemistry of Group-16 and 17.
	Practical's	1. Thorough knowledge regarding inorganic preparations. 2. They also able to determine the percentage purity of water soluble salts.
	Organic Chemistry P-III	1. Students can draw the mechanism of reaction, pericyclic reaction and photochemical reaction. 2. They know about stereochemistry of organic compounds, agrochemicals and heterocyclic chemistry. 3. They can write the IUPAC nomenclature of bicyclic and spiro compounds. Further, they can learn about green chemistry. 4. Student can familiarize with the general introduction of spectroscopy and natural product.
	Practical's	1. Student can acquire experimental skill in the separation of organic binary mixture containing two solid components. 2. Develop the practical skill in the determination of melting point.
	Analytical Chemistry P-IV	1. Students can understand the concept of quality control, quality assurance and sampling. 2. They can know the concept of Redox and Complexometric titrations. 3. Learners can familiarize with the instrumentation and application of analytical instruments such as AAS, Turbidimetry, Nephelometry etc.. 4. They understand the separation methods such as solvent extraction, HPLC and HPTLC.

	Practical's	1. Students can able to handle the analytical instruments such as spectrophotometer, flame photometer, turbidimeter etc. 2. They can determine the Chemical Oxygen Demands (COD) of water sample.
T. Y. B. Sc. (Sem-VI)	Physical Chemistry P-I	1. Student can understand the concept of electrochemical cells, classification of electrochemical cells, decomposition potential and overvoltage. 2. They can know the basic terms, classification, molar mass of polymer and its uses in light emitting polymers, antioxidants and stabilizers. 3. Student can understand the basic knowledge of quantum chemistry and renewable energy sources. 4. They learn the principles and instrumentations of NMR and ESR spectroscopy.
	Practical's	1. They acquired skill for handling instruments like potentiometer, conductometer and colorimeter. 2. Student can determine the molecular weight of polymer using viscometer. 3. Can interpret the order of reaction graphically from given experimental data.
	Inorganic Chemistry P-II	1. Student can understand the concept of Crystal Field Theory (CFT), Splitting of d-orbitals, calculation of CFSE and limitation of CFT. 2. They can learn the molecular orbital theory of co-ordination compounds, stability and reactivity of metal complexes. Introduction about electronic spectra. 3. Students can know the characteristics, synthetic methods, chemical reactions of organometallic compounds. Further, introduction of concept of metallocenes and catalysis. 4. They learn the types and general steps in metallurgy and chemistry of group 18. Also know the biological importance of metal ions (Na, K, Fe, Cu).
	Practical's	1. Thorough knowledge regarding inorganic preparations. 2. They also able to determine the percentage purity of water soluble salts.
	Organic Chemistry P-III	1. They can know the structure of amino acid and proteins. 2. Student can learn about mechanism of various rearrangement reactions. Further, they also get the knowledge about carbohydrates. 3. They can understand different types of spectroscopy and their applications to organic compounds. Moreover, they know the basic structure DNA/RNA. 4. They get familiarize the classification and preparation of polymers, applications of catalyst and reagents.
	Practical's	1. Student can acquire experimental skill in the separation of organic binary mixture containing two solid components. 2. Develop the practical skill in the determination of melting and boiling point.

	Analytical Chemistry P-IV	1. Student can understand the basic principles of Polarography, DC Polarogram, quantification, applications, advantages and limitations. Principle, advantages and limitations of amperometric titrations. 2. They can learn the chromatographic techniques such as Gas and Ion exchange chromatography. 3. Students acquire the knowledge about analysis of food products and detection of adulterants. Study of cosmetic products. 4. Students can know the instrumentation, application of TGA, DTA. Thermometric titrations and analytical method validation.
	Practical's	1. They acquired skill for handling instruments like Spectrophotometer, potentiometer and pH meter. 2. Analysis of commercial sample and Ion exchange separation. 3. They understand the principle of titrimetric analysis.
T. Y. B. Sc. (Sem-V)	Applied Component (Drugs and Dyes)	1. Student can learn general introduction about drugs, routes for drug administration and dosage form and CNS drugs. 2. They can know about the analgesic, antipyretics and anti-inflammatory drugs. 3. Student familiarize with the general knowledge of dye-stuff industry, different dying methods and classification of dyes. 4. Learner can understand the color and chemical constitution of dyes, unit processes and dyes intermediates.
	Practical's	1. Student can get thorough knowledge regarding the preparations and estimation of drug and dyes. 2. Student can get project knowledge of dyes.
T. Y. B. Sc. (Sem-VI)	Applied Component (Drugs and Dyes)	1. Student get familiarize with the drugs discovery, drug design and its developments. 2. They can known about chemotherapeutic agents such as Anti-amoebic, anti-tubercular, anti-neoplastic, anti-HIV and nano particles in medicinal chemistry. 3. Student can learn about classification of dyes and environmental hazardous of synthetic dyes. 4. They can understand the non-textile uses of dyes such as biomedical, food and cosmetics. Further, paper, leather, hair, laser and indicator dyes.
	Practical's	1. Student can get thorough knowledge regarding the preparations of drug and dyes. 2. Student can get knowledge of TLC of mixture of dyes. 3. Student can prepare the monograph of drugs.

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