RAMAIAH
College of Arts, Science & Commerce

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M S Ramaiah College of Arts, Science and Commerce
Re-accredited 'A' by NAAC. Permanently Affiliated to Bengaluru City University.
Approved by Government of Karnataka. Approved by AICTE, New Delhi.
Recognized by UGC under 2f & 12B of UGC act 1956
nirf (National Institutional Ranking Framework, Ministry of Education, Govt of India)
Ranked 62nd in NIRF India Ranking by MHRD, New Delhi
DBT Star College Scheme

Ref No. MSRCASC/CHEM-BIOCHEM/2022-23/ **Dated: 20/01/2023**

CIRCULAR

Department of Chemistry and Biochemistry

A value-added course on the topic **"Titrimetric Analysis: From Basics to Industrial Applications"** will be starting for B.Sc. Chemistry students from 3rd February to 19th April 2023. This course is designed to understand the important applications of titrimetry in the everyday life, making it an indispensable analytical tool and quality control test. Course duration is 30 hours. Interested students can enroll their name with Dr. Bharath K. Devendra / Mrs. Smrithi S.P. on or before 27/01/2023.

Course Facilitators

Dr. Bharath K. Devendra
Assistant Professor
Department of Chemistry/Biochemistry
MSRCASC

Mrs. Smrithi S. P.
Assistant Professor
Department of Chemistry/Biochemistry
MSRCASC

21.06.23

HEAD OF THE DEPARTMENT
Head of the Department
CHEMISTRY / BIO-CHEMISTRY
M.S. Ramaiah College of Arts,
Science & Commerce
Bangalore - 560 054

Vatsala 22/06/23.

PRINCIPAL
Principal,
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Resource Persons

Industry experts and renowned Scholars from Prestigious Institutions.

Coordinators

1. **Dr. Bharath K. Devendra**
   Assistant Professor,
   MSRCASC, Bengaluru.

2. **Mrs. Smrithi S.P.**
   Assistant Professor,
   MSRCASC, Bengaluru.

Resource Person

1. **Ms. Preethi Bhatt**

   Prime Minister Research Fellow,
   Indian Institute of Science, Bengaluru.

2. **Mr. Prnay Kumar Maitra**

   Prime Minister Research Fellow,
   Indian Institute of Science, Bengaluru.

About the programme

Department of Chemistry & Biochemistry takes initiative for myriad of co-academic activities to bring students growth in all the respects. In the similar lines, department has organized an add-on course entitled **"Titrimetric Analysis: From Basics to Industrial Applications"** for UG students of Chemistry. This course is designed to understand the important applications of titrimetry in the everyday life, making it an indispensable analytical tool and quality control test. This program is preferably for selected students interested in pursuing further career in the field of research and industry. Further to inculcate research interest, zeal, enthusiasm and contemporary knowledge in Chemistry research.

Our resource persons of this program are faculty of Department of Chemistry, MSRCASC, Industry experts and renowned Professors from Prestigious Institution with a sound experience in Chemistry research. Topic of the program selected is also based on the research experience of the faculty that they sought. The order of the sessions is made to maintain the flow of the main topic of the add-on course. Department is thankful to the management for giving an opportunity to organize such programs.

RAMAIAH College of Arts, Science & Commerce

nirf

Value-added Course On

"Titrimetric Analysis: From Basics to Industrial Applications"

Duration:
03rd Feb to 19th April - 2023

Venue:
Chemistry UG Class Room No. 504 and Chemistry Lab 514

Organized by:
Department of Chemistry and Biochemistry
M.S. Ramaiah College of Arts, Science and Commerce, Bengaluru - 560054

M.S. Ramaiah College of Arts, Science and Commerce

Dr. M S Ramaiah, a visionary and philanthropist established "Gokula Education Foundation (GEF)", in the year 1962, to deliver education and healthcare for the betterment of mankind. Under the tutelage of GEF, M.S Ramaiah college of Arts, Science and Commerce (MSRCASC) was established in 1994. MSRCASC is Re-accredited with "A" Grade by NAAC, permanently affiliated to Bengaluru City University (BCU), and approved by UGC and AICTE.

The college offers seven UG courses and four PG courses in Arts, Science, and Commerce, to around 2000 students. The Department of Life Sciences conducts 2 UG and 4 PG Programs in Microbiology, Chemistry, Biotechnology and Biochemistry to about 800 students. The dedicated academic faculties from our college have extensive teaching experience and have pursued doctoral and postdoctoral work in eminent institute's in India and abroad. Ramaiah College not only educates young students to excel academically, but also strives hard to ingrain social responsibilities in them.

Department of Chemistry and Biochemistry

The Department of Chemistry and Biochemistry was established in the year 1994 and currently conducts both UG and PG courses in Chemistry and Biochemistry. The syllabus is constantly supported by current day, real life applications carrying utility value. The department has very good infrastructural facilities to carry out teaching and research activities. Highly qualified faculties are assigned with theory and practical classes and are instructed to emphasize on the 'learning' of the students. The department undertakes research projects of national importance in the field of biological chemistry and has attracted funds from various agencies.

Through the sincere effort of our faculty we have obtained many University ranks, 90-100% results in both UG and PG courses consistently. Our students have been placed in various companies and many are pursuing their higher educations in India and abroad. We encourage students in doing research, present papers at National conferences, publish their findings in Journals of repute and also participate in co-curricular and extra-curricular activities.

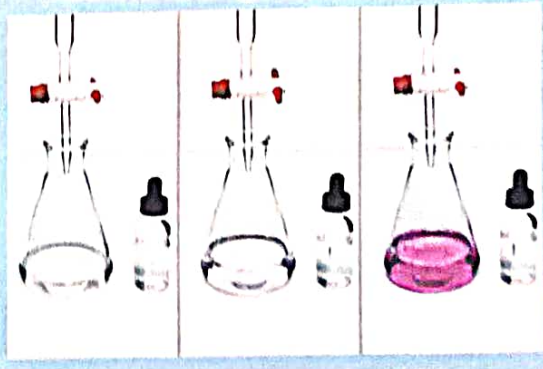
Organizing Committee Members

Dr. Vatsala G
Principal,
MSRCASC, Bengaluru.

Dr. Prasanna Kumar S. G.
Associate Professor,
HOD of Chemistry/Biochemistry
MSRCASC, Bengaluru

Dr. Bharath K. Devendra
Assistant Professor
MSRCASC, Bengaluru

Mrs. Smrithi S.P.
Assistant Professor
MSRCASC, Bengaluru



Title: Titrimetric Analysis: From Basics to Industrial Applications

Duration: 30 hours

Course Facilitators: Mrs. Smrithi. S. P and Dr. Bharath K. Devendra

Resource Persons: Ms. Preethi Bhatt, Mr. Pranay Kumar Maitra

(Prime Minister Research Fellows, IISc, Bengaluru)

Program Dates: 03.02.2023 to 19.04.2023 (February-April)

The Department of Chemistry and Biochemistry takes initiative for a myriad of co-academic activities to bring students growth in all respects. In similar vein, the department has organized an add-on course entitled **"Titrimetric Analysis: From Basics to Industrial Applications"** for UG students of Chemistry. This course is designed to help students understand the important applications of titrimetry in everyday life, making it an indispensable analytical tool and quality control test. This program is preferably for selected students interested in pursuing further careers in the fields of research and industry. Further to inculcate research interest, zeal, enthusiasm, and contemporary knowledge in chemistry research to understand the basics of the titration process used at the industrial level.

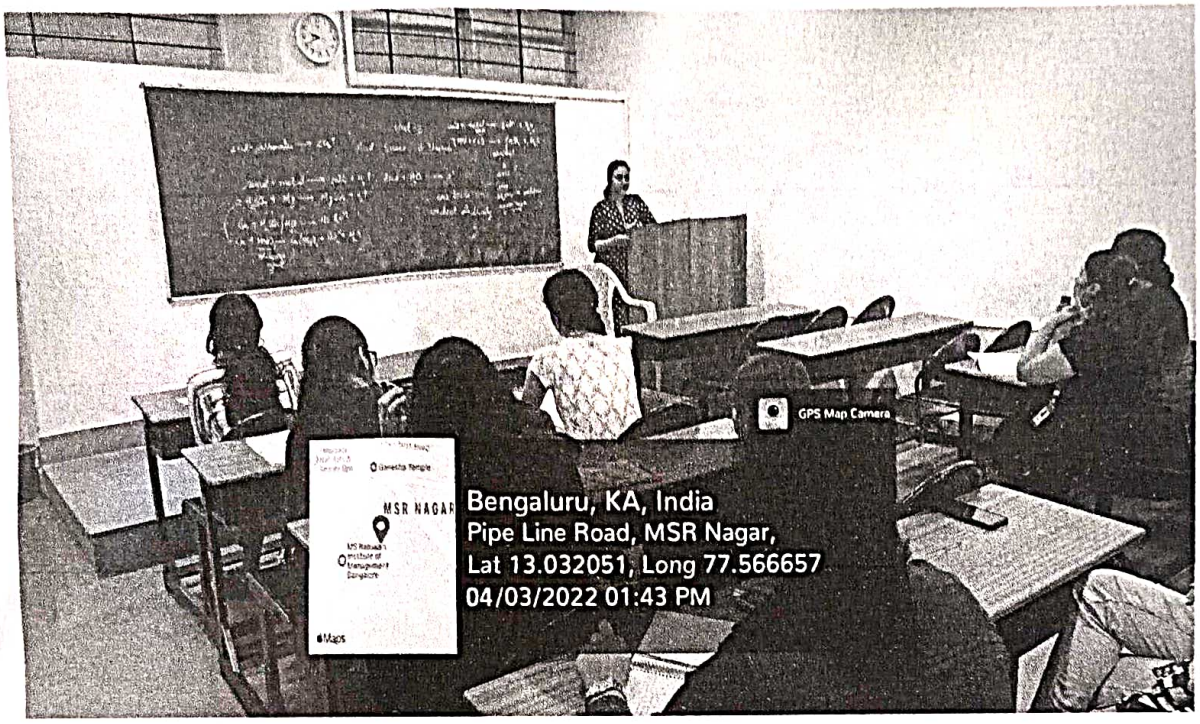
Mrs. Smrithi S.P., the course facilitator, gave an introductory lecture on basic laboratory practices types of titration, and applications. Dr. Bharath K. Devendra gave a lecture session on titrimetric analysis: an overview of the rules of work in analytical laboratories, the theory of neutralization, redox titration, complexation reactions, and applications of trimetric analysis in industry. The introductory sessions concluded with an engaging group discussion among the participants on the subjects covered.

The consequent sessions detailed the importance of types of titration. Ms. Preethi Bhatt gave a session detailing basic laboratory practices are essential for maintaining a safe and efficient working environment in a laboratory setting. Glassware calibration (pipettes, burettes, and volumetric flasks), work rules in an analytical laboratory, general volumetric quantitative determination principles, laboratory safety, measures to consider when dealing dangerous substances, concentrated acids and organic solvents.

Mr. Pranay's practical session

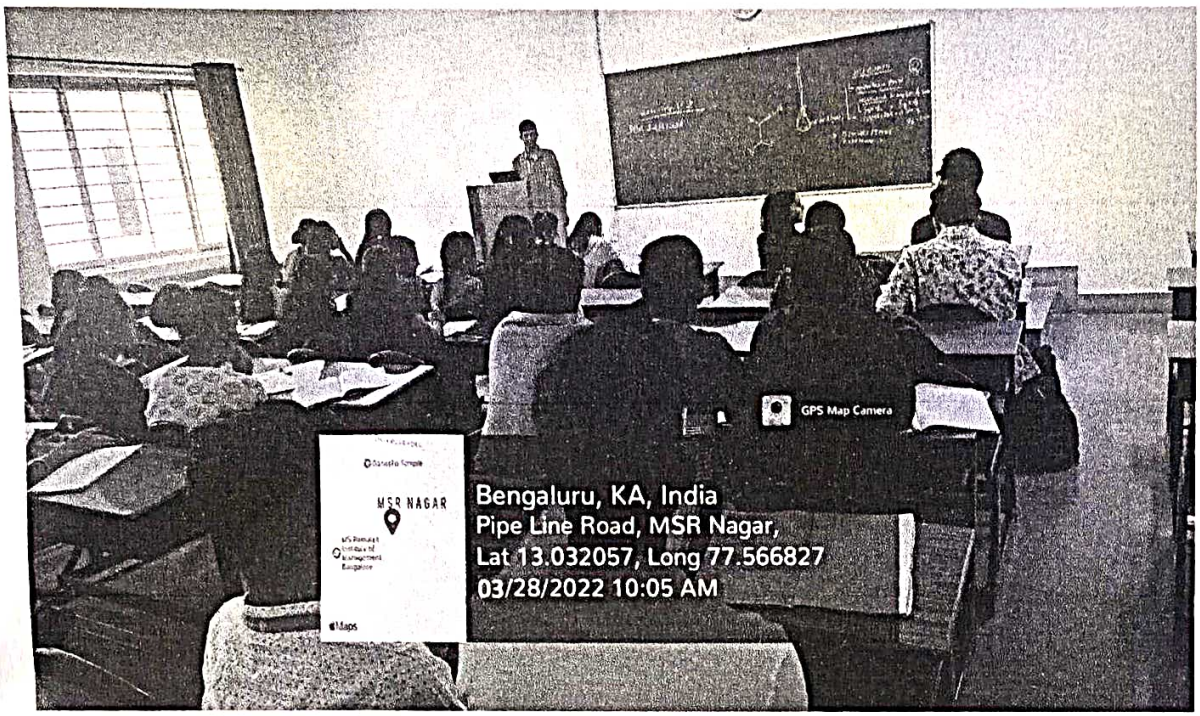
The second module of the value added program is mostly concerned with titration kinds. Titration methods used in analytical chemistry are of various varieties, each designed to investigate distinct types of chemical reactions and determine certain features of compounds. Acid base, back, complexometric, non-aqueous, and precipitation titration are some frequent forms of titration. These are some examples of frequent titration procedures used in analytical chemistry. Each type has its own set of principles, indications and methodologies. Mr. Preethi Bhatt, the resource person and distinguished Prime Minister Fellow (IISc), was in charge of the entire module.

The following module went over the specifics of titrimetric analysis's uses in industry. Mr. Pranay, the resource person and distinguished Prime Minister Fellow (IISc.), provided a detailed discussion on titrimetric analysis, which is widely used as an analytical technique in a variety of industries, including the pharmaceutical sector, including purity analysis of pharmaceutically active ingredients, content analysis, purity analysis, as well as the food industry, cosmetic industry, wine industry, biodiesel production industry, and so on, due to its versatility. Titration's accuracy, precision, and versatility make it a significant tool for quantitative chemical analysis in a variety of industries.



Ms. Preethi Bhatt session on types of titration

The program completed with laboratory experiments: Precipitation analysis using silver ion, Chloride determination using the Mohr technique, Chloride determination using the Volhard method, Volhard indication and end point, Fajans method chloride determination, Fajans indication and end point, Iodometric determination of copper and vitamin C determination using potassium iodate and complexometric titration of calcium by following this procedure and performing the necessary calculations, students were to determine the concentration of the required samples using the titration method. All of this was thoroughly discussed by the resource person and eminent Prime Minister Fellow (IISc), Mr. Pranay Kuma Maitra.



Mr. Pranay's session on applications of titrimetric analysis in industries.

The course began on March 3, 2023, and ended on April 19, 2023. At the conclusion of the program, participants gained an understanding of the present state of titrimetric analysis and its vast variety of applications in academia, research, and industry. Students from the first semester of the B.Sc. (Biochemistry, Genetics and Microbiology) course took part enthusiastically and learned from the program.

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Ranked 55th in NIRF India ranking by Ministry of Education, Government of India.
DBT Star College Scheme

Certificate of Participation

This Certificate is presented to

Megha Raj, U18EV22S0130

has participated in value added program on ***"Titrimetric Analysis: From Basics to Industrial Applications"*** organised from 19.02.2023 to 19.04.2023 at the Department of Chemistry/Biochemistry, M.S. Ramaiah College of Arts, Science and Commerce, Bengaluru.

Mrs. Smrithi S.P.	**Dr. Bharath K. Devendra**	**Dr. Vasantha Kumar Bhaskara**	**Dr. Vatsala G**
Co-ordinator	Co-ordinator	Head	Principal,
Department of Chemistry/Biochemistry	Department of Chemistry/Biochemistry	Department of Chemistry/Biochemistry	MSRCASC