



S.G.V.C Vidya Prasarak Trust's
**M.G.V.C Arts, Commerce and Science
College, Muddebihal**

(Re-Accredited with CGPA of 3.31 on Seven Point Scale at A+ Grade)

**Department of Chemistry
Conducted Certificate Course**

“Sugar Technology”

Academic Year- 2022-23



Brochure

From.

Prof. C S Katageri
Head of the Department of Chemistry,
M.G.V.C. Arts, Commerce and Science College,
Muddebihal.

To,
The Principal,
M.G.V.C.Arts, Commerce and Science College,
Muddebihal, Dist. Vijayapur

Subject:- Permission to start Certificate Course for the year 2022-23.

Respected Sir,

Certificate Course in Sugar Technology will provide theoretical and practical knowledge to students to develop their skills in the Sugar plant and Sugar manufacturing, and students gain a deeper understanding of the sugarcane use in sugar production.

We are interested in conducting a certificate course for our college B.Sc. final year Chemistry students to train them in Sugar Technology. For this course we would like to invite experienced staff and working official persons as resource persons from "Balaji Sugars and Chemicals private limited Yaragal". We will also invite subject experts from nearby colleges as members of board of studies for certificate course. We would like to title the certificate course as, Certificate course in "SUGAR TECHNOLOGY". Please discuss with the management and permit to start the above said course. This will help the students and we will take utter care in implementing the course more effectively so that it will help our students in future.

Thanking you.

Date: 10-8-2024


Head, Dept. of Chemistry,
M.G.V.C. Arts, Com. & Science College,
MUDEBIHAL - 586212.



S. G. V. C. Vidya Prasarak Trust's,

**Matoshri Gangamma Veerappa Chiniwar
Arts, Commerce & Science College,**

MUDDEBIHAL-586212. Dist. Vijayapur (Karnataka)

(Accredited with CGPA of 3.31 on seven point scale at 'A+' Grade)

☎ : 08356220329

FAX : 08356220329

• email : princmgvc@gmail.com • www.mgvcmbi.in •

Ref. No. :

Date : 2022-23

To,

Prof. C S Katageri
Head of the Department of Chemistry,
M.G.V.C. Arts, Commerce and Science College,
Muddebihal.

Subject:- Introduction of Certificate course in "SUGAR TECHNOLOGY"
for the year 2022-23

With reference to your letter regarding starting of certificate course in "SUGAR TECHNOLOGY" under the supervision of your department I am happy to say that the management is permitted to start Certificate course. Guest faculty will be paid remuneration as per rules and contingency expenditures will be borne by the management.

PRINCIPAL,

M. G. V. C. Arts, Com. & Science College
MUDDEBIHAL - 586212.



S. G. V. C. Vidya Prasarak Trust's,

**Matoshri Gangamma Veerappa Chiniwar
Arts, Commerce & Science College,**

MUDDEBIHAL-586212. Dist. Vijayapur (Karnataka)

(Accredited with CGPA of 3.31 on seven point scale at 'A+' Grade)

☎ : 08356220329

FAX : 08356220329

• email : princmgvc@gmail.com • www.mgvcmbi.in •

Ref. No. :

Date : 2022-23.

Notice

Date: 10-2-2023.

Department of Chemistry going to start Certificate a Course in "SUGAR TECHNOLOGY" for B.Sc final Chemistry (optional) students during the year 2022-23. The course syllabi is based on Sugar manufacturing process and use of sugar cane in sugar industry. The students hereby informed to make use of this Golden Opportunity which will help you after your graduation. The interested students may contact Prof C S Katageri Head of the department of Chemistry, Prof A S Bagawan course Coordinator for admission and other information.

PRINCIPAL,

M. G. V. C. Arts, Com. & Science College
MUDDEBIHAL - 586212.

SGVCVPT'S

M.G.V.C ART'S COMMERCE AND SCIENCE COLLEGE, MUDDEBIHAL-586212
DEPARTMENT OF CHEMISTRY

PANEL OF BOARD OF STUDIES

CERTIFICATE COURSE IN SUGAR TECHNOLOGY 2022-23.

SLNo.	Name of the faculty	Designation	Address/Office
1	Prin. S.N.Poleshi	Principal	MGVC College, Muddebihal
2.	Prof. C S Katageri	Member	Associate Professor & Head Department of Chemistry M.G.V.C.College, Muddebihal
3.	Prof. A S Bagawan	Course Co-ordinator	Associate Professor in Chemistry M.G.V.C.College, Muddebihal
4.	Shri B. G. Kenganal,	Resource person	Deputy Manager, Shri Balaji Sugars and Chemicals Pvt. Ltd. Yaragal.
5.	Prof. U A Halyal	Member	Assistant Professor in Chemistry, M.G.V.C. College, Muddebihal
6	Prof. S S Sulibhavi	Member	Assistant Professor in Chemistry, M.G.V.C. College, Muddebihal


Course Co-ordinator


PRINCIPAL,
M. G. V. C. Arts, Com. & Science College
MUDDEBIHAL - 586212.



S. G. V. C. Vidya Prasarak Trust's,

**Matoshri Gangamma Veerappa Chiniwar
Arts, Commerce & Science College,**

MUDEBIHAL-586212. Dist. Vijayapur (Karnataka)

(Accredited with CGPA of 3.31 on seven point scale at 'A+' Grade)

☎ : 08356220329

FAX : 08356220329

• email : princmgvc@gmail.com • www.mgvcmbl.in •

Ref. No. :

Date : 2022-23

To,
Prof. C S Katageri
Associate Professor & HOD of Chemistry
M.G.V.C.College, Muddebihal

**Subject :- Appointment letter as Member of Board of Studies in Certificate
Course "SUGAR TECHNOLOGY"**

Respected sir,

As per the direction of our Management Chairman I am very happy to inform you that, you have been appointed as a Member of board of studies for Certificate Course in "Sugar Technology" during year 2022-23. Please contact the undersigned to chalk out complete programme of the certificate course.

Thanking you,

Principal

M. G. V. C. Arts, Com. & Science College
MUDEBIHAL - 586212.



S. G. V. C. Vidya Prasarak Trust's,

**Matoshri Gangamma Veerappa Chiniwar
Arts, Commerce & Science College,**

MUDDEBIHAL-586212. Dist. Vijayapur (Karnataka)

(Accredited with CGPA of 3.31 on seven point scale at 'A+' Grade)

☎ : 08356220329

FAX : 08356220329

• email : princmgvc@gmail.com • www.mgvcmbi.in •

Ref. No. :

Date : 2022-23

To,
Prof. A S Bagawan
Associate Professor Department of Chemistry
M.G.V.C.College, Muddebihal

**Subject :- Appointment letter as Course Coordinator of Certificate Course in
"SUGAR TECHNOLOGY"**

Respected sir,

As per the direction of our Management Chairman I am very happy to inform you that, you have been appointed as a **Course Coordinator of Certificate Course in "SUGAR TECHNOLOGY"** during 2022-23. Please contact C S Katageri Associate Professor and Head of the Department of Chemistry, to chalk out complete programme of the certificate course.

Thanking you,

PRINCIPAL,

M. G. V. C. Arts, Com. & Science College
MUDDEBIHAL - 586212,



S. G. V. C. Vidya Prasarak Trust's,

**Matoshri Gangamma Veerappa Chiniwar
Arts, Commerce & Science College,**

MUDDEBIHAL-586212. Dist. Vijayapur (Karnataka)

(Accredited with CGPA of 3.31 on seven point scale at 'A+' Grade)

☎ : 08356220329

FAX : 08356220329

• email : princmgvc@gmail.com • www.mgvcmbi.in •

Ref. No. :

Date : 2022-23

To,
Prof. Shri B. G. Kenganal,
Deputy Manager
Balaji Sugars and Chemicals Prvt. Ltd. Yaragal

**Subject :- Appointment letter as Resource Person for a Certificate Course in
"SUGAR TECHNOLOGY" organized in our college by the Chemistry Department**

Respected sir,

As per the direction of our Management Chairman I am very happy to inform you that, you have been appointed as a Member of Board of Studies in Certificate Course in "SUGAR TECHNOLOGY" during 2022-23. Please You also serve as a resource person and help our students in visit to your sugar factory. Prof. C S Katageri Head Department of Chemistry & Prof A. S. Bagawan course Coordinator will contact you in scheduling the complete programme of the certificate course.

Thanking you,

PRINCIPAL,

M. G. V. C. Arts, Com. & Science College
MUDDEBIHAL - 586212,



S. G. V. C. Vidya Prasarak Trust's,

**Matoshri Gangamma Veerappa Chiniwar
Arts, Commerce & Science College,**

MUDEBIHAL-586212. Dist. Vijayapur (Karnataka)

(Accredited with CGPA of 3.31 on seven point scale at 'A+' Grade)

☎ : 08356220329

FAX : 08356220329

• email : princmgvc@gmail.com • www.mgvcmbi.in •

Ref. No. :

Date : 2022-23

To,
Prof. U. A. Halyal
Assistant Professor Department of Chemistry
M.G.V.C.College, Muddebihal

Subject :- Appointment letter as subject expert of Certificate Course "Sugar Technology"

Respected sir,

As per the direction of our Management Chairman I am very happy to inform you that, you have been appointed as a Member of Board of Studies and subject expert of Certificate Course in "SUGAR TECHNOLOGY" during the year 2022-23. Please contact C S Katageri Head Department of Chemistry & Prof A. S. Bagawan course Coordinator and chalk out complete programme of the certificate course.

Thanking you,

PRINCIPAL,

M. G. V. C. Arts, Com. & Science College
MUDEBIHAL - 586212.



S. G. V. C. Vidya Prasarak Trust's,

**Matoshri Gangamma Veerappa Chiniwar
Arts, Commerce & Science College,**

MUDDEBIHAL-586212. Dist. Vijayapur (Karnataka)

(Accredited with CGPA of 3.31 on seven point scale at 'A+' Grade)

☎ : 08356220329

FAX : 08356220329

• email : princmgvc@gmail.com • www.mgvcmbl.in •

Ref. No. :

Date : 2022-23

To,
Prof. S. S. Sulibhavi.
Assistant Professor Department of Chemistry
M.G.V.C.College, Muddebihal

Subject :- Appointment letter as subject expert of Certificate Course "Sugar Technology"

Respected sir,

As per the direction of our Management Chairman I am very happy to inform you that, you have been appointed as a Member of Board of Studies and subject expert of Certificate Course in "SUGAR TECHNOLOGY" during the year 2022-23. Please contact C S Katageri Head Department of Chemistry & Prof A. S. Bagawan course Coordinator and chalk out complete programme of the certificate course.

Thanking you,

PRINCIPAL,

M. G. V. C. Arts, Com. & Science College
MUDDEBIHAL - 586212

M.G.V.C ART'S COMMERCE AND SCIENCE COLLEGE, MUDDEBIHAL-586212
DEPARTMENT OF CHEMISTRY

CERTIFICATE COURSE IN "SUGAR TECHNOLOGY"

Time Table -2022-23

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
4 to 5 P.M.	4 to 5 P.M.	4 to 5 P.M.	4 to 5 P.M.	4 to 5 P.M.	4 to 5 P.M.


Coordinator

15-8-2023


Head, Dept. of Chemistry,
M.G.V.C. Arts, Com. & Science College
MUDDEBIHAL - 586212.

M.G.V.C ART'S COMMERCE AND SCIENCE COLLEGE, MUDDEBIHAL-586212
DEPARTMENT OF CHEMISTRY

About the Sugar Technology Course:

The Industry Certificate in Sugar Technology will provide theoretical and practical knowledge to students to develop their skills in the Sugar plant and Sugar manufacturing, their chemical control, methods of control, differential and inferential methods. They will gain a deeper understanding of the sugarcane in the application of its technology in sugar production. With developed skills in product and process development for the sugar and alcohol production in food industry, students /professionals will be able to work in industry and research Institutes.

In order to enhance the knowledge in the area of Sugar Technology, FFSQ, IGMPI has designed this programme. This is undertaken through theoretical knowledge and practical skill as both are essential to master the field of sugarcane industry.

The objective of this programme is to give knowledge about Mill house control, chemistry involved in sugar processing, purity control check, true purity, brix % calculations etc. that can benefit Sugar industry. On completion of this programme student will be able to explain the advanced processing of sugars at large scale.

Programme Structure

Module 1: Introduction to Sugar Technology

Module 2: Sugar Chemistry

Module 3: Processing of Sugar

Module 4: Types of Sugars

Module 5: Clarification Process in Sugar Manufacturing

Module 6: Crystallization Process

Module 7: Sugar Quality Assurance and Quality Control

Module 8: By-products Utilization

Module 9: Industry based Case Studies

Eligibility: B.Sc. Final year Students

Programme Duration

The duration of the training is 30 days.

Registration

The registration dates for this programme



Course Information

Course Code: MGVC/CHEM/001/2022-23

Instruction Method: Theory Classes, Visit to Balaji Sugars & Chemicals private Limited Yaragal Taluk: Muddebihal

Fee: Free

Course Duration: 5 Weeks (30 days)

Instructor(s)

1. Prof C S Katageri
2. Prof A S Bagawan
3. Prof U A Halyal
4. Prof S S Sulibhavi

**Resource Persons S. B. Kenganal. Balaji Sugars and Chemicals prvt. Ltd.
Yaragal Taluk: Muddebihal**

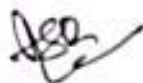
Learner Outcomes

Upon successful completion of the course,

1. They will gain a deeper understanding of the sugarcane in the application of its technology in sugar production. With developed skills in product and process development for the sugar and alcohol production in food industry, students /professionals will be able to work in industry and research Institutes.
2. **What is Sugar Technology:** Sugar Technology is a course that is offered by a lot of institutes in our country. The students can do undergraduate degrees, postgraduate degrees, and also research in Sugar Technology. This subject covers theoretical and practical knowledge about techniques regarding sugar manufacturing it is processing, storing, working with the by-products of sugarcane to produce fuel, and so on.

Course Objectives

1. The main objective of Sugar Technology is to teach students in a scientific way to help them learn about the subject and make them ready for their respective career fields. There are also areas to learn about the wastage of sugar, and by-products as well as reducing losses of fuel made from ethanol to reduce the production cost and increase the overall efficiency of the firm.



M.G.V.C ART'S COMMERCE AND SCIENCE COLLEGE, MUDDEBIHAL-586212
DEPARTMENT OF CHEMISTRY

Syllabus for certificate course "Sugar Technology"

Unit 1(8 Hrs)

- 1) Introduction to sugar
- 2) Chemistry of sugar, Constituents of sugar, Natural polymers of sugars, Flammability of sugar.
- 3) Types of sugar, Monosaccharides – Glucose, Fructose, Disaccharides - Sucrose, maltose, Lactose
- 4) Sources of sugar, Sugar beet, sugarcane
- 5) Refining of sugars
- 6) Sugar production countries
- 7) Forms of sugar and its use Consumption Health effects of sugar- Blood glucose level - Obesity and Diabetes - Cardiovascular disease- Alzheimer's disease - Tooth decays - Addiction forming - Hyper activity- Measurement

Unit 2 – Carbohydrate..... [7 Hrs]

- Introduction and Classification of Carbohydrates with suitable examples.
- Reactions of Monosaccharide such as a) Mutarotation b) Alkaline degradation c) Rearrangements d) Acidic degradation e) Polymetrisation f) Caramelisation

Unit 3 – Di & Polysaccharides [08 Hrs]

- Structures and properties of sucrose, Maltose, Lactose, Starch & Cellulose (chain structures)

Unit 4 – Physical & Chemical properties of sugar.....(7 Hrs)

- Chemical properties of sucrose :- sucrose molecule, crystalline sucrose, amorphous sucrose, aqueous sucrose.
- Solution (solubility, density, viscosity, surface tension, boiling point, freezing point, rotation of polarized light)
- Physical properties of sucrose :- Structure of the sucrose molecule, sucrose derivatives, decomposition of sucrose

- Physical properties of reducing sugar :- Physical properties of dextrose solution (solubility, density, refractive index, optical rotation) Physical properties of invert sugar (solubility, refractive index, optical rotation)
- Chemical properties of dextrose & laevulose with organic reagent:- Acetone, benzoic, carbonate, acetate.
- Chemical properties of dextrose & laevulose with inorganic reagent:- Phosphate sodium, chloride salt, calciumlevulate.
- Decomposition reaction with alkaline solution & acid solution, oscillation reaction with iodine

Reference Books :

Organic & Sugar Chemistry

- 1 Organic Chemistry : Hendrickson, cram, Hammond
- 2 Organic Chemistry : Morrison & Boyd
- 3 Organic Chemistry : Volume I & II I.L.Finar
- 4 Organic Chemistry : Pine
- 5 Advanced Organic Chemistry : Sachin kumar Ghosh
- 6 Advanced Organic Chemistry : B.S.Bahl & Arun Bahi
- 7 A guide book to Mechanism in organic chemistry : Peter Sykes
- 8 Stereochemistry of organic compounds : Kalsi
- 9 Stereochemistry of Carbon compounds : Eliel
- 10 Text book of organic chemistry : P.L.Soni
- 11 Text book of practical organic chemistry : A.I.Vogel
- 12 Advanced organic chemistry : Reactions, Mechanism & Structure Jerry march
- 13 Organic Chemistry : M.R.Jain
- 14 Organic Chemistry : J.M.Shaigel

SGVCVPT'S .
M.G.V.C. ART'S COMMERCE AND SCIENCE COLLEGE, MUDDEBIHAL-
586212

DEPARTMENT OF CHEMISTRY
CERTIFICATE COURSE PROGRAMME
(MoU Activity 2022-23)
ON
"SUGAR TECHNOLOGY"



Prayer by Miss Poornima Chittargi



Prof C S Katageri Head Department of Chemistry Welcoming and introducing Guests & invities.

(Signature)
Principal

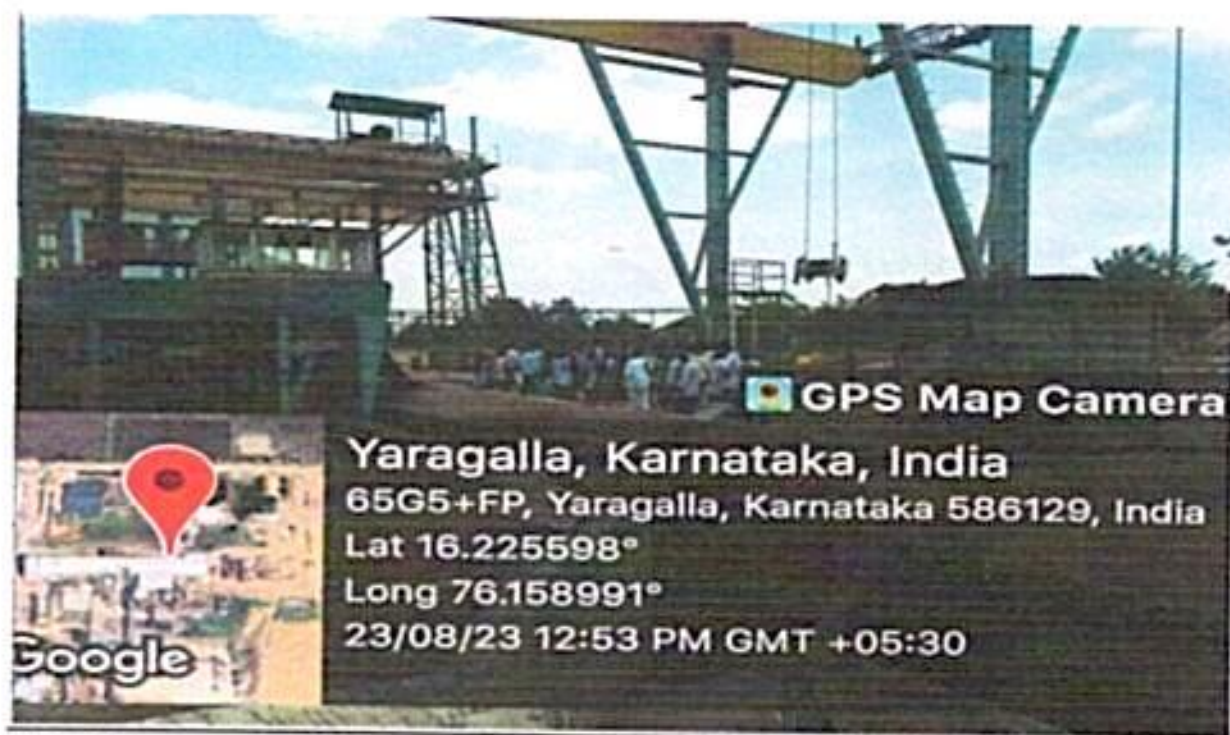
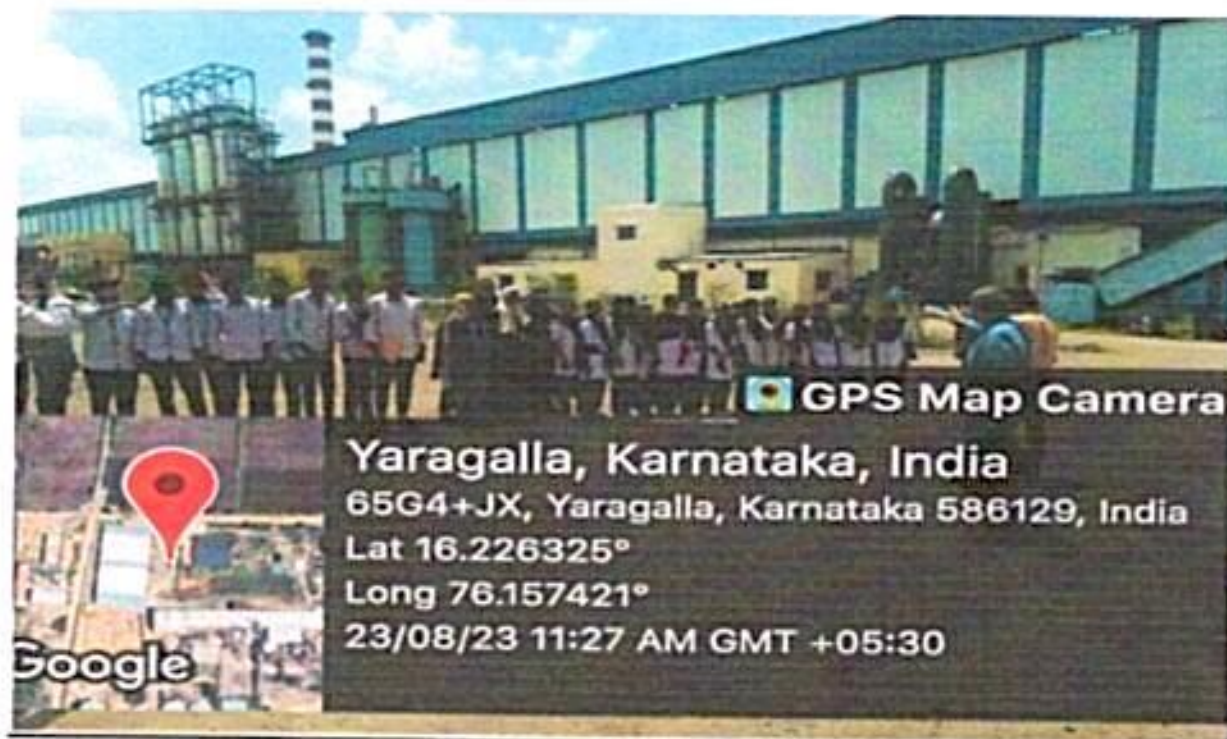


Shri B. G. Kenganal, Deputy Manager explaining about the manufacture of sugar.

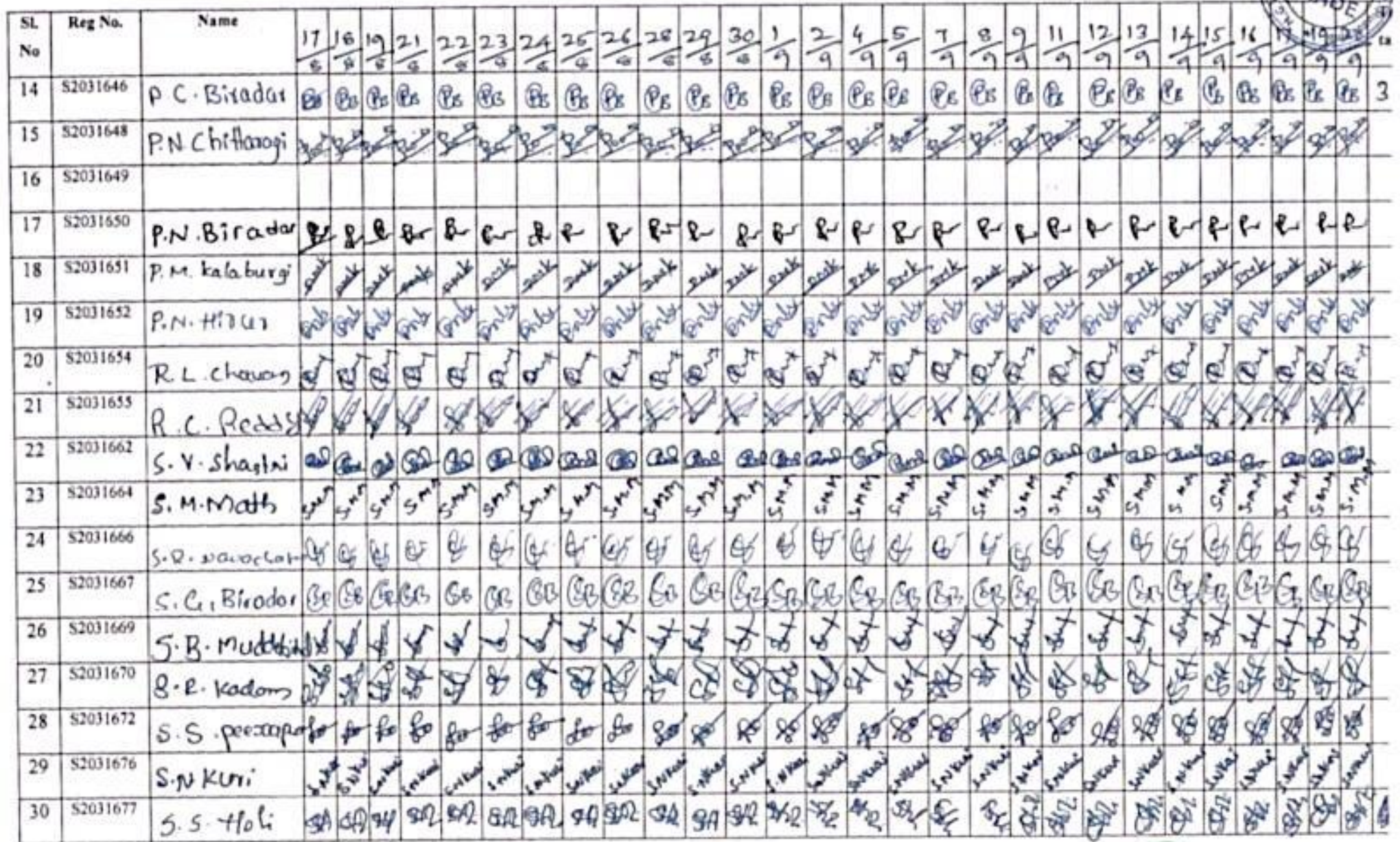


Students, at the MoU Certificate programme.

VISIT TO BALAJI SUGARS AND CHEMICALS DURING THE CERTIFICATE COURSE.



B.Sc. VI Semester Chemistry (optional) students at Balaji Sugar factory during sugar technology certificate course 2022-23



PRINCIPAL,
M.G.V.C. Arts, Commerce & Science College
- 586212, Dist: Vijayapur.

M.G.V.C ART'S COMMERCE AND SCIENCE COLLEGE, MUDDEBIHAL-586212
DEPARTMENT OF CHEMISTRY



CERTIFICATE COURSE IN "SUGAR TECHNOLOGY"

Attendance Register - 2022/23

17-8-2023 to
20-9-2023.

Sl. No	Reg No.	Name	17/8	18/8	19/8	21/8	22/8	23/8	24/8	25/8	26/8	28/8	29/8	30/8	1/9	2/9	4/9	5/9	7/9	8/9	9/9	11/9	12/9	13/9	14/9	15/9	16/9	17/9	19/9	20/9	T
1	S2031617	Bibithajana	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	3
2	S2031620	Kneabasappa Angadi	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
3	S2031621	Kartik	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
4	S2031622	Kantle Kanchan	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
5	S2031625	Kousarbanu Makathi	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
6	S2031626	Kusuma Meti	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
7	S2031630	Masavargun S. B. B. B. B.	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
8	S2031631	Minaj. B. Kulagosi	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
9	S2031632	Md. Muzaamil S. G. G.	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
10	S2031636	Nagaratna	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
11	S2031637	Nalida. M. S. H. C. I.	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
12	S2031638	Naseema. A. R. S. G. W. A.	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
13	S2031645	Pawitra. B. Bogal	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	

ASP
(co-ordinator)

[Signature]

PRINCIPAL,

M.G.V.C. Arts, Commerce & Science College,
MUDDEBIHAL-586212. Dist: Vijayapur.



S. G. V. C. Vidya Prasarak Trust's,

**Matoshri Gangamma Veerappa Chiniwar
Arts, Commerce & Science College,**

MUDDABIHAL-586212. Dist. Vijayapur (Karnataka)

(Accredited with CGPA of 3.31 on seven point scale at 'A+' Grade)

☎ : 08356220329

FAX : 08356220329

✱ email : princmgvc@gmail.com ✱ www.mgvcmb.in ✱

Ref. No. :

Date :

REPORT OF THE CERTIFICATE COURSE

(Department MoU Activity – 2022-23)

The Chemistry Department recently organized a certificate course program on sugar technology for B.Sc. VI Semester Chemistry (Optional) students. This program, which took place from August 17, 2023, to September 20, 2023, aimed to provide students with knowledge about the current trends and challenges in sugar technology within our country. Additionally, it offered valuable insights into the internal workings of the sugar industry. The course was conducted under the guidance of Professor C. S. Katageri, the Head of the Department of Chemistry. Professor A. S. Bagawan served as the coordinator, while Shri B. G. Kenganal, the deputy manager of Balaji Sugars and Chemicals, Yaragal, was also present as a resource person, and Shri U. A. Halyal and Shri S. S. Sulibhavi served as subject experts. A total of 30 students from B.Sc. VI Semester registered for the Sugar Technology Certificate course and greatly benefited from it. As part of the course, all participants, along with Professor C. S. Katageri, Professor A. S. Bagawan, and Shri U. A. Halyal, visited Balaji Sugars and Chemicals, Yaragal. During this visit, Shri Alphan Raj, the General Manager of Balaji Sugars and Chemicals, provided a comprehensive tour of the factory, showcasing the various processes involved in sugar manufacturing. The certificate course concluded on September 20, 2023.

PRINCIPAL,

M. G. V. C. Arts, Com. & Science College
MUDDABIHAL - 586212,



S.G.V.C. Vidya Prasarak Trust's

M.G.V.C. ARTS, COMMERCE AND SCIENCE COLLEGE,
MUDDEBIHAL – 586212



Dist: Vijayapur Karnataka State

Department of Chemistry

Certificate Course in **“Sugar Technology”**

Certificate

This is to certify that Mr/Ms _____ of _____

has participated in CERTIFICATE COURSE IN *“Sugar Technology”* organized by the Department of Chemistry, from 17-08-2023 to 20-09-2023.

Prof. S.N. Poleshi
Principal
M.G.V.C. Arts, Commerce &
Science College, Muddebihal

Prof. C.S. Katageri
HOD Dept of Chemistry
M.G.V.C. Arts, Commerce &
Science College, Muddebihal

Prof. A.S. Bagawan
Course Co-ordinator
M.G.V.C. Arts, Commerce &
Science College, Muddebihal

SGVCVPT'S

M.G.V.C ART'S COMMERCE AND SCIENCE COLLEGE, MUDDEBIHAL-586212
DEPARTMENT OF CHEMISTRY

CERTIFICATE COURSE IN "SUGAR TECHNOLOGY"
REGISTRATION FORM

Name of the Student : _____

Father's Name : _____

Mobile Number : _____

E – Mail ID : _____

Date of Birth : _____

Course Studying : _____

Contact Address : _____

: _____

: _____

Place : Muddebihal

Date :

Signature of the Student