

From

Head
Department of Chemistry
MES Keveeyam College, Valanchery

To

The Principal
MES Keveeyam College, Valanchery

Sir,

Sub: Request for conducting Certificate Course Reg.

The Department of Chemistry would like to conduct a certificate course on "**Analytical Aspects of Chemistry for Industries**" of 30 hours duration. The course is aimed for both undergraduate and post graduate students. I also suggest following teachers from the Department as Board of Studies members.

1. Dr. Jisha V. S., Assistant Professor
2. Dr. C. Soumini, Assistant Professor
3. Dr. T. K. Saifuneesa, Assistant Professor
4. Smt. Jaseela M. A., Assistant Professor
5. Mr. Sreejith M. P., Assistant Professor in Chemistry, Grace Valley College of Arts and Science, Maravattom

I kindly request you to grant permission for the same.

Thanking you

Yours faithfully,

K. M. Rukkiya



Place: Valanchery

Date: 05/12/2022





MES KEVEEYAM COLLEGE VALANCHERY

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Proceedings of the Principal, MES Keveeyam College, Valanchery

Order No. ACS/2022-2023/03 Dated 08/12/2022

Sub: Certificate Course – Reg.

Ref : (1) Request from the Head of the Department of Chemistry dt. 05/12/2023

ORDER

As per the reference cited (1), a request was received from the Head of the Department of Chemistry to start a certificate course on **Analytical Aspects of Chemistry for Industries** KVM/CC/CHE/22-23/02. In the same letter, the head has recommended a panel of academicians to be included in the Board of Studies.

The Board of Studies for the above course is constituted of the following members

1. Dr. C. Soumini, Assistant Professor MES Keveeyam College Valanchery.
2. Dr. Jisha V. S., Assistant Professor MES Keveeyam College Valanchery
3. Dr. T. K. Saifunessa, Assistant Professor, MES Keveeyam College, Valanchery
4. Smt. Jaseela M. A. Assistant Professor, MES Keveeyam College Valanchery
5. Mr. Sreejith M. P., Assistant Professor in Chemistry, Grace Valley College of Arts and Science, Maravattom

Sanction is hereby accorded to the Department of Chemistry for conducting the above-referred certificate course.

Order is issued accordingly.

Principal

Copy to:

1. HoD, Department of Chemistry
2. File


SHAJID P P
ASSISTANT PROFESSOR
IN CHARGE OF PRINCIPAL
M.E.S KEVEEYAM COLLEGE
VALANCHERY, PIN 676 552

MES KEVEEYAM COLLEGE VALANCHERY

DEPARTMENT OF CHEMISTRY

Analytical Aspects of Chemistry for Industries KVM/CC/CHE/22-23/02

SYLLABUS

(2022- 2023)

Module 1: Introduction to Analytical Chemistry (3 Hours)

Definition and scope of analytical chemistry, Role of analytical chemistry in industries, Basics of qualitative and quantitative analysis

Module 2: Sampling and Sample Preparation (4 Hours)

Importance of representative sampling, Techniques for solid, liquid, and gas samples, Sample preparation methods: extraction, digestion, and dilution

Module 3: Classical Analytical Techniques (5 Hours)

Gravimetric analysis, Volumetric analysis: titrations (acid-base, redox, complexometric), Limitations and applications in industries

Module 4: Instrumental Analytical Techniques (10 Hours)

Spectroscopic Methods: UV-Vis Spectroscopy, Infrared (IR) Spectroscopy, Atomic Absorption Spectroscopy (AAS), Nuclear Magnetic Resonance (NMR) Spectroscopy. Chromatographic Methods:

Gas Chromatography (GC), High-Performance Liquid Chromatography (HPLC), Mass Spectrometry (MS), Principles, instrumentation, and industrial applications

Module 5: Electroanalytical Methods (4 Hours)

Potentiometry and pH measurement, Conductometry, Voltammetry and polarography, Applications in industries

Module 6: Quality Control and Regulatory Aspects (4 Hours)

Importance of quality control in industries, Good Laboratory Practices (GLP), Regulatory frameworks and standards (e.g., ISO, FDA), Case studies on regulatory compliance and quality assurance

MES KEVEEYAM COLLEGE VALANCHERY

DEPARTMENT OF CHEMISTRY

CERTIFICATE COURSE

Analytical Aspects of Chemistry for Industries KVM/CC/CHE/22-23/02

Credit 3

30 hrs.

Objectives

- To provide an idea of principles of analytical chemistry and various techniques used in industrial applications.
- To give an understanding on the selection and application of appropriate analytical methods for quality control and problem-solving in industries.
- To familiarize students with modern analytical instruments and their industrial applications.
- To promote critical thinking and data interpretation skills in an industrial context.
- To develop skills in the students by giving practical sessions

Outcomes

- Explain the fundamental principles of various analytical techniques used in industries.
- Able to select and apply appropriate analytical methods for specific industrial applications.
- Interpret analytical data and make informed decisions regarding quality control and regulatory compliance.

Course Contents

- Theory: 25 Hrs.
- Practical: 5 Hrs.

Scheme of evaluation

- Written Examination (Conventional): 30 marks
- Practical : 10 marks
- Total : 40 marks

A Grade: 80% and above, B Grade: 60 – 79%, C Grade: 40 – 59%, below 40% D Grade






Minutes of Board of Studies Meeting

Date: 12/12/2022

Time: 2.00 PM

Venue: Department of Chemistry

Attendees

1. Dr. C. Soumini, Assistant Professor Dept. of Chemistry, MES Keveeyam College Valanchery 
2. Dr. Jisha V. S., Assistant Professor, Dept. of Chemistry, MES Keveeyam College Valanchery 
3. Dr. T. K. Saifuneesa, Assistant Professor, Dept. of Chemistry, MES Keveeyam College Valanchery 
4. Smt Jaseela M. A. Assistant Professor, Dept. of Chemistry, MES Keveeyam College Valanchery 
5. Mr. Sreejith M. P., Assistant Professor in Chemistry, Grace Valley College of Arts and Science, Maravattom 

Agenda

1. Introducing the importance of the current Certificate Course and its need— Prof. K. M. Rukiya discussed about the need and importance of current certificate course.
2. Syllabus discussion – Had a discussion on the syllabus for the required course. and timings of the course. A time table for the same was decided to be formulated.
3. Discussion on the outcome of the course.

Decisions

1. Decide detailed syllabus and timings of the course
2. A time table for the same was decided to be formulated.
3. Ensured on giving practical sessions.

Action Item

1. Dr. Jisha V. S. and Dr. C. Soumini for syllabus structuring.
2. Time table for the course by Dr. T. K. Saifuneesa
3. Assessment to be handled by Smt. Jaseela M. A.
4. Certificate arrangements by Dr. T. K. Saifuneesa

Minutes Recorded by: Prof. K. M. Rukiya

These minutes will be circulated to all committee members for their reference & review





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Research and PG Department of Chemistry



Certificate course on

**Analytical aspects of
chemistry for industries**



30 HOURS

**Starts from 04.01.2023
onwards**

Question Paper

Analytical Aspects of Chemistry for Industries KVM/CC/CHE/22-23/02

Time 2 hrs

Marks 30

Answer any six. Each question carries five marks.

1. Define analytical chemistry and explain its scope.
2. What is gravimetric analysis? Describe its procedure and applications.
3. What are the different methods of sample preparation? Explain extraction, digestion, and dilution methods.
4. Highlight the limitations of classical analytical techniques.
5. Explain potentiometry and its use in pH measurement.
6. Describe the techniques used for sampling solid, liquid, and gas samples.
7. Explain the principle and instrumentation of UV-Vis Spectroscopy.
8. Discuss the working and applications of Gas Chromatography (GC) and High-Performance Liquid Chromatography (HPLC)

for HoD

Dr. Soumini



List of Students who passed the course

Sl No.	Name	Percentage/Marks
1.	FAHMIDHA SHERIN K	37
2.	FATHIMA SANA K	38
3.	LUBNA	36
4.	ALFIYA ASHARAF	36
5.	APARNA N SASIDHARAN	37
6.	ASHLY CHANDRAN P P	38
7.	AYISHATH MUBASHIRA	33
8.	FARSHIDA K P	35
9.	HASNA N	35
10.	LAZIMA FILDA M P	34
11.	MEGHA M K	36
12.	NABEELA C	37
13.	NASEEHA N S	38
14.	NISANA E	39
15.	NANDANA MOHAN	33
16.	RAHEEMA SHERIN M	37
17.	RJIL SHA K	33
18.	SHERIN SHAHANA E	36
19.	SREE DURGA E	35
20.	SUMI SHAHAREES K	34
21.	AJITH V	33
22.	ARSHADH T	32
23.	AMEERA K	38
24.	ATHILA	36



Signature

MES KEVEEYAM COLLEGE VALANCHERY

Department of Chemistry

Unique ID of the Certificate Course : Analytical Aspects of Chemistry for Industries

Sl No	Name of the Student	Class	Date
1.	FAHMIDHA SHERIN K	3 rd BSc	8/10/23 9/10/23 10/10/23 11/10/23 12/10/23 13/10/23 14/10/23 15/10/23 16/10/23 17/10/23 18/10/23 19/10/23 20/10/23 21/10/23 22/10/23 23/10/23 24/10/23 25/10/23 26/10/23 27/10/23 28/10/23 29/10/23 30/10/23 31/10/23 1/11/23 2/11/23 3/11/23 4/11/23 5/11/23 6/11/23 7/11/23 8/11/23 9/11/23 10/11/23 11/11/23 12/11/23 13/11/23 14/11/23 15/11/23 16/11/23 17/11/23 18/11/23 19/11/23 20/11/23 21/11/23 22/11/23 23/11/23 24/11/23 25/11/23 26/11/23 27/11/23 28/11/23 29/11/23 30/11/23 31/11/23 1/12/23 2/12/23 3/12/23 4/12/23 5/12/23 6/12/23 7/12/23 8/12/23 9/12/23 10/12/23 11/12/23 12/12/23 13/12/23 14/12/23 15/12/23 16/12/23 17/12/23 18/12/23 19/12/23 20/12/23 21/12/23 22/12/23 23/12/23 24/12/23 25/12/23 26/12/23 27/12/23 28/12/23 29/12/23 30/12/23 31/12/23 1/1/24 2/1/24 3/1/24 4/1/24 5/1/24 6/1/24 7/1/24 8/1/24 9/1/24 10/1/24 11/1/24 12/1/24 13/1/24 14/1/24 15/1/24 16/1/24 17/1/24 18/1/24 19/1/24 20/1/24 21/1/24 22/1/24 23/1/24 24/1/24 25/1/24 26/1/24 27/1/24 28/1/24 29/1/24 30/1/24 31/1/24 1/2/24 2/2/24 3/2/24 4/2/24 5/2/24 6/2/24 7/2/24 8/2/24 9/2/24 10/2/24 11/2/24 12/2/24 13/2/24 14/2/24 15/2/24 16/2/24 17/2/24 18/2/24 19/2/24 20/2/24 21/2/24 22/2/24 23/2/24 24/2/24 25/2/24 26/2/24 27/2/24 28/2/24 29/2/24 30/2/24 31/2/24 1/3/24 2/3/24 3/3/24 4/3/24 5/3/24 6/3/24 7/3/24 8/3/24 9/3/24 10/3/24 11/3/24 12/3/24 13/3/24 14/3/24 15/3/24 16/3/24 17/3/24 18/3/24 19/3/24 20/3/24 21/3/24 22/3/24 23/3/24 24/3/24 25/3/24 26/3/24 27/3/24 28/3/24 29/3/24 30/3/24 31/3/24 1/4/24 2/4/24 3/4/24 4/4/24 5/4/24 6/4/24 7/4/24 8/4/24 9/4/24 10/4/24 11/4/24 12/4/24 13/4/24 14/4/24 15/4/24 16/4/24 17/4/24 18/4/24 19/4/24 20/4/24 21/4/24 22/4/24 23/4/24 24/4/24 25/4/24 26/4/24 27/4/24 28/4/24 29/4/24 30/4/24 31/4/24 1/5/24 2/5/24 3/5/24 4/5/24 5/5/24 6/5/24 7/5/24 8/5/24 9/5/24 10/5/24 11/5/24 12/5/24 13/5/24 14/5/24 15/5/24 16/5/24 17/5/24 18/5/24 19/5/24 20/5/24 21/5/24 22/5/24 23/5/24 24/5/24 25/5/24 26/5/24 27/5/24 28/5/24 29/5/24 30/5/24 31/5/24 1/6/24 2/6/24 3/6/24 4/6/24 5/6/24 6/6/24 7/6/24 8/6/24 9/6/24 10/6/24 11/6/24 12/6/24 13/6/24 14/6/24 15/6/24 16/6/24 17/6/24 18/6/24 19/6/24 20/6/24 21/6/24 22/6/24 23/6/24 24/6/24 25/6/24 26/6/24 27/6/24 28/6/24 29/6/24 30/6/24 31/6/24 1/7/24 2/7/24 3/7/24 4/7/24 5/7/24 6/7/24 7/7/24 8/7/24 9/7/24 10/7/24 11/7/24 12/7/24 13/7/24 14/7/24 15/7/24 16/7/24 17/7/24 18/7/24 19/7/24 20/7/24 21/7/24 22/7/24 23/7/24 24/7/24 25/7/24 26/7/24 27/7/24 28/7/24 29/7/24 30/7/24 31/7/24 1/8/24 2/8/24 3/8/24 4/8/24 5/8/24 6/8/24 7/8/24 8/8/24 9/8/24 10/8/24 11/8/24 12/8/24 13/8/24 14/8/24 15/8/24 16/8/24 17/8/24 18/8/24 19/8/24 20/8/24 21/8/24 22/8/24 23/8/24 24/8/24 25/8/24 26/8/24 27/8/24 28/8/24 29/8/24 30/8/24 31/8/24 1/9/24 2/9/24 3/9/24 4/9/24 5/9/24 6/9/24 7/9/24 8/9/24 9/9/24 10/9/24 11/9/24 12/9/24 13/9/24 14/9/24 15/9/24 16/9/24 17/9/24 18/9/24 19/9/24 20/9/24 21/9/24 22/9/24 23/9/24 24/9/24 25/9/24 26/9/24 27/9/24 28/9/24 29/9/24 30/9/24 31/9/24 1/10/24 2/10/24 3/10/24 4/10/24 5/10/24 6/10/24 7/10/24 8/10/24 9/10/24 10/10/24 11/10/24 12/10/24 13/10/24 14/10/24 15/10/24 16/10/24 17/10/24 18/10/24 19/10/24 20/10/24 21/10/24 22/10/24 23/10/24 24/10/24 25/10/24 26/10/24 27/10/24 28/10/24 29/10/24 30/10/24 31/10/24 1/11/24 2/11/24 3/11/24 4/11/24 5/11/24 6/11/24 7/11/24 8/11/24 9/11/24 10/11/24 11/11/24 12/11/24 13/11/24 14/11/24 15/11/24 16/11/24 17/11/24 18/11/24 19/11/24 20/11/24 21/11/24 22/11/24 23/11/24 24/11/24 25/11/24 26/11/24 27/11/24 28/11/24 29/11/24 30/11/24 31/11/24 1/12/24 2/12/24 3/12/24 4/12/24 5/12/24 6/12/24 7/12/24 8/12/24 9/12/24 10/12/24 11/12/24 12/12/24 13/12/24 14/12/24 15/1

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MES KEVEEYAM COLLEGE VALANCHERY

DEPARTMENT OF CHEMISTRY

Analytical Aspects of Chemistry for Industries KVM/CC/CHE/22-23/02

Time Table

Sl. no.	Date	Day	Name of the faculty engaging the class	time
1.	4/1/23	Wednesday	Dr. Jisha V. S.	3.30-4.30
2.	6/1/23	Friday	Dr. C. Soumini	3.30-4.30
3.	9/1/23	Monday	Dr. C. Soumini	3.30-4.30
4.	11/1/23	Wednesday	Dr. Jisha V. S.	3.30-4.30
5.	13/1/23	Friday	Dr. C. Soumini	3.30-4.30
6.	16/1/23	Monday	Dr. C. Soumini	3.30-4.30
7.	18/1/23	Wednesday	Dr. Jisha V. S.	3.30-4.30
8.	20/1/23	Friday	Dr. Jisha V. S.	3.30-4.30
9.	23/1/23	Monday	Smt. Jaseela M. A.	3.30-4.30
10.	25/1/23	Wednesday	Smt. Jaseela M. A.	3.30-4.30
11.	27/1/23	Friday	Dr. Jisha V. S.	3.30-4.30
12.	30/1/23	Monday	Smt. Jaseela M. A.	3.30-4.30
13.	1/2/23	Wednesday	Dr. Jisha V. S.	3.30-4.30
14.	3/2/23	Friday	Smt. Jaseela M. A.	3.30-4.30
15.	6/2/23	Monday	Dr. T. K. Saifuneesa	3.30-4.30
16.	8/2/23	Wednesday	Dr. Jisha V. S.	3.30-4.30
17.	10/2/23	Friday	Dr. T. K. Saifuneesa	3.30-4.30
18.	13/2/23	Monday	Smt. Jaseela M. A.	3.30-4.30
19.	15/2/23	Wednesday	Dr. Jisha V. S.	3.30-4.30
20.	17/2/23	Friday	Dr. T. K. Saifuneesa	3.30-4.30
21.	20/2/23	Monday	Dr. T. K. Saifuneesa	3.30-4.30
22.	22/2/23	Wednesday	Dr. C. Soumini	3.30-4.30
23.	24/2/23	Friday	Dr. T. K. Saifuneesa	3.30-4.30
24.	27/2/23	Monday	Dr. C. Soumini	3.30-4.30
25.	1/3/23	Wednesday	Dr. T. K. Saifuneesa	3.30-4.30
26.	3/3/23	Friday	Dr. C. Soumini	3.30-4.30
27.	6/3/23	Monday	Smt. Jaseela M. A.	3.30-4.30
28.	8/3/23	Friday	Dr. Jisha V. S.	3.30-4.30
29.	10/3/23	Wednesday	Dr. T. K. Saifuneesa	3.30-4.30
30.	13/3/23	Monday	Smt. Jaseela M. A.	3.30-4.30

Dr. Jisha V. S. – 9 hours

Smt. Jaseela M. A. - 7 hours

Dr. C. Soumini – 7 hours

Dr. T. K. Saifuneesa – 7 hours





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Certificate

KVM/CC/22-23/02

This is to certify that

Lubna

has successfully completed the certificate course on "*Analytical Aspects of Chemistry for Industries*" conducted by the Department of *Chemistry*, MES Keveeyam College, Valancherry during the period 2022-23.

CO-ORDINATOR

Klinee

HEAD OF DEPARTMENT

Alina

DR. K.P. VINOD KUMAR
PRINCIPAL

Keveeyam





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Certificate

This is to certify that

KVM/CC/22-23/02

With V.
has successfully completed the certificate course on "Analytical Aspects of Chemistry for
Industries" conducted by the Department of _____, MES

Keveeyam College, Valancherry during the period 2022-23.

CO-ORDINATOR

Klinee

HEAD OF DEPARTMENT

Dr. P. V.

Dr. K.P. VINOD KUMAR
PRINCIPAL

K. Vinod

