St. Michael's College, Cherthala

Alappuzha, Kerala-688 539
Affiliated to University of Kerala
and Re-accredited by NAAC with 'A' Grade

ADD ON COURSE 2018-19

Name of the Programme : POLYMER TECHNOLOGY

Name of the Department : CHEMISTRY

Course Code : CH 087

St. Michael's College

MAYITHARA P.O., CHERTHALA, ALAPPUZHA-688539

An institution with Minority Status Affiliated to the University of Kerala and
Re-accredited by NAAC with 'A' Grade

Add on Course - 2018-19

COMMERCE	Diploma in Goods & Services Tax Practices (DGSTP) & Tally
ZOOLOGY	Vermi Technology
CHEMISTRY	Polymer Technology
PHYSICS	Materials science
SOFTWARE DEVELOPMENT	Android Development
TOURISM STUDIES	Customer Service Executive
HINDI	Hindi Language and Communication
MATHEMATICS	Basic Mathematics
ENGLISH	Basics of Business Communication

Phone : 0478-2822387, 2810387
Email : michaelscherthala@gmail.com, Web : www.stmc.ac.in

NAME OF COURSE : **POLYMER TECHNOLOGY**

COURSE CODE : **CH 087**

NO OF STUDENTS ENROLLED : **35**

CONTENTS

Certificate Course

in

Polymer Technology

Unit I – Introduction to Polymers
(6hrs)

Brief history of macromolecular science, general characteristics of polymers in comparison with common organic compounds. Nomenclatures. Distinction between plastics, elastomers and fibres. Natural polymers- cellulose, silk, gums and resin.

Unit II – Types of Polymers and Polymerisation
(6hrs)

Thermoplastics and thermosettings, functionality concept. Concept of cross linked polymers. Types of polymerization- addition, condensation, ionic, co-ordination. Addition – polymerisation – mechanism, initiation, propagation and termination processes, initiators, inhibitors. Mechanism of ionic polymerization.

Unit III – Methods of Polymerisation
(6hrs)

Methods of polymerization-bulk, suspension, emulsion, solution necessity of copolymers and copolymerization, blocks and graft copolymers. Detailed study of the following thermosetting polymers : polyurethanes (a) epoxy resins- grades of epoxy resins, curing process and its importance with mechanism (b) poly carbonates, silicones.

Unit IV – Elastomers
(6hrs)

Polyisoprene, polybutadiene, neoprene. Detailed study of the following thermoplastic polymers with respect to synthesis, chemistry, properties and applications. Vinyl polymers- polyvinyl acetate and its modifications like PVA, PVB and polyacetals. Polyamides - nylon - 6, nylon-66 and other nylons. Poly ethers and poly esters, terephthalates.

Unit V – Experimental Determination of Polymers:
(6hrs)

Molecular weight and molecular weight distribution – number , weight and viscosity average molecular weights of polymers, methods of determining molecular weight, practical

significance of molecular weight distribution, size of polymers. Polymer processing- compression moulding, casting, extrusion , fibre spinning, injection moulding, thermoforming, vulcanization of elastomers, polymer industry in India.

References:

1. Bllmeyer, "Textbook of polymer science", John Wiley and Sons
2. D.D. Deshpande, "Physical chemistry of macromolecules", Vishal publications, New Delhi, 1985
3. V.R. Gowariker, N.V. Viswanathan and J.Sreethan, "Polymer Science", Wiley Eastern Ltd, 1986

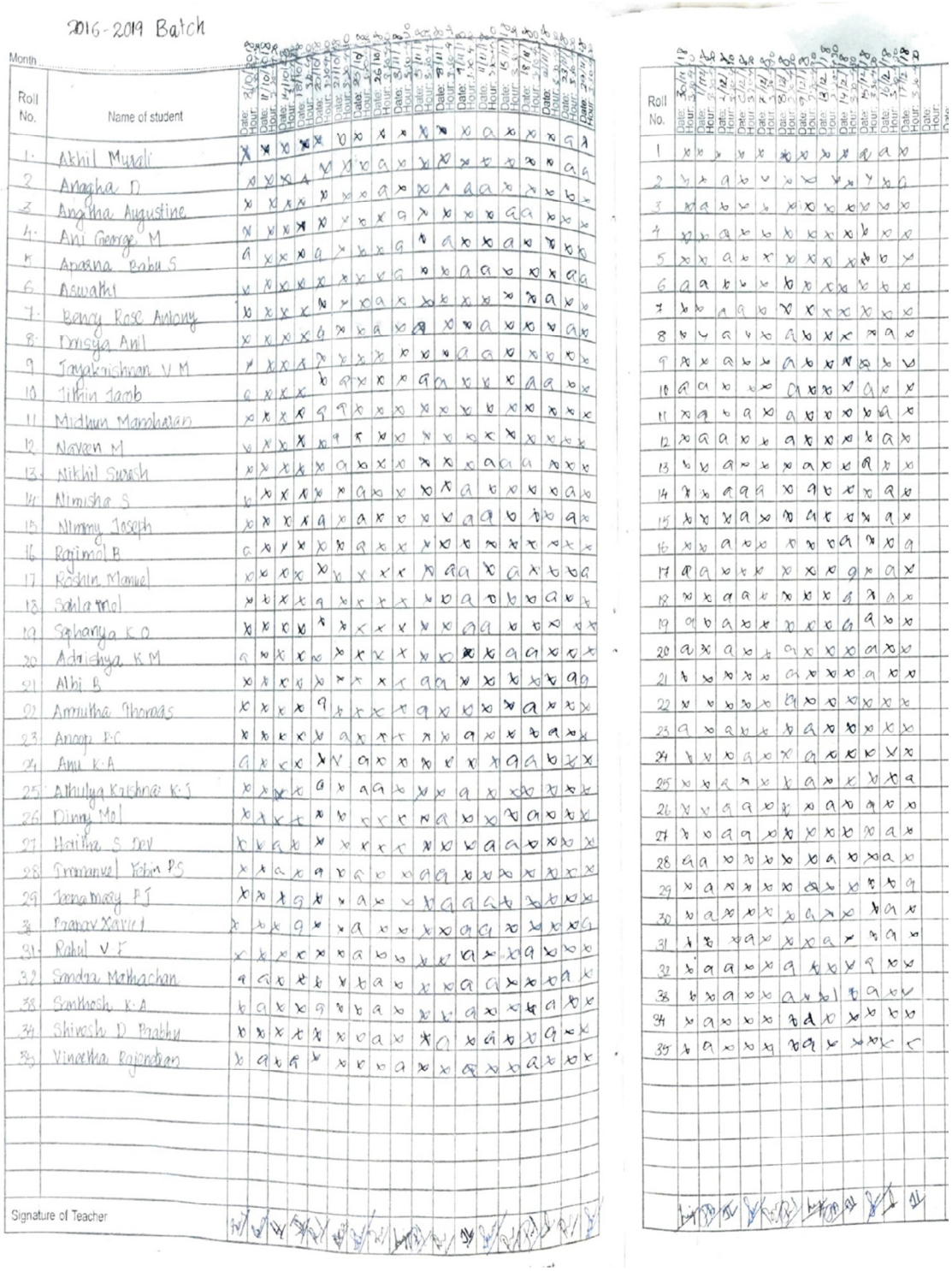
Class Schedule 2018-2019

Department: Chemistry **Course: Polymer Technology**

Sl No	Date	Day	Time	Name of Teacher	Class Room No
1	08-10-2018	Friday	3.30 - 4.30 pm	Smt.Seena Elizabeth George	A- 17
2	11-10-2018	Monday	3.30 - 4.30 pm	Dr.Pearl Augustine	A- 17
3	14-10-2018	Friday	3.30 - 4.30 pm	Smt. Liya Jose	A- 17
4	18-10-2018	Monday	3.30 - 4.30 pm	Sri. Joseph Libin K.L	A- 17
5	20-10-2018	Wednesday	3.30 - 4.30 pm	Dr. Beena James	A- 17
6	21-10-2018	Thursaday	3.30 - 4.30 pm	Smt. Seena Elizabeth George	A- 17
7	25-10-2018	Monday	3.30 - 4.30 pm	Dr.Pearl Augustine	A- 17
8	26-10-2018	Tuesday	3.30 - 4.30 pm	Smt. Liya Jose	A- 17
9	03-11-2018	Wednesday	3.30 - 4.30 pm	Sri. Joseph Libin K.L	A- 17
10	05-11-2018	Friday	3.30 - 4.30 pm	Dr. Beena James	A- 17
11	08-11-2018	Monday	3.30 - 4.30 pm	Smt. Seena Elizabeth George	A- 17
12	09-11-2018	Tuesday	3.30 - 4.30 pm	Dr.Pearl Augustine	A- 17
13	11-11-2018	Thursaday	3.30 - 4.30 pm	Smt. Liya Jose	A- 17
14	15-11-2018	Monday	3.30 - 4.30 pm	Sri. Joseph Libin K.L	A- 17
15	18-11-2018	Thursaday	3.30 - 4.30 pm	Dr. Beena James	A- 17
16	22-11-2018	Monday	3.30 - 4.30 pm	Smt. Seena Elizabeth George	A- 17
17	23-11-2018	Tuesday	3.30 - 4.30 pm	Dr.Pearl Augustine	A- 17

18	29-11-2018	Monday	3.30 - 4.30 pm	Smt. Liya Jose	A- 17
19	30-11-2018	Tuesday	3.30 - 4.30 pm	Sri. Joseph Libin K.L	A- 17
20	01-12-2018	Wednesday	3.30 - 4.30 pm	Dr. Beena James	A- 17
21	02-12-2018	Thursaday	3.30 - 4.30 pm	Smt. Seena Elizabeth George	A- 17
22	06-12-2018	Monday	3.30 - 4.30 pm	Dr.Pearl Augustine	A- 17
23	07-12-2018	Tuesday	3.30 - 4.30 pm	Smt. Liya Jose	A- 17
24	08-12-2018	Wednesday	3.30 - 4.30 pm	Sri. Joseph Libin K.L	A- 17
25	09-12-2018	Thursaday	3.30 - 4.30 pm	Dr. Beena James	A- 17
26	13-12-2018	Monday	3.30 - 4.30 pm	Smt. Seena Elizabeth George	A- 17
27	14-12-2018	Tuesday	3.30 - 4.30 pm	Dr.Pearl Augustine	A- 17
28	15-12-2018	Wednesday	3.30 - 4.30 pm	Smt. Liya Jose	A- 17
29	16-12-2018	Thursaday	3.30 - 4.30 pm	Sri. Joseph Libin K.L	A- 17
30	17-12-2018	Friday	3.30 - 4.30 pm	Dr. Beena James	A- 17

ATTENDANCE STATEMENT



2016-2019 Batch

Month

Roll No.	Name of student
1	Akhil Murali
2	Anagha D
3	Angitha Augustine
4	Ani George M
5	Aparna Babu S
6	Aswathi
7	Bency Rose Antony
8	Dhisya Anil
9	Jayakrishnan V M
10	Jithin Jamb
11	Midhun Manoharan
12	Naveen M
13	Nikhil Suresh
14	Nimisha S
15	Nimmy Joseph
16	Rajimol B
17	Roshin Manuel
18	Sabla Mol
19	Sphoorya K O
20	Adrishya K M
21	Albi B
22	Ammutha Thomas
23	Anoop P C
24	Anu K A
25	Athulya Krishna K S
26	Dinny Mol
27	Haritha S Dev
28	Immanuel Yobin P S
29	Jeena Mary P J
30	Pranav Xavier
31	Rahul V E
32	Sandra Mathachan
33	Santhosh K A
34	Shinesh D Prabhu
35	Vineetha Rajendran

Signature of Teacher

ST.MICHAEL'S COLLEGE, CHERTHALA

Add-on Course Examination February 2019

Branch: Chemistry

Polymer Technology

Time: 1 Hr. **Maximum Marks: 30**

Section A, 1 mark each (Very short answer type)

(Answer in one word/2 sentences)

Answer all questions

1.What are elastomers?
2. How is melamine-formaldehyde resin prepared?
3. Write a note on Nylon 66.
4. Mention the monomer unit of neoprene.
5. Define copolymers.
6. Explain extrusion.
7. Define fibre spinning.
8. Explain emulsion polymerisation
9. Give two examples of natural polymers
10. What is SBR and SAN?

(10x1=10 Marks)

Section B, 2 marks each (Short answer type - should not exceed one paragraph)

Answer any *five* questions from the following

11. Write a note on Condensation polymerisation.
12. Explain the synthesis of HDPE.
13. Write a note on Polyurethanes.
14. Explain number, weight and viscosity average molecular weight.
15. Define graft copolymers.
16. Explain the preparation of PVC.
17. What are epoxy resins?
18. Explain the vulcanisation of elastomers.

(5x2=10 Marks)

Section D, 10 marks each (Long essay)

Answer any *one* question

19. Write a short note on silicones?

20. What are the methods of determining molar mass?

21. Write notes on (1) compression (2) moulding (3) casting

(1x10=10 Marks)

Mark List

Discipline : Chemistry

Course Title : Polymer Technology

Date of Examination :

08/03/2019 Maximum Marks: 30

Sl No	Candidate Code	Name of the Student	Mark Obtained
1	23516136001	AKHIL MURALI	24
2	23516136003	ANAGHA .D	25
3	23516136004	ANGITHA AUGUSTINE	22
4	23516136005	ANI GEORGE M	28
5	23516136006	APARNA BABU S	25
6	23516136007	ASWATHY I	27
7	23516136008	BENCY ROSE ANTONY	24
8	23516136009	DRISYA ANIL	26
9	23516136010	JAYAKRISHNAN V M	27
10	23516136011	JITHIN JACOB	28
11	23516136012	MIDHUN MANOHARAN	22
12	23516136013	NAVEEN M	21
13	23516136014	NIKHIL SURESH	24
14	23516136015	NIMISHA S	30
15	23516136016	NIMMY JOSEPH	30
16	23516136017	RAJIMOL B	24
17	23516136018	ROSHIN MANUEL	25
18	23516136019	SAHLA MOL	30
19	23516136020	SEPHANYA K O	26
20	23516136021	ADRISHYA K M	28
21	23516136022	ALBI B	24
22	23516136023	AMRUTHA THOMAS	22
23	23516136024	ANOOP P C	23
24	23516136025	ANU K A	27
25	23516136026	ATHULYA KRISHNA K J	25
26	23516136027	DINNYMOL	26
27	23516136028	HARITHA S DEV	22
28	23516136029	IMMANUEL FEBIN P S	24
29	23516136030	JEENAMARY P J	26
30	23516136032	PRANAV XAVIER	24
31	23516136033	RAHUL V F	28
32	23516136034	SANDRA MATHACHAN	27

33	23516136035	SANTHOSH K A	24
34	23516136036	SHIVESH D PRABHU	30
35	23516136037	VINEETHA RAJENDRAN	30

Name and Dated Signature of
the Course Coordinator

Name and Dated Signature of
the HoD

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ADD-ON COURSE
CERTIFICATE

This is to certify that Mr. AKHIL MURALI (23516136001)
B.Sc Chemistry 2016 Admission
has completed Certificate/Add-on course in
Polymer Technology (CH 087)
offered by the Department of Chemistry during the academic year 2018-2019. He/Shee is awarded with A

Head of the Department | Course Coordinator | Principal

Industrial job orientation among the B.Sc. students will helpful for them to build up a carrier in industry, is the main motive behind the add-on course offered by the department. With

this aim department of chemistry offered an add-on course in Polymer Technology. It is a five moulded 30hrs programme. The syllabi cover most of the essential features of the Polymer chemistry including its pioneer details, processing, and its application in industry. After the completion of the programme the student will get an idea about the fundamentals of various polymers used in every-day life, its industrial applications and different kinds of analytical techniques to measure its quality etc. This programme also opened a gateway for the students to choose their carrier in various industry and research organization etc.