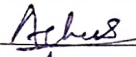
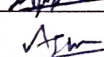
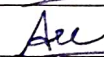
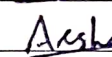
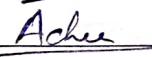
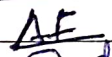
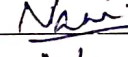
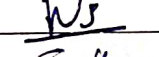
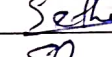
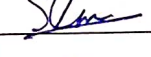
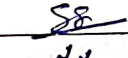
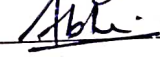
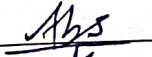
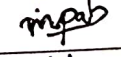


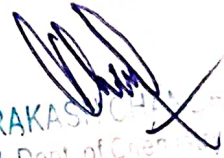
MANNAM MEMORIAL NSS COLLEGE, KOTTIYAM
STUDENT ENROLMENT LIST

Name of department : Chemistry

Name of course : Fundamentals of Laboratory Safety (2019-20)

Sl No	Name of Student	Signature
1	Abhiram Krishnan.R	
2	Abina Saleem	
3	Achu.S.	
4	Adhish S Sujan	
5	Aiswarya. S	
6	Anila S	
7	Anjali R	
8	Aparna P R	
9	Aparna S Madhu	
10	Arkan C Sekharan	
11	Arsha Rajendran	
12	Aswathi Anil	
13	Aysha Farsana R	
14	Della Antony	
15	Gopika G Nair	
16	Nimitha S J	
17	Niranjan S	
18	Sethulekshmi K S	
19	Sreelekshmi M	
20	Sreelekshmi S	
21	Vaishnav V	
22	Vidya Sabu	
23	Abhijith S	
24	Abhijith S	
25	Abhilekshmi J S	
26	Abhishek M P	
27	Abhitha B M	


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28	Akhil S L	<u>Akhi</u>
29	Amal A	<u>Amal</u>
30	Anandu S J	<u>Ana</u>
31	Anandu J	<u>Ani</u>
32	Anjukrishna S	<u>Ani</u>
33	Aravind Anil	<u>Anju</u>
34	Athira R	<u>Aa</u>
35	B S Gayathri	<u>Atre</u>
36	Gokul Raj S	<u>BS</u>
37	Jayaghesh Prasad S	<u>Gos</u>
38	Meghaprabha B	<u>JP</u>
39	Muhammed Sahid S	<u>mp</u>
40	Nandana B S	<u>na - B</u>
41	Reshma R	<u>Nande</u>
42	Sooraj S	<u>m</u>
43	Sreelekshmi A	<u>SS</u>
44	ADARSH RAJ	<u>AR</u>
45	ADITHYA. J	<u>Ad</u>
46	ARCHA R KURUP	<u>Archi</u>
47	ASWANI. A	<u>Archa</u>
48	ASWATHY R S	<u>Aa</u>
49	DEVABALA.R	<u>as</u>
50	GOKUL .G	<u>deva</u>
51	GOPIKA .A M	<u>Gpda</u>
52	GOPU SREENATH	<u>Gopika</u>
53	INDRAJITH . R	<u>Gpu</u>
54	MEKHANA.S	<u>Inde</u>
55	PRIYANKA J	<u>Megha</u>
56	SARATH S	<u>Priya</u>
57	SUJISHNA. R. G	<u>SS</u>
58	VISHNUPRIYA. N	<u>Suji</u>
59	VISHNUPRIYA.S.B	<u>Vp</u>
60	A HARITHA PRAKASH	<u>Vista</u>
61	A K NAJMA ..	<u>Hari</u>

62	ADITHYA PRAKASH.J	Adi
63	AISWARYA LEKSHMI S	Aish
64	AMRUTHA A	Amr
65	ARYA R S	Arya
66	BHAGHYA LEKSHMI R S	Bhag
67	DEVIKA DEVAN	Devi
68	FARSANA.S	Fars
69	GOPIKA S KUMAR	Gopi
70	GOPIKA.R.S	Gopi
71	GOUTHAM KRISHNA	Gop
72	JASMI JAFAR	Jas
73	KRIPA M S	Kripa
74	LEKSHMI JAYAKUMAR	Lek
75	M.S APARNA	M.s
76	MANYA.K	Manya
77	NADHIYA FATHIMA. N	Nadhiya
78	SETHULEKSHMY . U	Sethu
79	SNEHA SURESH	Sneha
80	SREEKUTTAN .G	Sree
81	SREELEKSHMI J S	Sree
82	THUSHARA B T	Thushara
83	ADITHYA S	Adi
84	AKSHAY RAJ	Akshay
85	ANJALI B BABU	Anjali
86	ANJANA V U	Anjana
87	ARCHA A S	Arch
88	DEVIKA G	Devi
89	GEETHU B S	Geethu
90	HARIPRIYA K	Haripriya
91	INDRAJA S	Indra
92	NEETHU B S	Neethu
93	R KRISHNENDHU	Raj
94	RAJSHREE S	Raj
95	SAJIN CHANDRAN	Saji

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96	SANDRA SHAJI	<u>Sandra</u>
97	SILPA SYAM	<u>Silpa</u>
98	SULAIKHA S.	<u>SS</u>
99	VARSHA G	<u>Varsha</u>
100	VINEETHA VIJAYAN	<u>Vineetha</u>
101	ADITHYAN U S	<u>Adithyan</u>
102	ANEENA NAIR R	<u>Aneena</u>
103	APARNA S B	<u>Aparna</u>
104	DEVIKRISHNA G	<u>Devi</u>
105	DEVIKA J R	<u>Devi</u>
106	GOKUL PRASAD	<u>Gop.</u>
107	GOURI RAJ R G	<u>Gouri</u>
108	JYOTHISH JAYAN	<u>Jy</u>
109	KRISHNA PRIYA S	<u>Kp.</u>
110	LEKSHMI PRIYA G	<u>Lp</u>
111	MIDHUN RAJ	<u>Midhun</u>
112	MILAN MANOHAR	<u>Mil</u>
113	NAVAMY N	<u>Navam</u>
114	RAJALEKSHMI R	<u>Rajalekshmi</u>
115	RAJARAJESWARY S B	<u>Rajesh</u>
116	S R SREEHARI	<u>Sr</u>

Fundamentals of Laboratory Safety

Module 1

Introduction to chemistry lab safety-Importance of suitable wearables in the lab and lab discipline. Hazards due to toxic and corrosive chemicals. Importance of understanding labels and Material safety data sheet. Knowledge of hazard warning information and symbols. Common Ignition sources and electrical equipment in the laboratory. Information on flammable and toxic solvents, carcinogenic substances.

Information on common Explosive compounds. Various man-made industrial disasters

Module 2

Handling of Laboratory glassware such as burette, pipette, standard flask etc. Handling of strong acids such as hydrochloric acid and sulphuric acid. Preparation of different normal solutions of common acids and bases. Different ways to express concentration of a solution (Normality and molarity). Primary standard, preparation of standard solution.

Module 3

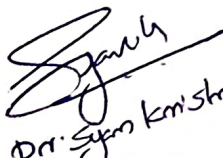
Potential human mistakes that may happen in the laboratory. Necessity of First Aid. Emergency procedures in chemical splashes to skin and eyes, burns and electric shock.

Objectives

1. Familiarize students about good laboratory practices
2. Familiarize students about the handling of common acids and bases
3. Familiarize students about various first aid procedures in the chemistry laboratory

Learning Outcomes

1. Understanding general Laboratory safety measures
2. Recognize the importance of Labels and warning symbols for the Safe handling of Toxic and corrosive chemicals
3. Know the FIRST AID procedures


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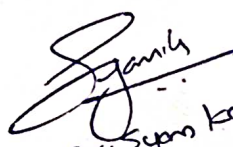

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Fundamentals of Laboratory Safety

Course Schedule and topic of discussion

Date	Time	Topic	Number of hours	Theory/Practical
5/10/2019 Saturday	10 am-1 pm 1.45 to 3.45 pm	Introduction to general lab safety, Labels and MSDS	5h	Theory
19/10/2019 Saturday	10 am-1 pm 1.45 to 3.45 pm	Hazard warning information & symbols, flammable and toxic chemicals, Carcinogenic and explosive compounds.	5h	Theory
26/10/2019 Saturday	10 am-1 pm 1.45 to 3.45 pm	Basic idea of various terms used to express the concentration of a solution: Primary standard, preparation of common normal solutions of strong acids and bases	5h	Theory
2/11/2019 Saturday	10 am-1 pm 1.45 to 3.45 pm	Necessity of first aid. Various first aid procedures	5h	Theory and demo
5/11/2019 Tuesday	3.15 pm to 5.15 pm	Handling of various Laboratory glassware/ ignition sources and common electric equipment	2h	Practical for Chemistry
6/11/2019 Wednesday	3.15 pm to 5.15 pm		2h	Practical for Physics
7/11/2019 Thursday	3.15 pm to 5.15 pm		2h	Practical for Zoology
12/11/19 Tuesday	3.15 pm to 5.15 pm	Preparation of standard /common normal solutions (Various acids, bases, primary standard)	2 h	Practical for Chemistry
13/11/19 Wednesday	3.15 pm to 5.15 pm		2h	Practical for Physics
14/11/19 Thursday	3.15 pm to 5.15 pm		2h	Practical for Zoology
16/11/19 Saturday	9 am-11 am	Preparation of standard /common normal solutions (Various acids, bases, primary standard)	2h	Practical for Chemistry
	11.15 to 1.15 pm		2h	Practical for Physics
	2 pm to 4 pm		2h	Practical for Zoology
21/11/19 Thursday	3.15 pm to 5.15 pm	Final exam	2h	Theory
23/11/19 Saturday	9 am to 11 am	Final practical exam and feed back	2h	Chemistry
	11.15 am to 1.15 pm		2h	Physics
	2 pm to 4 pm		2h	Zoology


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Add on Course (2019-20)

Fundamentals of Laboratory Safety

Each Question carries 4 marks each ($4 \times 10 = 40$)

Total marks-40

Time: 2h

1. Write a note on MSDS
2. What are the common ignition sources in chemistry laboratory?
3. What are explosive compounds?
4. Discuss about any one industrial disaster
5. Write a note on normality and molarity
6. Explain with examples the importance of primary standard
7. Discuss about the common mistakes that can happen in a chemistry laboratory
8. What are the emergency procedures when there is a chemical spillage to eyes?
9. Write a note on any four-hazard warning information and symbols
10. What is the importance of wearing lab coat?

Practical Examination

20 Marks

Time: 2h

Prepare a 100/250/500 ml, 0.1/0.5/1N solution of HCl/NaOH/Oxalic acid/ Na_2CO_3
(with ✓ mark)



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MANNAM MEMORIAL NSS COLLEGE, KOTTIYAM
END COURSE EVALUATION

of department : Chemistry

of course : Fundamentals of Laboratory Safety (2019-20)

on of Exam: 4h

Marks: 60

Sl No	Name of Student	Marks Obtained
1	Abhiram Krishnan.R	48
2	Abina Saleem	47
3	Achu.S.	45
4	Adhish S Sujan	47
5	Aiswarya. S	44
6	Anila S	43
7	Anjali R	48
8	Aparna P R	47
9	Aparna S Madhu	47
10	Arkan C Sekharan	—
11	Arsha Rajendran	40
12	Aswathi Anil	41
13	Aysha Farsana R	42
14	Della Antony	49
15	Gopika G Nair	48
16	Nimitha S J	49
17	Niranjana S	—
18	Sethulekshmi K S	46
19	Sreelekshmi M	47
20	Sreelekshmi S	—
21	Vaishnav V	40
22	Vidya Sabu	48
23	Abhijith S	43

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24	Adithyath S	
25	Akhileshkshmi J S	42
26	Aarthanar M P	50
27	Achutha B M	49
28	Akshil S L	50
29	Amal A	44
30	Anandhu S J	—
31	Anandhu J	40
32	Anjukrishna S	41
33	Aaravind Arul	44
34	Ashika R	43
35	B S Gayathri	46
36	Gokul Raj S	49
37	Jayaghesh Prasad S	47
38	Meghaprabha B	45
39	Muhammed Sahid S	40
40	Nandana B S	—
41	Preshma R	48
42	Sooraj S	44
43	Sreelekshmi A	45
44	ADARSH RAJ	47
45	ADITHYA J	46
46	ARCHA R KURUP	41
47	ASWANI. A	44
48	ASWATHY R S	38
49	DEVABALA R	42
50	GOKUL G	46
51	GOPIKA A M	41
52	GOPU SREENATH	46
53	INDRAJITH . R	—
54	MEKHANA.S	38
55	PRIYANKA J	38
56	SARATH S	—
57	SUJISHNA. R. G	44


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58	VISHNUPRIYA. N	
59	VISHNUPRIYA.S.B	47
60	A HARITHA PRAKASH	48
61	A K NAJMA	49
62	ADITHYA PRAKASH.J	44
63	AISWARYA LEKSHMI S	44
64	AMRUTHA A	46
65	ARYA R S	46
66	BHAGHYA LEKSHMI R.S	—
67	DEVIKA DEVAN	47
68	FARSANA.S	40
69	GOPIKA S KUMAR	41
70	GOPIKA.R.S	46
71	GOUTHAM KRISHNA	44
72	JASMI JAFAR	—
73	KRIPA M S	41
74	LEKSHMI JAYAKUMAR	38
75	M.S APARNA	46
76	MANYA.K	—
77	NADHIYA FATHIMA. N	47
78	SETHULEKSHMY . U	43
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82	THUSHARA B T	50
83	ADITHYA S	—
84	AKSHAY RAJ	43
85	ANJALI B BABU	46
86	ANJANA V U	47
87	ARCHA A S	—
88	DEVIKA G	46
89	GEETHU B S	47
90	HARIPRIYA K	47
91	INDRAJA S	46

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92	NEETHU B S	
93	R KRISHNENDHU	47
94	RAJSHREE S	—
95	SAJIN CHANDRAN	47
96	SANDRA SHAJI	46
97	SILPA SYAM	—
98	SULAIKHA S	44
99	VARSHA G	43
100	VINEETHA VIJAYAN	42
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111	MIDHUN RAJ	47
112	MILAN MANOHAR	45
113	NAVAMY N	46
114	RAJALEKSHMI R	47
115	RAJARAJESWARY S B	49
116	S R SREEHARI	—

Number of students enrolled: 116

Number of students completed: 100


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Fundamentals of Laboratory Safety

Report

The add on course "Fundamentals of Laboratory Safety" was offered to the first-year students of BSc Chemistry, Physics and Zoology (2019-20 batch). The duration of the course was 30 h. The theory session of 20 h was carried out combinedly while 6 h practical sessions were conducted separately for each batch. The classes were arranged either on evenings or on Saturdays. The final examination of 2h (theory) was conducted on 21/11/19 while the practical examination and feedback session were arranged separately for each batch. More than 95% students pass the final examination with good scores.

Feedback

After the course students were able to understand the basic safety protocols to be followed in a chemistry laboratory. Moreover, they were able to get rid of the fear of handling fragile glassware and chemicals. They understood the importance of suitable wearables and maintaining discipline in the lab. They found the practical sessions very effective and useful.


Dr. Suresh Krishnan


Dr. Athire C.J.


Dr. Prakash Chandra




Principal
M.M.N.S. COLLEGE
KOTTIYAM