

BOS MEETING

(2019-20)



DEPARTMENT OF INDUSTRIAL CHEMISTRY

NAGARJUNA GOVERNMENT COLLEGE

(AUTONOMOUS)

NALGONDA.

**NAGARJUNA GOVERNMENT COLLEGE,
NALGONDA**

Autonomous

Re-accredited by NAAC with 'A' grade

BOARD OF STUDIES MEETING 2019-2020

DEPARTMENT OF INDUSTRIAL CHEMISTRY

NAGARJUNA GOVERNMENT COLLEGE, NALGONDA
(AUTONOMOUS)

NO: 1 / BOS/Ind chem/acad/

DATE : 18-10-2019

FROM

THE PRINCIPAL,

N.G. GOVT COLLEGE,

NALGONDA.

Sir,

SUB: - Nagarjuna Govt. college, Nalgonda (Autonomous)-convening of Board of Studies meeting for Industrial chemistry on 21-10-2019 Intimation-Request-Reg.

I am happy to inform that you have been nominated as a Chairman/University Nominee/ Subject expert member for BOS of Department of Industrial chemistry of this college for the year .

The meeting of the Board of studies in Industrial chemistry will be held on **21-10-2019** in the Dept of Industrial chemistry to consider the following agenda.

1. To approve the syllabus and model question papers for III, IV, V & VI semesters.
2. To approve the Scheme of internal assessment.
3. To approve the list of examiners for paper setting and evaluation.
4. Any other matter with permission of the chair.

Chairman, BOS is requested to make it convenient to attend the meeting and extend your cooperation.


Principal
Nagarjuna Govt. College
(Autonomous) NALGONDA.

Copy to.

1. **The Chairman, Board of studies** : **Sri V.Srinivasulu**, In-Charge Dept. Ind .chemistry
In Ind.Chemistry N.G.College, Nalgonda
2. **Honorable member& University nominee** : **Dr.Annapoorna R.S. Butti**, Associate Prof of
BOS in Ind.Chemistry Chemistry,USCI MGU,Nalgonda
3. **Subject expert from outside the college** : **Dr. A.Srinivasulu**, Asst. Prof. of Chemistry,
GDC, Huzurnagar.
4. **Subject expert from outside the college** : **Dr. V. Shekhar** , Asst. Prof. of Chemistry
KRR GDC Kodad, Suryapet Dist.

**NAGARJUNA GOVERNMENT COLLEGE, NALGONDA
(AUTONOMOUS)**

NO: 2 / BOS/Ind chem/acad/

DATE : 18-10-2019

TO

**Dr. Annapoorna R.S. Butti ,
USCI , Mahatha Gandhi University,
Nalgonda.**

**SUB:- Nagarjuna Govt. College, Nalgonda(Autonomous)-convening the meeting of
board of studies Industrial Chemistry on 21-10-2019 Intimation-Request-Reg.**

Sir,

I am happy to inform that you have been nominated as a Member of Board of Studies in the Department of Industrial Chemistry of this college for the year .

The meeting of the Board of studies in Industrial Chemistry will be held on **21.10.2019** in the Dept of Industrial Chemistry to consider the following agenda.

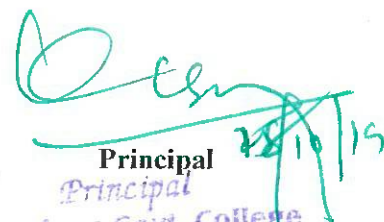
1. To approve the syllabus and model question papers for III, IV, V & VI semesters.
2. To approve the Scheme of internal assessment.
3. To approve the list of examiners for paper setting and evaluation.
4. Any other matter with permission of the chair.

Hence you are requested to make it convenient to attend the meeting and extend your cooperation.



In-Charge /Chairman BOS

DEPARTMENT OF INDUSTRIAL CHEMISTRY



Principal
Principal
Nagarjuna Govt. College
(Autonomous) NALGONDA

NAGARJUNA GOVERNMENT COLLEGE, NALGONDA
(AUTONOMOUS)

NO: 3 / BOS/Ind chem/acad/

DATE : 18-10-2019

TO

Dr. A. Srinivasulu,
Principal (FAC) &
Asst. Prof. of Chemistry
GDC Huzurnagar.

**SUB: - Nagarjuna Govt. College, Nalgonda(Autonomous)-convening the
meeting of Board of studies Industrial Chemistry on 21-10-2019.Intimation-Request-
Reg.**

Sir,

I am happy to inform that you have been nominated as a Member of Board of Studies in the Department of Industrial Chemistry of this college for the year .


The meeting of the Board of studies in Industrial Chemistry will be held on **21.10.2019** in the Dept of Industrial Chemistry to consider the following agenda.

1. To approve the syllabus and model question papers for III, IV, V & VI semesters.
2. To approve the Scheme of internal assessment.
3. To approve the list of examiners for paper setting and evaluation.
4. Any other matter with permission of the chair.

Hence you are requested to make it convenient to attend the meeting and extend your cooperation.


In-Charge /Chairman BOS

DEPARTMENT OF INDUSTRIAL CHEMISTRY


Principal
Principal
Nagarjuna Govt. College
(Autonomous) NALGONDA

NAGARJUNA GOVERNMENT COLLEGE, NALGONDA
(AUTONOMOUS)

NO: 4 / BOS/Ind chem/acad/

DATE : 18-10-2019

TO

Dr. V. Shekhar
Asst. Prof. of Chemistry,
KRR GDC Kodad,
Suryapet Dist.

SUB:- Nagarjuna Govt. College, Nalgonda(Autonomous)-convening the meeting of Board of studies Industrial Chemistry on 21-10-2019 Intimation-Request-Reg. Sir,

I am happy to inform that you have been nominated as a Member of Board of Studies in the Department of Industrial Chemistry of this college for the year .

The meeting of the Board of studies in Industrial Chemistry will be held on **21-10-2019** in the Dept of Industrial Chemistry to consider the following agenda.

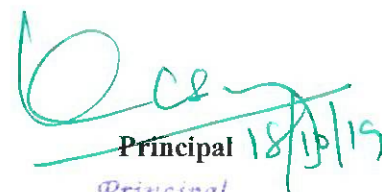
1. To approve the syllabus and model question papers for I, II, III, IV, V & VI semesters.
2. To approve the Scheme of internal assessment.
3. To approve the list of examiners for paper setting and evaluation.
4. Any other matter with permission of the chair.

Hence you are requested to make it convenient to attend the meeting and extend your cooperation.



In-Charge /Chairman BOS

DEPARTMENT OF INDUSTRIAL CHEMISTRY



Principal
Principal
Nagarjuna Govt. College
(Autonomous) NALGONDA.

NAGARJUNA GOVT.COLLEGE, NALGONDA
(AUTONOMOUS)

DEPARTMENT OF INDUSTRIAL CHEMISTRY
CONSTITUTION OF BOARD OF STUDIES: 2019-20

SNO	CATEGORY	NAME & DESIGNATION	CONTACT NOS
1	Chairman Board of studies	Sri V.Srinivasulu, Asst.Prof of Chemistry Nagarjuna Govt College, Nalgonda.	9440838371
2	University Nominee	Dr. Annapoorna R.S. Butti, USCI, Dept. of Chemistry Mahatha Gandhi University, Nalgonda.	8498055022
3	Subject expert from outside the college	Dr. A. Srinivasulu, Asst. Prof. of Chemistry, GDC, Huzurnagar, Suryapet Dist.	9440140506
4	Subject expert from outside the college	Dr. V. Shekhar Asst. Prof. of Chemistry, KRR GDC Kodad, Suryapet Dist.	9959342659
5	Members: All The faculty members of the Dept.	1. K.Kishore Kumar, (Guest faculty).	9642284865
6	One representative from Industry/Corporate sector/Allied areas	Sri.K.Ravi Shastri Manager Operational Executive RA Chem Phrama Ltd.	9985185274

Submitted by

In-Charge /Chairman BOS

Proposals approved Principal/

Chairman academic council

Nagarjuna Govt. College
(Autonomous) NALGONDA

NAGARJUNA GOVT.COLLEGE, NALGONDA.
(AUTONOMOUS)

DEPARTMENT OF INDUSTRIAL CHEMISTRY
BOARD OF STUDIES MEETING

The members of Board of studies in Chemistry Department, N.G.College, Nalgonda met under the chairmanship of Sri V.Srinivasulu on 21-10-2019 and passed the following resolutions.

AGENDA

1. To consider and approve the syllabus for B.Sc - II& III years (III, IV, V & VI semesters) for the academic year 2019-20.
2. To consider and approve the choice based credit system (CBCS) and cumulative grade Point average (CGPA) system for II & III year students for the Academic year 2019-20.
3. To Consider and approve the continuation of Internal Assessment for the Students admitted in to II & III year degree course during 2019-20.
4. To consider and approve the new syllabus for the CBCS and cumulative grade Point average (CGPA) System for the II & III Year Students.
5. To consider and approve to conduct semester wise Theory & practical Examinations for the II & III Year students for the Year 2019-20.
6. To consider and approve the list of examiners for paper setting and evaluation for B.Sc. II & III years (III,IV,V&VI semesters) for the academic year 2019-20.
7. To consider and approve the model question papers for B.Sc II and III Years for the academic year 2019-20.
8. Any other related academic matter.

Shree
Asst. Professor in Chemistry
KRR Govt. Arts & Science College
Nalgonda-508206, Nalgonda Dist. (T.S)

Shree
DR. ANNAPURNA R.S. BUTTI
Associate Professor, Dept of Chemistry
MAHATMA JYOTHI UNIVERSITY
NALGONDA-508254, A.P. INDIA.

George
PRINCIPAL
Govt. Degree College
MURTHY NAGAR, Suryapet Dist

Resolutions

1. Unitization of syllabus in to 4 units for each paper.
2. CBCS and CGPA systems are approved.
3. To conduct 2 Internal Assessments for 20 marks (Very short Answer Type-5M (5x1), MCQ-5M (5x1) & Short Answer Type -10M Two questions out of four (2x5), one student seminar for 5 marks and one assignment for 5 marks (total 30 marks) for II & III year students .
4. II & III year syllabi are approved.
5. Semester wise Practical exams are approved for II & III year students.
6. List of the examiners are approved.
7. Model question papers are approved
8. Internal examinations are to be conducted for 30 marks. Semester end examinations are conducted for 70 marks, It is mandatory to get a minimum of 28 marks for one to get through it. On the whole for 100 marks one must get 40 marks to get through the paper.
9. **Question Paper Blue Print For Semester End Examination II and III year students.**

Section –A

- To give five very short answer questions and ask them to answer all questions.
5 X 2 = 10 Marks

Section-B

- To give Six Short answers questions and ask them to answer any four questions.
4 X 5 = 20 Marks

Section-C

- To give four Long answer questions with internal choice and ask them to answer all question.

10. To Prepare and supply of question banks and model question papers to the students

11. Continuous Internal Assessment method is adopted to evaluate the progression of the Students.

Boone

PRINCIPAL
Govt Degree College
Suryapet Dist

4 X 10 = 40 Marks

Dr. Annapurna

DR. ANNAPORNA R.S. BUTTI
Associate Professor, Dept. of Chemistry
MAHATMA JYOTHI UNIVERSITY
NANDYALUR, A.P. INDIA.

Shukla

ASST. PROFESSOR IN CHEMISTRY
KRR.Govt. College
Nandyal-505001
T.S.

RECEIPT

Received an amount of Rs. 1000=00 (Rupees thousand only)
from the Principal, Nagarjuna Government College, (Autonomous) Nalgonda
towards honorarium for attending BOS Meeting in Industrial Chemistry
conducted by Department of Industrial Chemistry on 21-10-2019.

Signature



Dr. V. Shekhar,

Asst. Prof. of Chemistry,
KRR GDC Suryapet Dist.

Received of Mr. J. B. ...
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**APPROVED PANEL OF EXAMINERS FOR PAPER SETTING AND
EVALUATION FOR THE YEAR 2019-2020**

SNO	PAPER		NAME	DISIGNATION	CELL NO
1	III	1	Dr.T. Bala Narsaiah	Prof.of Chemical Engineering, JNTUA College of Anantapur	9440245965
2		2	Sri.K.Ravi Shastri	Manager Operational Executive Faculty in Industry	9985185274
3	IV	1	Dr.T. Bala Narsaiah	Prof.of Chemical Engineering, JNTUA College of Anantapur	9440245965
4		2	Sri.K.Ravi Shastri	Manager Operational Executive Faculty in Industry	9985185274
5	V	1	Dr A Dayanand	Assistant Prof of Chemistry Govt City College, Patthar gatti, Hyderabad.	9182862376
6		2	Dr. A. Srinivasulu	Asst. Prof. of Chemistry,KRR GDC, Huzurnagar	9440140506
7	VI	1	Dr.K.Venkata krishna	Asst. Prof. of Chemistry, MKR GDC Devarakonda	9441993436
8		2	Dr. V. Shekhar	Asst. Prof. of Chemistry,KRR GDC, Kodad	9959342659
9	VII	1	Sri P. Yedukondalu	Lect. In Chemistry MKR Degree College, Devarakonda	9849056316
10		2	Dr. A. Srinivasulu	Asst. Prof. of Chemistry GDC, Huzurnagar.	9440140506
11	VIII	1	Smt.V.Anuradha	Asst.prof, MBA, Dept. of Management, MGU	
12		2	Dr.T. Bala Narsaiah	Prof.of Chemical Engineering, JNTUA College of Anantapur	9440245965

Shelary Vrb
Asst. Prof. in Chemistry
KRR Govt. Arts & Science College
Kodad-508206, Nalgonda Dist. - T.S

Shrinivasulu
T. ANNAPOORNA R.S. BUTI
Associate Professor, Dept. of Chemistry
MAHATMA GANDHI UNIVERSITY
NALGONDA-508254 A.P. INDIA.

Principals
PRINCIPAL
Govt. Degree College
Kodad, Suryapet Dist

NAGARJUNA GOVERNMENT COLLEGE (AUTONOMOUS), NALGONDA
ALLOCATION OF CREDITS AT SUBJECT LEVEL
SUBJECT: INDUSTRIAL CHEMISTRY
COURSE: B. Sc SCIENCE

YEAR	SEMESTER	MODULE (PAPER)	HOURS PER WEEK	CREDITS	MAX. MARKS	
S E C O N D	THIRD	III (core)	Material, Energy Balance calculations & Unit process in Chemical process	4	4	100
		Practical's	Synthesis of simple organic compounds-III	2	1	50
	FOURTH	IV (core)	Process of Instrumentation & Oils, Fats, Waxes, Soaps, Paints	4	4	100
		Practical's	Synthesis of simple organic compounds-IV	2	1	50
T H I R D	FIFTH	V (core)	Advanced Polymer Chemistry	3	3	100
		V Elective	Pharmaceutical Chemistry	3	3	100
		V Elective	International Patent Rights	3	3	100
		Practical's	Synthesis of advanced organic compounds-V	2	1	50
		Practical's	Synthesis of advanced organic compounds-VI	2	1	50
	SIXTH	VI (core)	Drugs and Its manufacturing process	3	3	100
		VI Elective(Skill Based)	Industrial Scientific Management	3	3	100
		VI Elective(Skill Based)	Industrial safety and Its Measures	3	3	100
		Practical's	Estimation of Organic compounds-VII	2	1	50
		Practical's	Estimation of Organic compounds-VIII	2	1	50

Vals

Sheleng

Dr. ANNAPOORNA R.S. BUTTI
 Associate Professor, Dept. of Chemistry
 MAHATMA GANDHI UNIVERSITY
 NALGONDA - 508254, A.P. INDIA

Sheleng
 Asst. Professor in Chemistry
 KRR Govt. Arts & Science College
 Kodad-508206, Nalgonda Dist. (C)

Sheleng
 PRINCIPAL
 Govt. Engg. College
 Nalgonda, Suryapet Dist.

COMMISSIONERATE OF COLLEGIATE EDUCATION, T.S, HYDERABAD

BASIC CURRICULAR FORMAT UNDER MODULAR AND CBCS SYSTEM

COLLEGE: NAGARJUNA GOVT.COLLEGE, NALGONDA

COURSE; B.Sc

SUBJECT: INDUSTRIAL CHEMISTRY

YEAR: 2019-20

Semester: III

Paper: III

NAME OF THE MODULE: Material Balance and Energy Balance & Unit processes in Chemical Manufacture

NATURE OF THE MODULE: CORE

MODE OF THE LEARNING: REGULAR

MONTH& WEEK	No. of Hours	Topic	Curricular Activity	Co-Curricular Activity	Remarks
JUNE-III	4	Dimensions & Units	Class-room teaching	Visit to library	
JUNE-IV	4	Dimensions & Units	Lecture method	Assignment	
JULY-I	4	Material Balance I	Demonstration	Visit to library	
JULY-II	4	Material Balance II	Demonstration	Student seminar	
JULY-III	4	Material Balance III	Lecture method	Assignment	
JULY-IV	4	Material Balance IV	Demonstration	Visit to library	
AUG-I	4	Energy Balance I	Lecture method	Assignment	
AUG-II	4	Energy Balance II	Demonstration	Student seminar	
AUG-III	4	Nitration	Class-room teaching	Assignment	
AUG-IV	4	Halogenation	Class-room teaching	Student seminar	
SEPT-I	4	Sulphonation	Demonstration	Visit to library	
SEPT-II	4	Oxidation	Lecture method	Quiz program	
SEPT-III	4	Hydrogenation	Class-room teaching	Assignment	
SEPT-IV	4	Alkylation	Demonstration	Quiz program	
OCT-I	4	Amination by Reduction	Class-room teaching	Visit to library	

S. Annapoorna
 DR. ANNAPOORNA R.S. BUTI
 Associate Professor, Dept. of Chemistry
 MAHATMA GANDHI UNIVERSITY
 NALGONDA - 508254, A.P. INDIA.

Shobana
 Asst. Professor in Chemistry
 KRR GOVT. Degree College
 Nalgonda-508202, Nalgonda Dist. (T.S)

Principals

PRINCIPAL
 KRR GOVT. Degree College
 Nalgonda Dist.

V. S. S.
 HEAD OF DEPT

NAGARJUNA GOVERNMENT COLLEGE, NALGONDA

Autonomous Re-accredited by NAAC with "A" Grade

Revised Syllabus for Department of **INDUSTRIAL CHEMISTRY**

B.Sc II Year 3rd Semester 3rd Paper

60hrs

Unit -I

15hrs

Material Balance and Energy Balance

Dimension & Units

Material Balance without involving reaction

Unit -II

15hrs

Material Balance involving chemical reaction

Energy balance

Unit-III

15hrs

Unit processes in Chemical Manufacture.

Nitration

Halogenation

Sulphonation

Unit-IV

15hrs

Unit processes in Chemical Manufacture

Hydrogenation

Alkylation

Amination

Group

PRINCIPAL
Govt. Degree College
NAGARJUNA GOVERNMENT DIST.

Vala

COLLEGE: NAGARJUNA GOVT.COLLEGE, NALGONDA

COURSE; B.Sc SUBJECT: INDUSTRIAL CHEMISTRY YEAR: 2019-20

Semester: III Paper: III

NAME OF THE MODULE: Material Balance and Energy Balance & Unit processes in Chemical Manufacture

NATURE OF THE MODULE: CORE

MODE OF THE LEARNING: REGULAR

Unit -I

Material Balance and Energy Balance

15hrs

Dimension & Units: Basic chemical calculations- Atomic weight, Molecular weight, Equivalent weight, Mole.

Material Balance without involving reaction: Steps involved in material calculation without involving Chemical reaction, Flow diagram for material balance, Simple material balance with or without Recycle or By pass for chemical engineering operations such as Distillation, Absorption, Crystallization, Drying, Mixing, Evaporation, Extraction.

Unit -II

15hrs

Material Balance involving chemical reaction: Steps involved in material calculation with involving Chemical reaction, Concept of limiting reactant conversion, Gas phase reaction with or without recycle or bypass.

Energy balance: Heat capacity, Molar heat capacity, Specific heat capacity of Pure gases at Constant pressure, Derivation of $C_p - C_v = R$, Concept of Enthalpy.

Unit-III

15hrs

Unit processes in Chemical Manufacture.

Nitration: Introduction, Nitrating agents, Kinetics and Mechanism of nitration- Nitration of paraffin hydrocarbons, Benzene to Nitrobenzene, Nitrobenzene to m-dinitrobenzene, Chlorobenzene to Ortho and Para-nitro Chlorobenzene.

Halogenations: Introduction, Reagents of halogenations, Kinetics of Halogenation reactions, Nuclear halogenations, Halogenation of Aromatic side chain, Commercial manufacture of Chlorobenzene, Mono Chloroacetic acid, Dichlorodifluoromethane(Freon), Preparation of (Tri Chloro Acetaldehyde) Chloral.

Suphonation: Introduction, Sulphonating agents, Kinetics of Sulphonation, Mechanism of Sulphonation (Benzene to Benzene sulphonic acid), Commercial sulphonation of Benzene, Alkyl benzene (Dodecyl Benzene).

Unit -IV

Oxidation –Hydrogenation- Alkylation – Ammunition

15hrs

Oxidation: Introduction, Types of Oxidation reaction, Oxidizing agents, Kinetics of Oxidation Mechanism of Oxidation, Liquid phase Oxidation-Manufacture of Acetic acid, Vapor phase Oxidation –Commercial manufacture of Benzoic acid from Toluene.

Hydrogenation : Introduction, Kinetics of Hydrogenation, Catalysts for Hydrogenation reaction, Hydrogenation of Vegetable Oil, Manufacture of Methanol from Carbon Monoxide and Hydrogen, Hydrogenation of Acids to Alcohols and Esters.

Alkylation: Introduction, Types of Alkylation, Alkylating agents, Kinetics of Alkylation, Mechanism of Alkylation reaction (Friedal Craft Alkylation), Manufacture of Alkyl benzene, Manufacture of di-methyl Aniline.

Amination : Introduction, Methods of Reduction, Metal and Acid catalytic, Sulphide, Electrolytic, Metal and Alkali Sulphites, Manufacture of Aniline, m-Nitro aniline and p- Aminophenol.

Practical's for III semester

1. Nitration:- Preparation of Nitro benzene
2. Bromination: - Preparation of Para bromo acetanilide
3. Hydrolysis:-Preparation of Para nitro aniline
4. Oxidation: - Preparation of p nitro benzoic acid
5. Reaction of Diazonim salt: Preparation of di azo benzene.

Shelkey

Shelkey
Dr. ANNAPOORNI BUTTI
Associate Professor of Chemistry
MAHATMA GANDHI UNIVERSITY
NALGONDA - 598254 A.P. INDIA.

Vsibo

Shelkey
PRINCIPAL
Govt. Degree College
MADHUR GARDI, Suvipat Dist

COMMISSIONERATE OF COLLEGIATE EDUCATION, T.S, HYDERABAD

BASIC CURRICULAR FORMAT UNDER MODULAR AND CBCS SYSTEM

COLLEGE: NAGARJUNA GOVT.COLLEGE, NALGONDA

COURSE; B.Sc

SUBJECT: INDUSTRIAL CHEMISTRY

YEAR: 2019-20

Semester: IV

Paper: IV

NAME OF THE MODULE: Process instrumentation, Thermometers Oils, fats, waxes paints,pigment

NATURE OF THE MODULE: CORE

MODE OF THE LEARNING: REGULAR

MONTH& WEEK	No. of Hours	Topic	Curricular Activity	Co-Curricular Activity	Remarks
NOV-II	4	Process instrumentation	Class-room teaching	Student seminar	
NOV-III	4	Concept of Measurement	Lecture method	Assignment	
NOV-IV	4	Thermometers	PPT	Visit to Library	
DEC-I	4	Thermometers	Lecture method	Student seminar	
DEC-II	4	Pressure	Class-room teaching	Assignment	
DEC-III&IV	4	Liquid Level	Demonstration	Visit to Library	
JAN-I&II	4	Viscosity Measurement	Lecture method	Group Discussion	
JAN-III	4	Oils and Fats	PPT	Student seminar	
JAN-IV	4	Oils and Fats	Class-room teaching	Visit to Library	
FEB-I	4	Waxes	Lecture method	Assignment	
FEB-II	4	Soap, Manufacture	PPT	Group Discussion	
FEB-III	4	Detergents	Class-room teaching	Student seminar	
FEB-IV	4	Detergents	Lecture method	Visit to Library	
MARCH-I	4	Pigments	Demonstration	Assignment	
MARCH-II	4	Paints	Class-room teaching	Student seminar	

Shetty

Shetty
 Dr. ANNAPURNA R.S. BUTTI
 Associate Professor Dept. of Chemistry
 MAHATMA GANDHI UNIVERSITY
 NALGONDA - 508254. A.P. INDIA.

George

Verma
 HEAD OF DEPT

NAGARJUNA GOVERNMENT COLLEGE, NALGONDA

Autonomous Re-accredited by NAAC with "A" Grade

Revised Syllabus for Department of INDUSTRIAL CHEMISTRY

B. Sc II Year 4th Semester 4th Paper **60hrs**

Unit – I **15hrs**

Process instrumentation

Thermometers

Unit II **15hrs**

Pressure

Liquid level

Viscosity measurements

Unit III **15hrs**

Oils-Fats

Waxes

Soaps

Unit – IV **15hrs**

Detergents

Pigments

Paints

Shetty

S. S. S. S.
Associate Professor, Dept. of Chemistry
NAGARJUNA GOVERNMENT COLLEGE
NALGONDA - 508234, A.P., INDIA

V. S.

George

PRINCIPAL
Govt. Degree College
NALGONDA, Suryapet Dist.

COLLEGE: NAGARJUNA GOVT.COLLEGE, NALGONDA

COURSE; B.Sc SUBJECT: INDUSTRIAL CHEMISTRY YEAR: 2019-20

Semester: IV Paper: IV

NAME OF THE MODULE: Process instrumentation, Thermometers Oils, fats, waxes paints, pigment

NATURE OF THE MODULE: CORE

MODE OF THE LEARNING: REGULAR

Unit – I

Process instrumentation – Thermometers

15hrs

Process instrumentation: Static and Dynamic characteristics of Instruments, Concept of Measurement elements of Instruments, Principle-Construction and working of the following Measuring Instruments.

Thermometers (Temperature): Bimetallic thermometers, Pressure Spring thermometers, Liquid -Filled thermometers, Gass-Filled thermometers, Vapour Actuated thermometer, Resistance thermometers, Pyrometers.

Unit II

Pressure – Liquid level- Viscosity measurements

15hrs

Pressure: Construction and functioning of Manometers, Bourdon Pressure gauze, Bellow type Diaphragm type, Pirani gauzes.

Liquid Level: Direct and Indirect liquid level Measurements, Flat type liquid level gauzes, Ultrasonic level gauzes and Bubbler System.

Viscosity Measurements: Flow measurement, Orifice meter, Rota meter.

Unit III

Oils-Fats-Waxes Soaps

15hrs

Oil-Fats: Introduction, Distinction between Oils and Fats, Properties, Classification, Vegetable Oils- Manufacture of Cotton Seed oil by Expression and Solvent Extraction method, Refining of crude Vegetables Oil, Animal fats and oils.

Waxes: Classification of Waxes, Common Waxes, Determination of Acid Value, Saponification Value, Iodine Value, Elaiden test, Hydrogenation of oils- Dry process and Wet process.

Soaps: Introduction, Raw Materials required for manufacture of Soap, Manufacture of A) Laundry Soap B) Toilet Soap C) Transparent Soaps, Cleaning action Soaps.

Unit – IV

Detergents – Pigments- Paints

15hrs


Detergents: Introduction, Difference between Soaps and Detergents, Principle groups of Synthetic detergents Reagents a) Anionic b) Cationic c) Non- Ionic detergents, Manufacture of Alky Hydrogen Sulphate Alkyl Benzene Sulphonates, Cleaning action of detergent.

Pigments: Introduction, Manufacture and uses of the following pigments a) White lead b) Zinc white c) Ultramarine blue d) Carbon black e) Lithopone f) Red Lead g) Chrome green.

Paints: Introduction, Manufacture of paints, Varnishes –Raw materials, Spirit varnishes, Solvents and Thinners paints and Varnish industries in India.

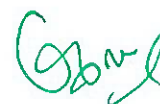
PRACTICAL FOR IV SEMESTER;

1. Nitration: Preparation of m- di Nitro Benzene
2. Hydrolysis: Preparation of Para bromo aniline
3. Reduction: Preparation of m- Nitro aniline.
4. Determination of Saponification Value.
5. Determination of Acid Value.
6. Preparation of Detergent


ANNAPOORNA R.S. BUTTI
Associate Professor, Dept. of Chemistry
MAHATMA GANDHI UNIVERSITY
NALGONDA - 508254. A.P. INDIA.







PRINCIPAL
Govt. Degree College
NALGONDA - 508254

COMMISSIONERATE OF COLLEGIATE EDUCATION, T.S, HYDERABAD

BASIC CURRICULAR FORMAT UNDER MODULAR AND CBCS SYSTEM

COLLEGE: NAGARJUNA GOVT.COLLEGE, NALGONDA

COURSE; B.Sc

SUBJECT: INDUSTRIAL CHEMISTRY

YEAR: 2019-20

Semester: V

Paper: V

NAME OF THE MODULE: Polymers, Plastics, Elastomers- Fibres, Dyes

NATURE OF THE MODULE: CORE

MODE OF THE LEARNING: REGULAR

MONTH & WEEK	No. of Hours	Topic	Curricular Activity	Co-Curricular Activity	Remarks
JUNE-III	3	Basic Polymerization I	Class-room teaching	Visit to library	
JUNE-IV	6	Basic Polymerization I	Lecture method	Assignment	
JULY-I	4	Basic Polymerization	Demonstration	Visit to library	
JULY-II	2	Basic Polymerization	Demonstration	Student seminar	
JULY-III	4	Plastics & Derivatives	Lecture method	Assignment	
JULY-IV	5	Plastics & Derivatives	Demonstration	Visit to library	
AUG-I	3	Plastics & Derivatives	Lecture method	Assignment	
AUG-II	3	Plastics & Derivatives	Demonstration	Student seminar	
AUG-III	6	Elastomer	Class-room teaching	Assignment	
AUG-IV	3	Elastomer & Fibres	Class-room teaching	Student seminar	
SEPT-I	6	Fibres	Demonstration	Visit to library	
SEPT-II	3	Dyes	Lecture method	Quiz program	
SEPT-III	4	Types of Dyes	Class-room teaching	Assignment	
SEPT-IV	4	Classification of dyes	Demonstration	Quiz program	
OCT-I	4	Syn. Of Dyes	Class-room teaching	Visit to library	

Shekhar

A. Anagone
 A. POORNA R.S.
 Associate Professor, Dept. of CA,
 BHATMA GANDHI UNIVERSITY,
 NALGONDA-508254, A.P. INDIA

George

Vals
 HEAD OF DEPT

PRINCIPAL
 Govt. Degree College
 Nalgonda District

NAGARJUNA GOVERNMENT COLLEGE, NALGONDA

Autonomous Re-accredited by NAAC with "A" Grade

Revised Syllabus for Department of INDUSTRIAL CHEMISTRY

B.Sc III Year, 5th Semester 5th Paper

60hrs

Unit I

15hrs

Polymers

Basic polymerization

Unit –II

15hrs

Plastics – Manufacturing Process

Unit III

15hrs

Elastomers- Fibres

Unit IV

15hrs

Dyes – Manufacturing Methods

Shree

Dr. Annapoorna

DR. ANNAPPOORNA R.S. BUTTI
Associate Professor, Dept. of Chemistry
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NALGONDA-508254. A.P., INDIA.

Vals

Princip

PRINCIPAL
Govt. Degree College
MURTHIABAR, Buryapat Dist.

COLLEGE: NAGARJUNA GOVT.COLLEGE, NALGONDA

COURSE; B.Sc SUBJECT: INDUSTRIAL CHEMISTRY YEAR: 2019-20

Semester: V Paper: V

NAME OF THE MODULE: Polymers, Plastics, Elastomers- Fibres, Dyes

NATURE OF THE MODULE: CORE

MODE OF THE LEARNING: REGULAR

Unit I

Polymers

15hrs

Basic polymerization: Introduction, Classification of polymers- By source-Natural Polymers, Synthetic polymers, By Polymerization reaction- Addition polymerization or Chain growth polymerization, Condensation polymerization or Step growth polymerization, By Composition – Homo polymers, Co-Polymers, By Skeletal Structure (Linear, Cyclic, Branched, Dendrite, Network or Cross linked), Types of polymerization reactions a) Addition polymerization – Free Radical addition polymerization, Cationic addition polymerization, Anionic addition polymerization, b) Condensation polymerization c) Co-Ordination Polymerization (Ziegler – Natta Catalyst), Stereo Chemistry Polymers – Isotactic, Syndiotactic, Atactic polymers, Degree of Polymerization, Determination of Molecular weight of polymers by Number Average molecular weight, Weight Average molecular weight.

Unit –II

Plastics – Manufacturing Process

15hrs

Plastic: Introduction, Classification-Thermoset and Thermoplastics, Properties and Uses. Manufacture of Thermoplastic polymers-Manufacture of Poly ethylene (1.High Pressure method or Low Density Poly Ethylene 2.Low Pressure method or High Density Poly Ethylene), Properties and Uses. Manufacture of Poly Propylene, Manufacture of Poly Vinyl Chloride. Manufacture of Thermosetting polymers- Manufacture Phenol-Formaldehyde Resins, Manufacture Urea-Formaldehyde Resins.

Unit III

Elastomers- Fibres

15hrs

Elastomers : Introduction, Natural and Synthetic rubber, structure, Manufacture, Vulcanization of rubber, Vulcanization Agents, Buna Rubber-Buna –S, Buna-N, Neoprin Rubber

Fibres :Introduction, Rayon or Artificial Silk, Distinction between Artificial and Natural Silk, Manufacture of Cuprammonium Rayon, Acetate Rayon, Viscose Rayon, Polyamide Fibers- Manufacture of Nylon -6 and Nylon -66, Teflon.

Unit IV

Dyes – Manufacturing Methods

15hrs

Dyes : Introduction, Colors and Constitution- Chromophores, Auxochromes, Types of Chromophores, Types of Auxochromes (Bathochromic group, Hypsochromic group), Classification of Dyes – According to their mode of application – Acid dyes, Basic Dyes, Direct or Substantive Dyes, Mordant or Adjective Dyes, Vat dyes, Ingrain dyes or Developed dyes, Sulphur Dyes, Pigment Dyes, Spirit Soluble Dyes or Solvent, Food Dyes, Classification of dyes based on Chemical Constitution- Nitro Dyes, Nitroso dyes Azo dyes, Structure and Synthesis of Methyl Orange, Malachite Green, Phenolphalein, Alizarin.

PRACTICALS:

Analysis of common raw material

1. Preparation of Phenyl azo Beta Naphthol
2. Preparation of nylon-66
3. Preparation of phenol formaldehyde resin
4. Estimation of phenol
5. Estimation of Ketone

Shelma

S. Annagopine
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George

PRINCIPAL
Govt Degree College
UDHAPUR, Suddipet Dist

COMMISSIONERATE OF COLLEGIATE EDUCATION, T.S, HYDERABAD

BASIC CURRICULAR FORMAT UNDER MODULAR AND CBCS SYSTEM

COLLEGE: NAGARJUNA GOVT.COLLEGE, NALGONDA

COURSE; B.Sc

SUBJECT: INDUSTRIAL CHEMISTRY

YEAR: 2019-20

Semester: V

Paper: VI

NAME OF THE MODULE: Pharmaceutical Industry, Formulation and Routes of Administration, Pharmaceutical packing, Vitamins

NATURE OF THE MODULE: CORE

MODE OF THE LEARNING: REGULAR

MONTH& WEEK	No. of Hours	Topic	Curricular Activity	Co-Curricular Activity	Remarks
JUNE-III	3	History of Pharmacy	Class-room teaching	Visit to library	
JUNE-IV	6	Pharmacopeias I	Lecture method	Assignment	
JULY-I	4	Pharmacopeias I	Demonstration	Visit to library	
JULY-II	2	Pharmacopeias II	Demonstration	Student seminar	
JULY-III	4	Formulations	Lecture method	Assignment	
JULY-IV	5	Formulations	Demonstration	Visit to library	
AUG-I	3	Drug Administration	Lecture method	Assignment	
AUG-II	3	Drug Administration	Demonstration	Student seminar	
AUG-III	6	Pharmaceutical Excipients	Class-room teaching	Assignment	
AUG-IV	3	Pharmaceutical Packing	Class-room teaching	Student seminar	
SEPT-I	6	Surgical Dressing sutures	Demonstration	Visit to library	
SEPT-II	3	Vitamins	Lecture method	Quiz program	
SEPT-III	4	Vit. Class. Vit- A 1	Class-room teaching	Assignment	
SEPT-IV	4	Vit- B1, B2,	Demonstration	Quiz program	
OCT-I	4	Vit-B6, B12	Class-room teaching	Visit to library	

Shukra

Anugoon
 Associate Professor, Dept. of Chemistry
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Velo
 HEAD OF DEPT

NAGARJUNA GOVERNMENT COLLEGE, NALGONDA

Autonomous Re-accredited by NAAC with "A" Grade

Revised Syllabus for Department of **INDUSTRIAL CHEMISTRY**

B.Sc III Year 5th Semester 6th Paper

60hrs

UNIT-I

15hrs

Historical background and development of Pharmaceutical Industry in India

Pharmaceutical industry in India

Pharmacopeias

UNIT – II

15hrs

Formulation and Routes of Administration

Routes of Drug Administration

Pharmaceutical Excipients

Unit III

15hrs

Surgical Dressings Sutures, ligatures – Pharmaceutical packing

Wound and surgical dressings

Sutures and ligatures

Unit-IV

15hrs

Vitamins

Vitamin A (A1-retinol)

Vitamin B1: (Thiamine)

Vitamin B2: (Riboflavin)

Vitamin B6: (Pyridoxine)

Shree

Shree

DR. ANNAPOORNI R.S. Bhatti
Associate Professor, Dept. of Chemistry
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NALGONDA - 508254, A.P. INDIA

Valo

George

COLLEGE: NAGARJUNA GOVT.COLLEGE, NALGONDA

COURSE; B.Sc SUBJECT: INDUSTRIAL CHEMISTRY YEAR: 2019-20

Semester: V Paper: VI

NAME OF THE MODULE: Pharmaceutical Industry, Formulation and Routes of Administration,
Pharmaceutical packing, Vitamins

NATURE OF THE MODULE: CORE

MODE OF THE LEARNING: REGULAR

UNIT-I

Historical background and development of Pharmaceutical Industry in India 15hrs

Pharmaceutical industry in India – Pharmaceutical Enquiry Committee, and the Hathi-Committee, Specific Terms of reference of this Committees, Past Performance, Present Performance – Bulk Drug production, Formulations production, Imports and Exports, Research and Developments Drug prices.

Pharmacopeias: Introduction to various Pharmacopeias, History of Indian Pharmacopoeia, History of B.P.(British Pharmacopoeia) and U.S.P. (United States Pharmacopoeia) History of International Pharmacopoeia, European Pharmacopoeia Role of Pharmacopoeia, Contents of Pharmacopoeia.

UNIT – II

Formulation and Routes of Administration

15hrs

Introduction to various Formulations needs for dosage Forms, Reasons for Safe and Convenient delivery of accurate Dosage and Dosage forms, some important Criteria and Efficacy.

Routes of Drug Administration: Introduction, Oral Route, Rectal Route, Parental Route – Subcutaneous injection, Intramuscular injection, Intravenous injections, Intra dermal injection, Epicutaneous Routes – Ocular, oral, and Nasal Routes, Other Routes.

Pharmaceutical Excipients: Definition of Excipients, classification of Excipients based on nature of the dosage, Route of Administration, Possible level microbial contamination, Types of pharmaceutical Excipients, Their non proprietary names BP, USPNF, Synonyms, Chemical name structural formula, Functional category applications in pharmaceutical formulation, Description, Typical properties incompatibilities, Methods of Manufacture, Safety, Handling precautions, Related substances, Comments of binders, Antioxidant, Viscosity builders, Coating agents, Diluents, Sweeteners (Mannitol) Preservatives, Emulsifying agents, Sweeteners (Sorbitol), Lubricants glidant, Flavoring agent (Vanillin), Coloring agents, Gelatin (Coating agent)

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Unit III

Surgical Dressings Sutures, ligatures – Pharmaceutical packing

15hrs

Wound and surgical dressings: Introduction, Wound repair, Features of an ideal dressing, Types of Surgical dressing and their Uses i) Fibres ii) Fabrics iii) Bandages, iv) Self-adhesive plasters v) Compound dressings.

Sutures and ligatures: Introduction, Classification – Absorbable non-absorbable Pharmaceutical packaging – introduction, Selection of Packaging materials and characteristics of materials, Packaging materials – Glass, Plastics thermoplastics, Thermo sets, Package Evaluation.

Unit-IV

Vitamins

15hrs

Introduction, Nomenclature and Classification, Metabolic, Physiological or Biological function of Vitamins.

Vitamin A (A1-retinol) Occurrence, Isolation, Diseases caused by its deficiency, Physiological functions, Structures.

Vitamin B1: (Thiamine) Occurrence, Isolation, Diseases caused by its deficiency, Requirement, Structure.

Vitamin B2: (Riboflavin) Occurrence, Isolation, Diseases caused by its deficiency, Requirement, Structure.

Vitamin B6: (Pyridoxine) Occurrence, Isolation, Diseases caused by its deficiency, Requirements, Structure.

PRACTICALS:

1.Preparation of Aspirin

2.Preparation of Paracetamol

3. Estimation of Aspirin (Titrimetry)

4. Estimation of Ca⁺² ions in Ca-gluconate injection (Complexometry)

Shring

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PRINCIPAL
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COMMISSIONERATE OF COLLEGIATE EDUCATION, T.S, HYDERABAD

BASIC CURRICULAR FORMAT UNDER MODULAR AND CBCS SYSTEM

COLLEGE: NAGARJUNA GOVT.COLLEGE, NALGONDA

COURSE; B.Sc

SUBJECT: INDUSTRIAL CHEMISTRY

YEAR: 2019-20

Semester: VI

Paper: VII

NAME OF THE MODULE: Drugs manufacture, Pharmaceutical Q.C –Fermentation

NATURE OF THE MODULE: CORE

MODE OF THE LEARNING: REGULAR

MONTH& WEEK	No. of Hours	Topic	Curricular Activity	Co-Curricular Activity	Remarks
NOV-II	4	Drugs, Classification of drugs	Class-room teaching	Student seminar	
NOV-III	6	Antibacterial-sulpha drugs	Lecture method	Assignment	
NOV-IV	5	Sulpha drug derivatives Antipyretics	PPT	Visit to Library	
DEC-I	4	Antibiotics-Penicillin	Lecture method	Student seminar	
DEC-II	4	Antimalarials, Anti Histamines	Class-room teaching	Assignment	
DEC-III&IV	4	Anti Inflammatory, Cardiovascular drugs	Demonstration	Visit to Library	
JAN-I&II	3	Barbituates- Pento babital	Lecture method	Group Discussion	
JAN-III	5	Evolution of Crude drug	PPT	Student seminar	
JANIV	4	Physical evolution of Crude drug	Class-room teaching	Visit to Library	
FEB-I	4	Chemical Constitution of Plants	Lecture method	Assignment	
FEB-II	2	Chemical Constitution of Plants	PPT	Group Discussion	
FEB-III	4	Pharmaceutical Quality Control	Class-room teaching	Student seminar	
FEB-IV	4	Pharmaceutical Quality Control	Lecture method	Visit to Library	
MARCH-I	4	Fermentation Process	Demonstration	Assignment	
MARCH-II	3	Fermentation Process	Class-room teaching	Student seminar	

Shree

Shree

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PRINCIPAL
Govt Degree College
Nalgonda District

Vsh
HEAD OF DEPT

NAGARJUNA GOVERNMENT COLLEGE, NALGONDA

Autonomous Re-accredited by NAAC with "A" Grade
Revised Syllabus for Department of INDUSTRIAL CHEMISTRY

B.Sc III Year, 6th Semester 7th Paper

60hrs

Unit I

15hrs

Drugs & Manufacturing Process

Purification of raw material for the manufacturing of drugs

Sulpha drugs-Antipyretics and Analgesics

Unit – II

15hrs

Process for the Manufacture of Drugs

Antibiotics- penicillin

Antimalarial drug- Paludrin, chloroquine

Antihistamine- chlorpheniramine maleate

Antimicrobes- chlorophenicol, furazolidien

Anti inflammatory drugs- Salicylic acid and its derivatives

Cardiovascular drugs- methyl dopa (L-dopa)

Barbiturates- phento barbital

Unit III

15hrs

Physical Evaluation of Crude Drug

Evaluation of crude drugs

Chemical constitution of plant

Unit-IV

15hrs

Pharmaceutical Quality Control –Fermentation

Pyrogenic Testing; Glass Testing; Densities of Powders

Products based on Fermentation process

Shelug

Annapoorna

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Gayal

COLLEGE: NAGARJUNA GOVT.COLLEGE, NALGONDA

COURSE; B.Sc SUBJECT: INDUSTRIAL CHEMISTRY YEAR: 2019-20

Semester: VI Paper: VII

NAME OF THE MODULE: Drugs manufacture, Pharmaceutical Q.C –Fermentation

NATURE OF THE MODULE: CORE

MODE OF THE LEARNING: REGULAR

Unit I

Drugs & Manufacturing Process

15hrs

Introduction – Drug diseases (definition) Historical evaluation, Source – plant, Animal and Synthetic biotechnology and Human gene therapy.

Classification–Classification of Drugs based on structure and therapeutic activity with examples each.

Antibacterials-Sulphadruugs (or) Sulphonamides, Discovery of Sulphanilamide, Synthesis and Mechanism, Important derivatives of Sulphanilamide, Synthesis and Mechanism of sulphapyridine, sulphathiazole, sulphadiazine, sulphaguanidine, mechanism of action of sulpha drugs.

Antipyretics and Analgesics –Definition, Structure, Synthesis of Aspirin, Phenacetin (p-ethoxy acetanilide), Melubrin and Novalign.

Unit - II

Process For the Manufacture of Drugs

15hrs

Antibiotics:Definition, Discovery of Penicillin, Structure, Types of Penicillin, Synthesis, Production of Penicillin i) Surface Culture Method, ii) Bran Method, iii) Submerged Culture Method, Isolation, Drug action of Penicillin.

Antimalarial drug: Structure, Synthesis and therapeutic action of Paludrine, Chloroquine.

Antihistamine:Introduction, Structure, Synthesis and therapeutic action of chlorpheniraminemaleate.

Antimicrobes:Defination, Structure, Synthesis and therapeutic action of chlorophenicol, furazolidien.

Anti inflammatory drugs: Salicylic acid and its derivatives- Structure, Synthesis, Uses of Aspirin, Salol, Salsalate, Sodium salicylate, Salicylamide, Benorilate, Choline salicy late, Flufenisal.

Cardiovascular drugs: Structure, synthesis therapeutic action of methyl dopa (L-dopa)

Barbiturates: Sedatives, hypnotics, drugs action of barbiturates, structure, synthesis of phento barbital.

Shukla

Unit III

Physical Evaluation of Crude Drug

15hrs

Evaluation of crude drugs : i) Moisture content, ii) Extractive value iii) Volatile content iv) Foreign organic matter v) Micro Scopical evaluation vi) Starch vii) Leaf content (Palisade ratio, Stomatal number and Stomatal index, Vein – islet number and Vein termination number viii) Chromatographic techniques.

Chemical constitution of plant: Introduction i)Carbohydrates (Monosaccharide, Disaccharides, Polysaccharide) ii)Proteins iii)Lipids iv)Waxes v)Volatileoils vi)Steroids vii)Saponis viii)Flavanoides ix) Tannins x) Glycosides xi) Alkaloids.

Unit-IV

Pharmaceutical Quality Control –Fermentation

15hrs

Pyrogenic Testing: Introduction, Methods for Pyrogen testing, Rabbit pyrogen test, Apparatus and diluents, Test animal's temperature recording, Test interpretation, Interferences of the Rabbit Pyrogen test.

Glass Testing: Introduction, USP & NF Glass, Classification Powdered glass test, Procedure, Water attack at 121⁰C procedure.

Densities of Powders: Introduction, Determination of True density, Granule density and Bulk density.

Products based on Fermentation process: Brief idea of Micro organisms, Their structure, Growth and usefulness of Bacteria, Algae, Fungi, Protozoa and Viruses, Factors affecting growth of bacteria – Nutrition, Moisture, Air, Temperature, Ph, Light, Osmotic pressure, Enzyme systems.

Fermentation: General principle of Fermentation processes and product processing.

PRACTICALS:

I.Synthesis of common industrial compounds

1.Preparation of Chloritone

2.4-bromo aniline from acetanilide

3.4-amino benzoic acid from 4-nitrotoluene

II. Thin layer chromatography

Shelany

Annipoorna

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Vals

George

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Suryanpet Dist

COMMISSIONERATE OF COLLEGIATE EDUCATION, T.S, HYDERABAD

BASIC CURRICULAR FORMAT UNDER MODULAR AND CBCS SYSTEM

COLLEGE: NAGARJUNA GOVT.COLLEGE, NALGONDA

COURSE; B.Sc

SUBJECT: INDUSTRIAL CHEMISTRY

YEAR: 2019-20

Semester: VI

Paper : VIII

NAME OF THE MODULE: Cost estimation, Probability Criteria, Management, Human resource

NATURE OF THE MODULE: CORE

MODE OF THE LEARNING: REGULAR

MONTH& WEEK	No. of Hours	Topic	Curricular Activity	Co-Curricular Activity	Remarks
NOV-II	4	Project Cost Estimation	Class-room teaching	Student seminar	
NOV-III	6	Elements of Cost Accounting	Lecture method	Assignment	
NOV-IV	5	Capital formation Depreciation	PPT	Visit to Library	
DEC-I	4	Aspects of Marketing	Lecture method	Student seminar	
DEC-II	4	Probability Criteria	Class-room teaching	Assignment	
DEC-III&IV	4	Target Marketing	Demonstration	Visit to Library	
JAN-I&II	3	Customer relationship management	Lecture method	Group Discussion	
JAN-III	5	Functions of Management	PPT	Student seminar	
JAN-IV	4	Decision marking	Class-room teaching	Visit to Library	
FEB-I	4	Planning Organization	Lecture method	Assignment	
FEB-II	2	Scientific Management theory	PPT	Group Discussion	
FEB-III	4	Selection, Recruitment, Principles of HRM	Class-room teaching	Student seminar	
FEB-IV	4	Training & Development	Lecture method	Visit to Library	
MARCH-I	4	Material Management	Demonstration	Assignment	
MARCH-II	3	Incentive Welfare & Safety	Class-room teaching	Student seminar	

Sharma

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NAGARJUNA GOVERNMENT COLLEGE, NALGONDA

Autonomous Re-accredited by NAAC with "A" Grade

Revised Syllabus for Department of **INDUSTRIAL CHEMISTRY**

B.Sc III Year 6th Semester 8th Paper

60hrs

Unit-I

15hrs

FACTORS INVOLVED IN PROJECT COST ESTIMATION-DEPRECIATION

Unit-II

15hrs

ASPECTS OF MARKETING PROBABILITY CRITERIA

Unit-III

15hrs

**CONCEPT OF SCIENTIFIC MANAGEMENT IN INDUSTRY – FUNCTIONS OF
MANAGEMENT IN INDUSTRY**

Unit – IV

15hrs

MANAGEMENT OF HUMAN RESOURCES

Shukun

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COLLEGE: NAGARJUNA GOVT.COLLEGE, NALGONDA

COURSE; B.Sc SUBJECT: INDUSTRIAL CHEMISTRY YEAR: 2019-20

Semester: VI Paper:VIII

NAME OF THE MODULE: Cost estimation, Probability Criteria, Management, Human resource

NATURE OF THE MODULE: CORE

MODE OF THE LEARING: REGULAR

Unit-I

FACTORS INVOLVED IN PROJECT COST ESTIMATION-DEPRECIATION 15hrs

Factors involved in Project Cost estimate methods, Employed for the estimate of Capital investment, Capital formation, Elements of Cost accounting, Types of costs, Time value of Money, Equivalence. Depreciation, Methods employed – Capital formation depreciation.

Unit-II

ASPECTS OF MARKETING PROBABILITY CRITERIA 15hrs

Some aspects of Marketing, Pricing policy, Probability criteria – Economics of selecting alternatives – Target marketing, Market mix, Advertising, Sales promotion, Customer relationship management.

Unit-III

CONCEPT OF SCIENTIFIC MANAGEMENT IN INDUSTRY – FUNCTIONS OF MANAGEMENT IN INDUSTRY 15hrs

Functions of Management, Decision making, Planning organizing, Directing, Controlling, Scientific Management Theory, Perception, Process of Perception.

Unit – IV

MANAGEMENT OF HUMAN RESOURCES 15hrs

Selection, Recruitment, Principles of HRM, Training and Development, Techniques of Training, Motivation Theory, Material Management, Location of industry, Incentives Welfare & Safety.

PRACTICALS:

Detection of Adulteration in some food stuff:

1. Adulteration of Chili powder
2. Adulteration of Turmeric powder
3. Adulteration of Vanaspathi in pure ghee
4. Adulteration of Tea Powder
5. Adulteration of Edible Oil

Shanmuga
DR. ARUN K. CORNA R.S. EJTJI
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Shanmuga
PRINCIPAL
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Nagarjuna Govt. Degree college, (Autonomous),Nalgonda

Attendance Certificate

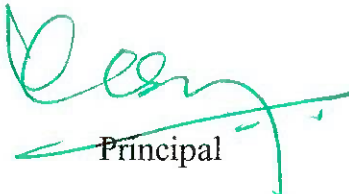
Dr.Anuradha Butti R.S associate Professor of Chemistry, Mahathma Gandhi University,Nalgonda, attended Board of Studies meeting for the year 2019-2020 at our college on 21-10-2019 being a University nominee and Honorary member of Board of Studies for the Department of Industrial Chemistry .


Principal

Nagarjuna Govt. Degree college, (Autonomous),Nalgonda

Attendance Certificate

Dr.A.Sreenivasulu, Assistant Professor in Chemistry, Government Degree College, Huzur Nagar, attended Board of Studies meeting for the year 2019-2020 at our college on 21-10-2019 being a member of Board of Studies for the Department of Industrial Chemistry.


Principal

Nagarjuna Govt. Degree college, (Autonomous),Nalgonda

Attendance Certificate

Dr. V.Shekhar Assistant Professor of Chemistry, K R R Govt Degree College Kodad, attended Board of Studies meeting for the year 2019-2020 at our college on 21-10-2019 being a member of Board of Studies for the Department of Industrial Chemistry.



Principal

RECEIPT

Received an amount of Rs.300=00 (Rupees three hundred only) from the Principal, Nagarjuna Government College, (Autonomous) Nalgonda, towards payment of travelling allowance for attending BOS Meeting in Industrial Chemistry (2019-2020) conducted by Department of Industrial Chemistry on 21-10-2019.

Signature

Dr. A. Srinivasulu,
Asst. Prof. of Chemistry,
GDC, Huzurnagar, Suryapet Dist.

RECEIPT

Received an amount of Rs.1000=00 (Rupees one thousand only) from the Principal, Nagarjuna Government College, (Autonomous) Nalgonda, towards payment of honorarium for attending BOS Meeting in Industrial Chemistry (2019-2020) conducted by Department of Industrial Chemistry on 21-10-2019.

Signature

Dr. A. Srinivasulu,
Asst. Prof. of Chemistry,
GDC, Huzurnagar, Suryapet Dist.

