FATIMA COLLEGE (AUTONOMOUS)

Re-Accredited with 'A++' (CGPA 3.61) by NAAC (Cycle - IV)

Maryland, Madurai- 625 018, Tamil Nadu, India

NAME OF THE DEPARTMENT : CHEMISTRY

NAME OF THE PROGRAMME : B.Sc. CHEMISTRY

PROGRAMME CODE : UACH

ACADEMIC YEAR : 2021 - 2022

Fatima College (Autonomous) Madurai-18

The Minutes of the Board of Studies
Department of Chemistry
To be implemented from 2022-2023 onwards
Convened on 21.3.2022. Convened at 2 p.m
Venue : R3

External Members

S.No.	Name	Designation
1	Dr.S. Murugesan Professor, Dept. of Inorg. Chem. SOC, MKU, Madurai-21	University Nominee 21/3/22
2.	Dr. S. Abraham John Prof. of Chemistry GRI (Deemed to be University) Gandhigram Dindigul	Subject Expert 21/3/22
3.	Dr. A. Mary Imelda Jayaseeli Associate Professor & Head Jeyaraj Annapackiam College for Women Periyakulam	Subject Expert 21/3/2022
4.	Mr. S. Manikandan Senior Research Associate Par Pharma, R&D. Dept. Chengalpattu	Industrialist (Absent)
5.	Miss. B. Shobana Research scholar, Research Dept. of Chemistry, Thiagarajar college, Madurai	Alumna. 21/03/22

6	Dr. N. Malathi	Dean of Academic Affairs
7.	Dr. S. Sukumari	Staff Member
8.	Dr. A. Rajeswari	Staff Member
9.	Dr. B. Vinosha	Staff Member
10	Dr. B. Suganthana	Staff Member
11	Dr. Sr. Arul Mary	Staff Member
12	Dr. V. Arul Deepa	Staff Member
13	Mrs. R.M. Nagalakshmi	Staff Member
14.	Dr. M. Priyadharsani	Staff Member
15	Dr. K.M. Subimol	Staff Member
16	Dr. P. Sylvia Reeta	Staff Member

1. Action Taken Report For 2021-2022 - For M.Sc Chemistry

S.No	Common suggestion offered in the Previous Board	Action Taken for the Academic Year 2021-22
1.	21PGC2SL1 - Research methodology - Plagiarism can be added in unit V	Included in unit V
2.	In EDC paper - Instead of fertilizer Oil Analysis can be included	Fertilizers is removed & Oil unit is included as unit V

Change of Course Title

S.No	Old Course Code	New Course Code	Old Course Title	New Course Title	Need for Change
—	—	—	—	NIL	—

New Courses Introduced

For B.Sc.

S.No	Course Code	Course Title	Relevance to				Scope for			Need for
			L	R	N	G	EMP	ENTRE	SD	Introduction
1.	21C2SL A1	Household Products Marketing		R			EMP	ENTRE		To make Leaves Entrepreneurs

Internal Members.

1. Dr. N. Malathi Dean of Academic Affairs. Staff Member - Dept of Chemistry

N. Malathi
24/03/2022

S.NO.	Name	
1.	Dr. B. Medona [Head of the Dept.]	B. Medona.
2	Dr. S. Sukumari	S.
3.	Dr. A. Rajeswari	
4	Dr. B. Vinosha	
5.	Dr. B. Sugantharaj	
6	Dr. Sr. Arul Mary	
7	Dr. V. Arul Deepa	
8.	Mrs. R.M. Nagalakshmi	
9.	Dr. M. Priyadharsini	
10.	Dr. K.M. Subimol	
11.	Dr. P. Silviya Reeka.	

Members Present.

1.	Dr. B. Medona	Head of the Department
2.	Dr. S. Murugesan, Professor, Dept of Inorganic Chemistry, SOC, MKU	University Nominee
3	Dr. S. Abraham John, Professor, Dept of Chemistry, GRI, Dindigul	Subject Expert
4	Dr. A. Mary Imelda Jayaseeli, Head & Associate Prof. of Chemistry JAC, Periyakulam	Subject Expert
5	Miss. B Shobana Research Scholar, Research Dept of Chemistry Thiagarajar College, Madurai	Alumna.

For M. Sc.

S.No	Course Code	Course Title	Relevance to				Scope for			Need for Introduction
			L	R	N	G	EMP	EMRE	SD	
1.	21PGC2 SL1	Research Methodology				G	EMP		SD	offered to the advanced Learners
2.	21C1EDC / 21C2EDC	Analysis of Soil, Water Food, Cosmetics And oil.			N		EMP		SD	As per the Recommendation of course Teachers

Revised Courses -

S.No	Course code	Course Title	No. & Title of units Revised	% of Revision	Need for Revision	Relevance to				Scope for		
						L	R	N	G	EMP	ENTRE	SD
-	-	-	NIL	-	-	-	-	-	-	-	-	-

2. Updation of Open Educational Resources in the list of references of each course.

S.No	Course Code	Course Title	Details of updation
-	-	-	NIL

3 Revision of Courses

FOR B.SC.

S.No	Course code	Course Title	No. & Title of units Revised with the Revised Content	% of Revision	Need for Revision	Relevance to				Scope for		
						L	R	N	G	EMP	ENTRE	SD
1.	19C4 SB2	NEW TITLE Dyes and Pigments' Old Title Naturals & Synthetic Dyes	Unit-IV 2-Pigments Title 'Instead of Structure of Dyes' Revised content - Anthocyanin Flavones Phthalocyanin, Carotenoids & Chlorophyll	20%	As per the Recommendation of Course Teacher			N		EMP		
2.	19C5CC 16	NEW TITLE "Conventional & Green Synthesis OLD TITLE Green chemistry Practicals [Lab Course]	Under Greener methods of Preparation of organic compounds - Preparation of Aspirin using MW, use of greener Nitrating & Brominating Mixture are used for Nitration & Bromination - Included. Under Conventional methods - Three New Experiments to be included.	50%	To include Experiments in the revised Lab course, To increase the use of Microwave radiation & Greener Reagents				G	EMP		SD

For M.Sc.

S.No	Course Code	Course Title	No. & Title of units revised with the revised content	% of Revision	Relevance to L	R	N	G	Scope for Emp	Entre	SD
1.	19PG4 CI7	Physical Chemistry -IV	Unit I, II & III Title - to be changed as Rotational & Vibrational Spectroscopy, Electronic Spectroscopy & Spin Resonance & Mossbauer spectroscopy with minor Revisions in unit I, II & V In unit III - NMR Spectroscopy - Frequency, Instrumentation & Comparison of NMR with ESR are Included.	15%				G	Emp	Entre	
2.	19PG4 CE3	Analytical Chemistry	Unit I Title for - Error Analysis Unit II - Chromatography Unit V - Computers in Chemistry with minor Changes in Content. Unit III - DTA to be Included.	10%				G	Emp	Entre	SD
3.	19PG1C5	New Title Organic Qualitative Analysis & Preparation -I Old Title Organic Qualitative Analysis	Spectral Analysis of the Synthesized Compounds Using IR and UV are included.	10%			N		Emp		SD
4	19PG2C10	New Title Organic Estimation & Preparation -II Old Title. Organic Estimation & Preparation -II *Quantitative Analysis	Under Estimation - Estimation of Phenol & Aniline are Included instead of Estmn. Of Glucose by Eynon-Lane Method. Under preparation - Spectral Analysis of the Synthesized Compounds using UV & IR are included.	20%			N		Emp		SD

4 New Courses Introduced - For B.Sc.

S.No	Course code	Course Title	Relevance to L	R	N	G	Scope for Emp	Entre	SD	Need for Introduction
1.	22N4SLC4	Textile Colouration			N		Emp	Entre		To make Learners Entrepreneur

For M.Sc

S.No	Course code	Course Title	Relevance to				Scope for			Need for Introduction
			L	R	N	G	EMP	ENTRE	SD	
1.	22PGC4SL3	Batteries and its Application			N		EMP	ENTRE		To increase Employability & Entrepreneurship.

5 Introduction of Purely Skill Embedded Certificate Value added Course

S.No	Course Code	Course Title	MOU with Industry/ Organisation	Skills Sharpened	Course outcome
1.	22PGVACC1	Certificate course on Instrumentation in IR	-	Analytical Skill & Employability	To produce Analytical chemist.
2.	22PGVACC2	Certificate Course on Instrumentation in UV	-		
3.	22PGVACC3	Certificate course on Electrochemical Techniques	-		

6 Approval of Ph.D. Course work Syllabus - NIL
7 Rubrics for Internship/Project - NA
Details of Proposed MOU - Planned to have MOU with Materials Research Centre (MRC) Coimbatore.

Other Suggestions	Commendations
1. No need to have External Exam for Self Learning courses.	1. OUR UG & PG Syllabus is Very Good but too heavy.
2. In 19PG4CM - Unit I - Absorption & Emission LASER, EMR Interaction, Einstein Coefficient Can be deleted.	

Dr. B. Medona Head of the Department

21/3/22 Dr. S. Murugesan University Nominee

21/3/22 Dr. S. Abraham John Subject Expert

21/3/2022 Dr. A. Mary Imelda Jayaseeli Subject Expert

21/03/2022 Ms. B. Shobana Alumna

Name of	Signature
Dean of Academic affairs Dr. N. Malathi	21/03/2
Staff Members	
Dr. S. SUKumari	S.
Dr. A. Rajeswari	
Dr. B. Vinosha	
Dr. B. Sugarthana	
Dr. Sr. Arul Mary	
Dr. V. Arul Deepa	
Mrs. R.M. Nagalakshmi	
Dr M. Priyadharsani	
Dr. K.M. Subimol	
Dr P. Sylvia Reeta	

VISION of the department

To transform the students entrusted in our hands into competent chemists.

MISSION OF THE DEPARTMENT

To Transfer the knowledge of chemistry with values to create globally competent chemists.

To Promote scientific enquiry and inculcate research. To

inculcate in students the skills of problem solving.

To create in them the awareness about ecological concerns.

To train to adopt cost effective and eco-friendly green chemistry methodologies.

PROGRAMME EDUCATIONAL OBJECTIVES (PEO)

A graduate of B.Sc. Chemistry programme after five years will

be

PEO 1	Our graduates will be academic, digital and information literates, creative, inquisitive, innovative and desirous for the "more" in all aspects
PEO 2	They will be efficient individual and team performers, exhibiting progress, flexibility, transparency and accountability in their professional work
PEO 3	The graduates will be effective managers of all sorts of real – life and professional circumstances, making ethical decisions, pursuing excellence within the time framework and demonstrating apt leadership skills

PEO 4	They will engage locally and globally evincing social and environmental stewardship demonstrating civic responsibilities and employing right skills at the right moment.

GRADUATE ATTRIBUTES (GA)

Fatima College empowers her women graduates holistically. A Fatimite achieves all-round empowerment by acquiring Social, Professional and Ethical competencies. A graduate would sustain and nurture the following attributes:

I. SOCIAL COMPETENCE	
GA 1	Deep disciplinary expertise with a wide range of academic and digital literacy
GA 2	Hone creativity, passion for innovation and aspire excellence
GA 3	Enthusiasm towards emancipation and empowerment of humanity
GA 4	Potentials of being independent
GA 5	Intellectual competence and inquisitiveness with problem solving abilities befitting the field of research
GA 6	Effectiveness in different forms of communications to be employed in personal and professional environments through varied platforms
GA 7	Communicative competence with civic, professional and cyber dignity and decorum
GA 8	Integrity respecting the diversity and pluralism in societies, cultures and religions

GA 9	All – inclusive skill sets to interpret, analyse and solve social and environmental issues in diverse environments
GA 10	Self awareness that would enable them to recognise their uniqueness through continuous self-assessment in order to face and make changes building on their strengths and improving their weaknesses
GA 11	Finesse to co-operate exhibiting team-spirit while working in groups to achieve goals
GA 12	Dexterity in self-management to control their selves in attaining the kind of life that they dream for
GA 13	Resilience to rise up instantly from their intimidating setbacks
GA 14	Virtuosity to use their personal and intellectual autonomy in being life-long learners
GA 15	Digital learning and research attributes
GA 16	Cyber security competence reflecting compassion, care and concern towards the marginalised
GA 17	Rectitude to use digital technology reflecting civic and social responsibilities in local, national and global scenario
II. PROFESSIONAL COMPETENCE	
GA 18	Optimism, flexibility and diligence that would make them professionally competent
GA 19	Prowess to be successful entrepreuners and become employees of trans-national societies
GA 20	Excellence in Local and Global Job Markets
GA 21	Effectiveness in Time Management
GA 22	Efficiency in taking up Initiatives
GA 23	Eagerness to deliver excellent service

GA 24	Managerial Skills to Identify, Commend and tap Potentials
III. ETHICAL COMPETENCE	
GA 25	Integrity and be disciplined in bringing stability leading a systematic life promoting good human behaviour to build better society
GA 26	Honesty in words and deeds
GA 27	Transparency revealing one's own character as well as self-esteem to lead a genuine and authentic life
GA 28	Social and Environmental Stewardship
GA 29	Readiness to make ethical decisions consistently from the galore of conflicting choices paying heed to their conscience
GA 30	Right life skills at the right moment

PROGRAMME OUTCOMES (PO)

On completion of B.Sc. Chemistry programme, the learners would be able to

PO 1	Apply acquired scientific knowledge to solve complex issues.
PO 2	Attain Analytical skills to solve complex cultural, societal and environmental issues.
PO 3	Employ latest and updated tools and technologies to analyse complex issues.
PO 4	Demonstrate Professional Ethics that foster Community, Nation and Environment Building Initiatives.

PROGRAMME SPECIFIC OUTCOMES (PSO)

On completion of B.Sc. Chemistry programme, the learners would be able to

PSO 1	Thorough understanding of all basic concepts and theories pertaining to Chemistry
PSO 2	A comprehensive view of bonding,structure,reactivity and stability of chemical species.
PSO 3	An overall perspective view of physical principles that govern all physical and chemical transformations .
PSO 4	Basic knowledge about instrumentation involving UV,IR,ESR and NMR
PSO 5	Hands on experience of laboratory experiments both qualitative and quantitative
PSO 6	Project undertaking enables presentation of results and strengthens the learners in lab to land procedures that nurture societal need and environmental protection.
PSO 7	Diversified informative sources that equip learners to enter varied fields
PSO 8	Additional in-puts of using appropriate software related to Chemistry and chemical calculations

20%

II B.Sc CHEMISTRY

SEMESTER –IV

For those who joined in 2019 onwards

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS/WEEK	CREDITS
UACH	19C4SB2	NATURAL AND SYNTHETIC DYES	Skill Based	2	2

COURSE DESCRIPTION

This course gives an introduction to Natural and Synthetic Dyes and also highlights the uses of dyes in our day today life.

COURSE OBJECTIVES

- Recall the defintion of dyes
- Understand the source of colour in different colouring chemicals available in market
- Apply the various methods tosynthesisethe dyes.
- Analyse the clour forming groups in vairous types of dyes
- Examine the applications of dyes in various industries

UNIT I THEORY OF DYES (6 HRS.)

Color and dyes: Color sensation, Dyes and dying color and chemical constitution- Witt theory and Modern theory of dyes. Nomenclature of dyes: Valance bond theory of color.

UNIT –II CLASSIFICATION OF DYES-I (6 HRS.)

Classification according to application - direct or substantive dyes, mordent dyes, vat dyes, Ingrain or developed dyes, Disperse dyes, sulphur dyes, reactive dyes, oil and spirit soluble dye

UNIT –III CLASSIFICATION OF DYES-II (6 HRS.)

Classification according to chemical structure: a) Nitro and Nitroso dyes. b) Tripheyl methane dye malachite green, pararosaniline, crystal violet and its applications. c) Azo dyes – aniline yellow, butter yellow, methyl orange, methyl red, resorcin yellow and congo red. d) Phthalein and Xanthen – phenophthalein, fluorescein, eosin and rhodamine B.

UNIT –IV STRUCTURE OF DYES (6 HRS.)

Structure of Indigo, Alizarin, Raw material for the manufacture of dyes, non textile uses of dyes.

UNIT –V APPLICATIONS OF DYES (6 HRS.)

Applictions of dyes- in food industry, cosmetics, textiles and non textile industries

References

1. Jeyashree Ghosh, Fundamental concepts of Applied Chemistry, S.Chand, 2006

2. B.A. Yagodin ,Agricultural Chemistry, Mir Publishers (Moscow), 1976.

COURSE CONTENTS & LECTURE SCHEDULE:

Module No.	Topic	No. of Lectures	Teaching Pedagogy	Teaching Aids
UNIT -1 THEORY OF DYES				
1.1	Soils- Introduction, Composition of soil Color and dyes: Color sensation	1	Chalk & Talk	Black Board

1.2	Dyes and dying color and	1	Chalk &	Black

Module No.	Topic	No. of Lectures	Teaching Pedagogy	Teaching Aids
	chemical constitution		Talk	Board
1.3	Witt theory and Modern theory of dyes,	2	Chalk & Talk	PPT & White board
1.4	Nomenclature of dyes: Valance bond theory of color.	2	Chalk & Talk	Black Board
	UNIT-2 CLASSIFICATION OF DYES-I			
2.1	direct or substantive dyes, mordent dyes, ,	2	Chalk & Talk	Black Board
2.2	mordent dyes, vat dyes, Ingrain or developed dyes	2	Chalk & Talk	PPT & White board
2.3	sulphur dyes, reactive dyes,	1	Chalk & Talk	Black Board
2.4	oil and spirit soluble dye ,	1	Chalk & Talk	Black Board
	UNIT -3CLASSIFICATION OF DYES-II			
3.1	Nitro and Nitroso dyesand Tripheyl methane dye- malachite green, pararosaniline, crystal violet	2	Chalk & Talk	Black Board
3.2	Azo dyes – aniline yellow, butter yellow, methyl orange, methyl red, resorcin yellow and congo red	2	Chalk & Talk	PPT & White board
3.3	Phthalein and Xanthen – phenophthalein, fluorescein, eosin and rhodamine-B	2	Chalk & Talk	Black Board
	UNIT -4STRUCTURE OF DYES			
4.1	Indigo	2	Chalk &	PPT & White

Module No.	Topic	No. of Lectures	Teaching Pedagogy	Teaching Aids
			Talk	board
4.2	Alizarin	2	Chalk &Talk	Black Board
4.3	Raw material for the manufactur of dyes	2	Chalk & Talk	Black Board
UNIT-V APPLICATIONS OF DYES				
5.1	Dyesin food industry	2	Chalk & Talk	PPT
5.2	Dyes in cosmetics, textiles	2	Chalk & Talk	PPT
5.3	Dyes in non textile industries	2	Chalk & Talk	PPT

Levels	C1	C2	C3	C4	C5	Total Scholastic Marks	Non Scholastic Marks C6	CIA Total	% of Assessment
	T1 10 Mks.	T2 10 Mks.	Quiz 5 Mks.	Assignment 5 Mks	OBT/PPT 5 Mks	35 Mks.	5 Mks.	40Mks.	
K1	2	2	-	-	-	4	-	4	10 %
K2	2	2	5	-	-	9	-	9	22.5 %
K3	3	3	-	-	5	11	-	11	27.5 %
K4	3	3	-	5	-	11	-	11	27.5 %
Non Scholastic	-	-	-	-	-		5	5	12.5 %
Total	10	10	5	5	5	35	5	40	100

									%

CIA	
Scholastic	**35**
Non Scholastic	**5**
	40

- ✓ **The levels of CIA Assessment based on Revised Bloom's Taxonomy are :**

  K1- Remember, **K2-**Understand, **K3-**Apply, **K4-**Analyse

EVALUATION PATTERN

	SCHOLASTIC				NON - SCHOLASTIC	MARKS		
C1	**C2**	**C3**	**C4**	**C5**	**C6**	**CIA**	**ESE**	**Total**
10	**10**	**5**	**5**	**5**	**5**	**40**	**60**	**100**

COURSE OUTCOMES

On the successful completion of the course, students will be able to:

NO.	COURSE OUTCOMES	KNOWLEDGE LEVEL (ACCORDING TO REVISED BLOOM'S TAXONOMY)	PSOs ADDRESSED

CO 1	know and comprehend the principle and theories of dyes	K1, K2, K3 & K4	PSO1& PSO2
CO 2	identify the chromophoric groups and auxochromes in dyes	K1, K2, K3 & K4	PSO3
CO 3	classify the of dyes whether natural or synthetic	K1, K2, K3 & K4	PSO5
CO 4	Predict the structure of dyes	K1, K2, K3 & K4	PSO7
CO 5	recognise the applications of dyes in various industries	K1, K2, K3 & K4	PSO7

Mapping of C0s with PSOs

CO/ PSO	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO1	**3**	**3**	**2**	**1**	**1**	**1**	**1**	**1**	**1**
CO2	**2**	**1**	**3**	**1**	**1**	**1**	**1**	**1**	**1**
CO3	**2**	**1**	**1**	**1**	**3**	**1**	**1**	**1**	**1**
CO4	**2**	**1**	**1**	**1**	**1**	**1**	**3**	**1**	**1**
CO5	**2**	**1**	**1**	**1**	**1**	**1**	**3**	**1**	**1**

Mapping of C0s with Pos

CO/ PSO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	3	2	2	2	2	3	3
CO2	2	3	2	2	2	3	3
CO3	2	2	3	2	2	3	3
CO4	3	2	2	2	2	3	3
CO5	3	2	2	2	2	3	3

Note: ♦ Strongly Correlated – **3** ♦ Moderately Correlated – **2**

♦ Weakly Correlated -**1**

COURSE DESIGNER:
Mrs.RM.Nagalakshmi

HOD'S Signature

II B.Sc CHEMISTRY

SEMESTER –IV

For those who joined in 2022 onwards

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS/WEEK	CREDITS
UACH	19C4SB2	DYES AND PIGMENTS	Skill based	2	2

COURSE DESCRIPTION

This course gives an introduction to Natural and Synthetic Dyes and pigments and also highlights the uses of dyes and pigments in our day today life.

COURSE OBJECTIVES

- Recall the definition of dyes
- Understand the source of colour in different colouring chemicals available in market
- Apply the various methods to synthesise the dyes.
- Analyse the colour forming groups in various types of dyes
- Examine the applications of dyes in various industries

UNIT I THEORY OF DYES (6 HRS.)

Color and dyes: Colour sensation, Theory of colour and chemical constitution- Witt theory and Modern theory of dyes. Nomenclature of dyes: Valance bond theory of colours.

UNIT –II CLASSIFICATION OF DYES-I (6 HRS.)

Classification according to application - direct or substantive dyes, mordant dyes, vat dyes, Ingrain or developed dyes, Disperse dyes, sulphur dyes, reactive dyes, oil and spirit soluble dye

UNIT –III CLASSIFICATION OF DYES-II (6 HRS.)

Classification according to chemical structure: a) Nitro and Nitroso dyes. b) Tripheyl methane dye malachite green, parar osaniline, crystal violet c) Azo dyes – aniline yellow, butter yellow, methyl orange, methyl red, resorcin yellow and congo red. d) Phthalein and

Xanthen – phenophthalein, fluorescein, eosin and rhodamine B.

UNIT –IV PIGMENTS (6 HRS.)

Introduction- chemical composition,structure and applications of Anthocyanins,Flavones,Phthalocyanins,Carotenoids and Chlorophyll.

UNIT –V APPLICATIONS OF DYES (6 HRS.)

Applictions of dyes- in food industry, cosmetics, textiles and non textile industries

References

1.Jeya shree Ghosh, Fundamental concepts of Applied Chemistry, S.Chand, 2006

2. B.A.Yagodin ,Agricultural Chemistry, Mir Publishers (Moscow), 1976.

3.M.K.Jain and S.C.Sharma ,Modern organic chemistrty,Vishal publishers,1967

COURSE CONTENTS & LECTURE SCHEDULE:

Module No.	Topic	No. of Lectures	Teaching Pedagogy	Teaching Aids
UNIT -1 THEORY OF DYES				
1.1	Introduction, Colour and dyes: Colour sensation	1	Chalk & Talk	Black Board
1.2	Theory of colour and chemical constitution -Witt theory	1	Chalk & Talk	Black Board
1.3	Modern theory of dyes	2	Chalk & Talk	PPT & White board
1.4	Nomenclature of dyes: Valance bond theory of colour.	2	Chalk & Talk	Black Board
UNIT-2 CLASSIFICATION OF DYES-I				
2.1	direct or substantive dyes,	2	Chalk &	Black

	mordent dyes, ,		Talk	Board
2.2	mordant dyes, vat dyes, Ingrain or developed dyes	2	Chalk & Talk	PPT & White board
2.3	sulphur dyes, reactive dyes,	1	Chalk & Talk	Black Board
2.4	oil and spirit soluble dye ,	1	Chalk & Talk	Black Board
UNIT -3 CLASSIFICATION OF DYES-II				
3.1	Nitro and Nitroso dyes and Tripheyl methane dye- malachite green, para rosaniline, crystal violet	2	Chalk & Talk	Black Board
3.2	Azo dyes – aniline yellow, butter yellow, methyl orange, methyl red, resorcin yellow and congo red	2	Chalk & Talk	PPT & White board
3.3	Phthalein and Xanthen – phenolphthalein, fluorescein, eosin and rhodamine-B	2	Chalk & Talk	Black Board
UNIT -4 PIGMENTS				
4.1	Introduction and Anthocyanins	2	Chalk & Talk	PPT & White board
4.2	Flavones,Phthalocyanins	2	Chalk &Talk	Black Board
4.3	Carotenoids and Chlorophyll	2	Chalk & Talk	Black Board
UNIT-V APPLICATIONS OF DYES				
5.1	Dyes in food industry	2	Chalk & Talk	PPT
5.2	Dyes in cosmetics, textile industries	2	Chalk & Talk	PPT
5.3	Dyes in non textile industries	2	Chalk &	PPT

			Talk	

Levels	C1	C2	C3	C4	Total Scholastic Marks	Non Scholastic Marks C5	CIA Total	% of Assessment
	Session - wise Average 5 Mks.	Better of W1, W2 5 Mks	M1+M2 5+5=10 Mks.	MID-SEM TEST 15 Mks	35 Mks.	5 Mks.	40Mks.	
K1	**5**	**-**	**-**	**2 ½**	**7.5**	-	**7.5**	18.75 %
K2	**-**	**5**	**4**	**2 ½**	**11.5**	-	**11.5**	28.75 %
K3	**-**	**-**	**3**	**5**	**8**	-	**8**	20 %
K4	**-**	**-**	**3**	**5**	**8**	-	**8**	20 %
Non Scholastic	**-**	**-**	**-**	-		**5**	**5**	12.5 %
Total	**5**	**5**	**10**	**15**	**35**	**5**	**40**	**100 %**

CIA	
Scholastic	**35**
Non Scholastic	**5**
	40

- ✓ **All the course outcomes are to be assessed in the various CIA components.**
- ✓ **The levels of CIA Assessment based on Revised Bloom's Taxonomy for I UG are :**

K1- Remember, **K2**-Understand, **K3**-Apply, **K4**-Analyse

- ✓ **The I UG course teachers are requested to start conducting S1, W1, M1,**

in due intervals of time.

EVALUATION PATTERN

SCHOLASTIC				NON - SCHOLASTIC	MARKS		
C1	C2	C3	C4	C5	CIA	ESE	Total
5	10	15	5	5	40	60	100

C1 – Average of Two Session Wise Tests

C2 – Average of Two Monthly Tests

C3 - Mid Sem Test

C4 – Best of Two Weekly Tests

C5 – Non - Scholastic

COURSE OUTCOMES

On the successful completion of the course, students will be able to:

NO.	COURSE OUTCOMES	KNOWLEDGE LEVEL (ACCORDING TO REVISED BLOOM'S TAXONOMY)	PSOs ADDRESSED
CO 1	know and comprehend the principle and theories of dyes	K1 &K2	PSO2 & PS04
CO 2	identify the chromophoric groups and auxochromes in dyes	K1	PSO1
CO 3	classify the of dyes whether natural or synthetic	K2	PSO3

CO 4	Predict the of structure of chlorophyll	K4	PSO2
CO 5	recognise the applications of dyes in various industries	K3	PSO2

Mapping of C0s with PSOs

CO/ PSO	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9
CO1	3	3	2	1	1	1	1	1	1
CO2	2	1	3	1	1	1	1	1	1
CO3	2	1	1	1	3	1	1	1	1
CO4	2	1	1	1	1	1	3	1	1
CO5	2	1	1	1	1	1	3	1	1

Mapping of C0s with Pos

CO/ PSO	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	3	2	2	2	2	3	3
CO2	2	3	2	2	2	3	3
CO3	2	2	3	2	2	3	3
CO4	3	2	2	2	2	3	3
CO5	3	2	2	2	2	3	3

Note: ♦ Strongly Correlated – **3** ♦ Moderately Correlated – **2**

♦ Weakly Correlated -**1**

COURSE DESIGNER:
Mrs.RM.Nagalakshmi

HOD'S Signature