VEER NARMAD SOUTH GUJARAT UNIVERSITY
M.Sc. Semester-III (ORGANIC CHEMISTRY)
SYLLABUS TO BE EFFECTIVE FROM JUNE 2019

PAPER-IV (DYES AND INTERMEDIATES-I)

Max. Marks: 100 (External – 70 + Internal – 30) **TotalPeriods:45**

UNIT-I ANTHRAQUINONE DYES **(12 Periods)**
Vat Dyes and Solubilized Vat dyes, Acid dyes, Mordant dyes and dyes for cellulose acetate.
Synthesis of only the following:
Indanthrene Orange 7RK, Indanthrene Yellow FFRK, Indanthrene Khakhi 2G, Indanthrene Orange FFRK, Indanthrene Yellow 4GK, Indanthrene Scarlet B, Caledon Jade Green XBN, Anthracene Blue SWX, Indanthrene Brilliant Orange GR, Celliton Fast Blue FFG.

UNIT-II **(11 Periods)**
General nature, classification, structural variation, synthesis and application of fibres of the following classes of dyes:
(i)Reactive dyes
(ii)Triphenylmethane dyes (TPM)
(iii)Acid dyes
Synthesis of only the following:
Procion Brilliant Blue MR, Procion Brilliant Red H-3B, Remazol Brilliant Blue R, Malachite Green, Crystal Violet, Acid Yellow 73, Acid Red 1, Acid Black 24

UNIT-III **(11 Periods)**
General nature, classification, structural variation, synthesis and application of fibres of the following classes of dyes:
(i)Disperse dyes
(ii)Indigoid and Thio-indigoid dyes
(iii)Cationic dyes
Synthesis of the following:
Disperse Yellow 16, Disperse Blue 14, Celliton Fast Yellow 7G, Ciba Blue 2B, Indanthrene Brilliant Pink R, Bismarck Brown, Chrysoidine Y, Methylene Blue, Acridine Yellow G, Disperse Orange 29

UNIT-IV **(11 Periods)**
General nature, classification, structural variation, synthesis and application of fibres of the following classes of dyes:
(A) Sulphur dyes
(B) Ecology and toxicity of dyes with reference to textile dyes, food colours, benzidine etc.
(C) Medicinal dyes and biological stainingagents
(D) High tech application of dyes: Liquid crystal display (LCD), Laser dyes, Photochromic dyes, Thermochromic dyes, dye sensitizer solar cells.

Reference Books Recommended

1. The chemistry of synthetic Dyes, Vol. I to VII by Venkataraman, Academic Press, New York.
2. Chemistry of Synthetic Dyes & Pigments by Lubs.
3. Dyes and their intermediates by E. N. Abrahart.
4. Handbook of synthetic dyes and pigments, Vol. I & II by K. M. Shah.
5. Industrial Dyes by Klans Hunger, Germany by Wiley-VCH.
6. Development in the Chemistry and technology of Organic Dyes by J.Griffiths, Blackwell Sci. Pub., Oxford, London.
7. Principles of colour Technology by Fred W. Billmeyer and Max Saltzman, John Wiley & Sons.
8. Advance in colour chemistry, series vol.-3, Modern colourants: Synthesis and structure, edited by A.T.Peters and H.S. Freeman, Blackie Academic & Professional(1995).
9. Colour chemistry: Synthesis, properties and applications of organic dyes and pigments, Heinrich Zollinger VCH, Germajy(1987).
10. Organic Chemnistry in Colour V., P.F.Gordan, P. Gregory, Spinger-Verlag(1983).
11. Textile Auxiliaries, J.W. Batty
12. The production and applications fluorescent brightening agents, Milos Zahradnik, John Wiley & Sons (1982).
13. Chemistry of Dyes and Principles of dyeing-V.A. Shenai
14. Synthetic dyes- G.R. Chatwal
15. Critical reports on Applied chemistry, Vol-7, Developments in chemistry and Technology of organic dyes, Edited by : J. Griffths, Blackwell