Curriculum Plan (Odd Semester 2024-25)

Teacher Name: **Dr. Geeta Devi Yadav**

Course: B.Sc. (H) Chemistry, NEP-UGCF, Semester III year

Paper Name: Applied Organic Chemistry (DSE) (2 periods per week)

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| **S. No.** | **Contents** | **Allocation**  **of Lectures** | **Month wise**  **schedule to be followed** | **Assignments/ Presentations etc** |
| 1. | Nomenclature of commercial dyes with at least one example. Suffixes - G, O, R, B, 6B, L, S; colour index and colour index number. Classification of dyes based on structure and application; Chemistry of dyeing. Synthesis and applications of the following types of dyes: Azo dyes - Methyl orange, Congo red; Triphenyl methane dyes-Malachite green, Rosaniline and Crystal violet; Phthalein Dyes - Phenolphthalein; Natural dyes - Structure elucidation and synthesis of Alizarin and Indigotin; Edible Dyes (natural and synthetic) with examples and effect of synthetic food colors on health. | **7** | **First week August – Fourth week August** | **Syllabus overview**  **Reference books suggestions**  **Question Solving Doubt Session Class Test** |
| 2. | **Natural Product Chemistry**  **Terpenes:** Introduction, occurrence, classification, uses, isoprene and special isoprene rule; structure elucidation, synthesis and industrial application of citral. **Alkaloids:** Introduction, occurrence, classification, uses, general structural features, general methods for structure elucidation including Hoffmann’s exhaustive methylation and Emde’s method: structure elucidation, synthesis and physiological action of Nicotine. | **12** | **First week September – Fourth week September** | **Question-Solving**  **Doubt Session University Papers Discussion** |

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| 3. | **Steroids:** Introduction, occurrence, structure, Diel’s hydrocarbon, the nomenclature of steroid hydrocarbons, structure and biological functions of the following steroids- Cholesterol, Sex Hormones (Estrogen, androgen and progesterone), Adrenocortical hormones (Cortisone and cortisol) and Ergosterol (antirachitic effect). |  | **First week October – First week November** | **Question-Solving Doubt Session**  **University Papers Discussion**  **Assignment Distribution** |
| 4. | **Pharmaceutical Compounds:**  Introduction, classification; Synthesis, uses, mode of action and side effects of the following drugs: Antipyretics -Paracetamol; Analgesics- Ibuprofen; Antimalarials - Chloroquine; Antitubercular drugs - Isoniazid. An elementary treatment of Antibiotics and detailed study of chloramphenicol including mode of action. Structure and medicinal uses of curcumin (haldi), azadirachtin (neem), vitamin C and antacid (ranitidine) | **14** | **Second week November - Third week November** | **Question-Solving Doubt Session**  **University Papers Discussion** |

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