

Course Structure of the Courses for P.G. Programme in Chemistry as per CBCS-2015

SEMESTER-I

1. Core Courses (CR):

| Course No. | Title | Contact hours/Week | No. of Credits |
|------------|--------------------------------|--------------------|----------------|
| CH15101CR | Inorganic Chemistry | (02L + 01T) | 03 |
| CH15102CR | Organic Chemistry | (02L + 01T) | 03 |
| CH15103CR | Physical Chemistry | (02L + 01T) | 03 |
| CH15104CR | Laboratory Course in Chemistry | 09 Lab hours | 03 |

2. Discipline Centric Elective (DCE):

| Course No. | Title | Contact hours/Week | No. of Credits |
|------------|-------------------------------------|--------------------|----------------|
| CH15104DCE | Bonding in Inorganic Compounds | (01L + 01T) | 02 |
| CH15105DCE | IR, Raman & Electronic Spectroscopy | (01L + 01T) | 02 |
| CH15106DCE | Mathematics for Chemists | (01L + 01T) | 02 |

3. Generic Elective Courses (GE):

| Course No. | Title | Contact hours/Week | No. of Credits |
|------------|------------------------------------|--------------------|----------------|
| CH15107GE | Chemistry of the Environment | (01L + 01T) | 02 |
| CH15108GE | Surfactants and their Applications | (01L + 01T) | 02 |
| CH15109GE | Chemistry of Bio-molecules | (01L + 01T) | 02 |

4. Open Elective Courses (OE):

| Course No. | Title | Contact hours/Week | No. of Credits |
|------------|-------------------------------|--------------------|----------------|
| CH15110OE | Chemistry in Everyday Life- I | (01L + 01T) | 02 |

SEMESTER-II

1. Core Courses (CR):

| Course No. | Title | Contact hours/Week | No. of Credits |
|------------|--------------------------------|--------------------|----------------|
| CH15201CR | Inorganic Chemistry | (02L + 01T) | 03 |
| CH15202CR | Organic Chemistry | (02L + 01T) | 03 |
| CH15203CR | Physical Chemistry | (02L + 01T) | 03 |
| CH15204CR | Laboratory Course in Chemistry | 09 Lab hours | 03 |

2. Discipline Centric Elective (DCE):

| Course No. | Title | Contact hours/Week | No. of Credits |
|------------|--|--------------------|----------------|
| CH15204DCE | Chromatography & Analytical Techniques | (01L + 01T) | 02 |
| CH15205DCE | NMR & ESR Spectroscopy | (01L + 01T) | 02 |
| CH15206DCE | Solid State Chemistry | (01L + 01T) | 02 |

3. Generic Elective Courses (GE):

| Course No. | Title | Contact hours/Week | No. of Credits |
|------------|---|--------------------|----------------|
| CH15207GE | Metal-ions in Living Systems | (01L + 01T) | 02 |
| CH15208GE | Soil Chemistry and Environmental Analyses | (01L + 01T) | 02 |
| CH15209GE | Separation Techniques | (01L + 01T) | 02 |

4. Open Elective Course (OE):

| Course No. | Title | Contact hours/Week | No. of Credits |
|------------|--------------------------------|--------------------|----------------|
| CH15210OE | Chemistry in Everyday Life- II | (01L + 01T) | 02 |

SEMESTER-III

1. Core Courses (CR):

| Course No. | Title | Contact hours/Week | No. of Credits |
|------------|--------------------------------|--------------------|----------------|
| CH15301CR | Inorganic Chemistry | (02L + 01T) | 03 |
| CH15302CR | Organic Chemistry | (02L + 01T) | 03 |
| CH15303CR | Physical Chemistry | (02L + 01T) | 03 |
| CH15304CR | Laboratory Course in Chemistry | 09 Lab hours | 03 |

2. Discipline Centric Elective (DCE):

| Course No. | Title | Contact hours/Week | No. of Credits |
|------------|--|--------------------|----------------|
| CH15304DCE | Symmetry & group Theory | (01L + 01T) | 02 |
| CH15305DCE | Applications of Spectroscopic Techniques | (01L + 01T) | 02 |
| CH15306DCE | Non-Equilibrium Thermodynamics | (01L + 01T) | 02 |

3. Generic Elective (GE):-

| Course No. | Title | Contact hours/Week | No. of Credits |
|------------|--|--------------------|----------------|
| CH15307GE | Industrial Pollution & Green Chemistry | (01L + 01T) | 02 |
| CH15308GE | Bio-Organic Chemistry | (01L + 01T) | 02 |
| CH15309GE | Bio-Physical Chemistry | (01L + 01T) | 02 |

4. Open Elective Course (OE):

| Course No. | Title | Contact hours/Week | No. of Credits |
|------------|-----------------------|--------------------|----------------|
| CH15310OE | Philosophy of Science | (01L + 01T) | 02 |

SEMESTER-IV

1. (i) Core Courses (CR): (INORGANIC SPECIALIZATION):

| Course No. | Title | Contact hours/Week | No. of Credits |
|------------|---|--------------------|----------------|
| CH15401CR | Organo-Transition Metal Chemistry | (03L + 01T) | 04 |
| CH15402CR | Photo Inorganic Chemistry | (03L + 01T) | 04 |
| CH15403CR | Advanced lab. Course in Inorganic Chemistry | 12 Lab hours | 04 |

(ii) Core Courses (CR): (ORGANIC SPECIALIZATION):

| Course No. | Title | Contact hours/Week | No. of Credits |
|------------|---|--------------------|----------------|
| CH15404CR | Heterocyclic Chemistry | (03L + 01T) | 04 |
| CH15405CR | Chemistry of Natural Products | (03L + 01T) | 04 |
| CH15406CR | Advanced lab. Course in Organic Chemistry | 12 Lab hours | 04 |

(iii) Core Courses (CR): (PHYSICAL SPECIALIZATION):

| Course No. | Title | Contact hours/Week | No. of Credits |
|------------|---|--------------------|----------------|
| CH15407CR | Advanced Quantum Chemistry | (03L + 01T) | 04 |
| CH15408CR | Statistical Mechanics and Advanced Electrochemistry | (03L + 01T) | 04 |
| CH15409CR | Advanced Lab Course in Physical Chemistry | 12 Lab hours | 04 |

2. Discipline Centric Elective (DCE):

| Course No. | Title | Contact hours/Week | No. of Credits |
|------------|--|--------------------------------------|----------------|
| CH15410DCE | Bio-Inorganic Chemistry | (01L + 01T) | 02 |
| CH15411DCE | Acid Base, Non-Aqueous & Inorganic Polymer Chemistry | (01L + 01T) | 02 |
| CH15412DCE | Medicinal Chemistry | (01L + 01T) | 02 |
| CH15413DCE | Designing Organic Synthesis | (01L + 01T) | 02 |
| CH15414DCE | Chemistry of Materials | (01L + 01T) | 02 |
| CH15415DCE | Computational Chemistry | (01L + 01T) | 02 |
| CH15416DCE | Seminar | Presentation + Manuscript Submission | 02 |

3. Generic Elective (GE):

| Course No. | Title | Contact hours/Week | No. of Credits |
|------------|--|--------------------|----------------|
| CH15417GE | Synthetic Polymers and Applications | (01L + 01T) | 02 |
| CH15418GE | Basic Organic Reactions- The Biological Connection | (01L + 01T) | 02 |
| CH15419GE | Novel Materials | (01L + 01T) | 02 |

4. Open Elective (OE):

| Course No. | Title | Contact hours/Week | No. of Credits |
|------------|----------------|--------------------|----------------|
| CH15420OE | Food Chemistry | (01L + 01T) | 02 |