



**Shrimathi Devkunvar Nanalal Bhatt Vaishnav  
College for Women (Autonomous)**

Owned and Managed by Cork Industries Charities Trust  
Affiliated to University of Madras - Re-Accredited with 'A+' Grade by NAAC  
Chromepet Chennai-600044



## **DEPARTMENT OF UG CHEMISTRY (AIDED)**

### **B.Sc. CHEMISTRY**

#### **CHOICE BASED CREDIT SYSTEM (CBCS)**

**&**

#### **LEARNING OUTCOMES BASED CURRICULUM FRAMEWORK (LOCF)**

**2022-2025 Batch**



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## B.Sc. CHEMISTRY CURRICULUM FRAMEWORK 2022–2025 Batch

| Year/semester    | Part No. | Course components | Course code                                 | Title of the paper                              | credits | CIA | ESE | Total |
|------------------|----------|-------------------|---------------------------------------------|-------------------------------------------------|---------|-----|-----|-------|
| I yr I semester  | I        | Foundation course | 22ULTFC1001/<br>22ULHFC1001/<br>22ULSFC1001 | Tamil-I/<br>Hindi-I/<br>Sanskrit -I             | 3       | 40  | 60  | 100   |
|                  | II       | Foundation course | 22UGEFC1001                                 | General English-I                               | 3       | 40  | 60  | 100   |
|                  | III      | Core theory-I     | 22UCHCT1001                                 | Basics concepts in Inorganic Chemistry          | 3       | 40  | 60  | 100   |
|                  |          | Core theory-II    | 22UCHCT1002                                 | Analytical chemistry-I                          | 3       | 40  | 60  | 100   |
|                  |          | Core practical-I  | 22UCHCP1001                                 | Inorganic Qualitative Analysis                  | 2       | 40  | 60  | 100   |
|                  |          | Allied Theory-I   | 20UCHAT1001                                 | Allied Mathematics-I                            | 5       | 40  | 60  | 100   |
|                  | IV       | Soft skill        | 22USSLC1001                                 | Essentials of Language and communication skills | 3       | 50  | -   | 50    |
| I yr II semester | I        | Foundation course | 22ULTFC2002/<br>22ULHFC2002/<br>22ULSFC2002 | Tamil-II/<br>Hindi-II/<br>Sanskrit -II          | 3       | 40  | 60  | 100   |
|                  | II       | Foundation course | 22UGEFC2002                                 | General English-II                              | 3       | 40  | 60  | 100   |
|                  | III      | Core theory-III   | 22UCHCT2003                                 | Basics of Organic Chemistry                     | 3       | 40  | 60  | 100   |
|                  |          | Core theory-IV    | 22UCHCT2004                                 | Analytical chemistry-II                         | 3       | 40  | 60  | 100   |
|                  |          | Core practical-II | 22UCHCP2002                                 | Preparation and Tests for purity                | 2       | 40  | 60  | 100   |
|                  |          | Allied Theory-II  | 20UCHAT2002                                 | Allied Mathematics-II                           | 5       | 40  | 60  | 100   |
|                  | IV       | Soft skill        | 22USSSP2002                                 | Essentials of spoken and presentation skills    | 3       | 50  | -   | 50    |
|                  |          | Value education   | 20UESVE2001                                 | Environmental studies                           | 2       | 50  | -   | 50    |
|                  |          |                   | 20UYGVE2002                                 | Yoga and wellness                               | 2       | 50  | -   | 50    |



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| Year/<br>semester     | Part<br>No. | Course<br>components | Course code                                 | Title of the<br>paper                                            | credits | CIA | ESE | Total |
|-----------------------|-------------|----------------------|---------------------------------------------|------------------------------------------------------------------|---------|-----|-----|-------|
| II yr<br>III semester | I           | Foundation course    | 22ULTFC3003/<br>22ULHFC3003/<br>22ULSFC3003 | Tamil-III/<br>Hindi-III/<br>Sanskrit -III                        | 3       | 40  | 60  | 100   |
|                       | II          | Foundation course    | 22UGEFC3003                                 | General<br>English-III                                           | 3       | 40  | 60  | 100   |
|                       | III         | Core theory-V        | 22UCHCT3005                                 | Organic<br>functional<br>Groups and<br>Heterocyclic<br>compounds | 3       | 40  | 60  | 100   |
|                       |             | Core theory-VI       | 22UCHCT3006                                 | Chemistry of s<br>And p block<br>elements                        | 3       | 40  | 60  | 100   |
|                       |             | Core practical-III   | 22UCHCP3003                                 | Volumetric<br>Analysis                                           | 2       | 40  | 60  | 100   |
|                       |             | Allied Theory-III    | 20UCHAT3003                                 | Allied Physics-I                                                 | 4       | 40  | 60  | 100   |
|                       | IV          | Non major elective   | 20UCHND3001                                 | Chemistry in<br>Everyday life                                    | 2       | 50  | -   | 50    |
| II yr<br>IV semester  | I           | Foundation course    | 22ULTFC4004/<br>22ULHFC4004/<br>22ULSFC4004 | Tamil-IV/<br>Hindi-IV/<br>Sanskrit -IV                           | 3       | 40  | 60  | 100   |
|                       | II          | Foundation course    | 22UGEFC4004                                 | General<br>English-IV                                            | 3       | 40  | 60  | 100   |
|                       | III         | Core theory-VII      | 22UCHCT4007                                 | Thermodynam<br>ics                                               | 3       | 40  | 60  | 100   |
|                       |             | Core theory-VIII     | 22UCHCT4008                                 | Transition<br>,Inner<br>Transition<br>Elements and<br>Metallurgy | 3       | 40  | 60  | 100   |
|                       |             | Core practical-IV    | 22UCHCP4004                                 | Organic<br>Qualitative<br>analysis                               | 2       | 40  | 60  | 100   |
|                       |             | Allied Theory-IV     | 20UCHAT4004                                 | Allied Physics-<br>II                                            | 5       | 40  | 60  | 100   |
|                       |             | Allied Practicals -I | 20UCHAP4001                                 | Allied Physics-<br>practical                                     | 2       | 40  | 60  | 100   |
|                       | IV          | Non major elective   | 20UCHND4002                                 | Chemistry in<br>Everyday life                                    | 2       | 50  | -   | 50    |



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| Year/<br>seme<br>ster       | Part<br>No. | Course components                  | Course code                | Title of the paper                                              | credits | CIA | ESE | Total |
|-----------------------------|-------------|------------------------------------|----------------------------|-----------------------------------------------------------------|---------|-----|-----|-------|
| IIlyr<br>V<br>seme<br>ster  |             | Core theory-IX                     | 22UCHCT5009                | Co ordination<br>Chemistry                                      | 3       | 40  | 60  | 100   |
|                             |             | Core theory-X                      | 22UCHCT5010                | Stereo chemistry,<br>Reaction<br>Mechanism and<br>rearrangement | 3       | 40  | 60  | 100   |
|                             | III         | Core theory-XI                     | 22UCHCT5011                | Phase equilibria and<br>Chemical Kinetics                       | 3       | 40  | 60  | 100   |
|                             |             | Core theory-XII                    | 22UCHCT5012                | Spectroscopy                                                    | 3       | 40  | 60  | 100   |
|                             |             | Core practical-V                   | 22UCHCP5005                | Organic Quantitative<br>analysis                                | 2       | 40  | 60  | 100   |
|                             |             |                                    |                            | *physical Chemistry<br>practical                                |         |     |     |       |
|                             |             | Elective Theory-<br>I(classroom)   | 24UCHET5A01<br>24UCHET5B01 | Pharmaceutical<br>Chemistry<br>Dairy Chemistry                  | 5       | 40  | 60  | 100   |
|                             | IV          | Skill Based elective               | 23USSSB5SM3                | SWAYAM<br>MOOC/NPTEL                                            | 3       | 50  | -   | 50    |
| IIlyr<br>VI<br>seme<br>ster | III         | Core theory-XIII                   | 22UCHCT6013                | Nuclear Chemistry<br>and Organometallic<br>chemistry            | 3       | 40  | 60  | 100   |
|                             |             | Core theory-XIV                    | 22UCHCT6014                | Chemistry of Bio<br>molecules and<br>Natural<br>products        | 3       | 40  | 60  | 100   |
|                             |             | Core theory-XV                     | 22UCHCT6015                | Electrochemistry                                                | 3       | 40  | 60  | 100   |
|                             |             | Core theory-XII                    | 22UCHCT5012                | Spectroscopy                                                    | 3       | 40  | 60  | 100   |
|                             |             | Core practical-VI                  | 22UCHCP6006                | Gravimetric Analysis<br>And<br>Organic<br>preparation           | 2       | 40  | 60  | 100   |
|                             |             | Core practical-VII                 | 22UCHCP6007                | Physical Chemistry<br>practical                                 | 3       | 40  | 60  | 100   |
|                             |             | Elective Theory-<br>II(classroom)  | 24UCHET6A02<br>24UCHET6B02 | Medicinal Chemistry<br>Leather Chemistry                        | 5       | 40  | 60  | 100   |
|                             |             | Elective Theory-<br>III(classroom) | 22UCHET6003                | Applied Chemistry-                                              | 3       | 40  | 60  | 100   |
|                             |             | Elective project                   | 22UCHPR6001                | Applied Chemistry-<br>PROJECT                                   | 2       | 40  | 60  | 100   |
|                             | IV          | Skill Enhancement                  | 23USSSE6CR4                | Coursera                                                        | 3       | 50  | -   | 50    |
|                             | V           | Extracurricular<br>activities      | XSP                        | Sports                                                          | 1       |     |     |       |

\*practical examination will be conducted in Semester-VI



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|------------|---------------|---------------------|-------------------------------------------------------|---|
| 2022 batch | Extra credits | Ability Enhancement | E-edu Govern(previously offered by E-EDU)             | 2 |
|            |               | Life skills         | Leadership ,Management skills And Professional skills | 2 |