

**1. Details of the Teacher/ Academic :**

|                                 |   |   |
|---------------------------------|---|---|
| <b>Name &amp; Date of Birth</b> | : | Sunita Malhotra, 11 <sup>th</sup> November 1960   |
| <b>Date of Joining in IGNOU</b> | : | 4 <sup>th</sup> January, 1989   |
| <b>Current Designation</b>      | : | Professor   |
| <b>Pay Scale as on date</b>     | : | Rs. 2,11,800/-  |
| <b>Qualifications</b>           | : | B. Sc. (H), Chemistry, University of Delhi, 1980<br>M. Sc. (Org. Chemistry, spl.), University of Delhi, 1982<br>Certificate in German language, University of Delhi, 1983<br>Ph.D. Chemistry (Synthesis of Natural Products), University of Delhi, 1988<br>Diploma in Distance Education, (Gold Medallist), IGNOU, 1998 |

**2. Honour/Award/Fellowship/membership of Professional body/ Statutory body (internal/ external) received by the Teacher/ Academic:**

| S. No. | Name of the recipient | Honour /Award/ Fellowship name/ membership of Professional body/ Statutory body | Agency name /Name of statutory body/ institution/ Apex body | Period |
|--------|-----------------------|---|---|--------|
| 1      | Prof. Sunita Malhotra | Gold Medallist  | Diploma in Distance Education                               | 1998   |

**3. Books/Book Chapter:**

- Co-author/co-editor if any, title, place of publication, publisher, Year, page (no) s, ISBN No

| S. No. | Name of Author1/ Editor 1, & Co- author (s) / Co-editor (s) (if any) | Title of chapter/book | Place of publication | Publisher       | Year | Total Pages | ISBN No.               |
|--------|--|-----------------------|----------------------|-----------------|------|-------------|------------------------|
| 1      | Dr. Sunita Malhotra & Prof. V.K. Ahluwalia                           | Environmental Science | New Delhi            | Ane Books India | 2006 | 351         | ISBN 81-8052-023-4     |
| 2      | Prof. V.K. Ahluwalia & Prof. Sunita Malhotra                         | Environmental Science | New Delhi            | Ane Books       | 2013 |             | ISBN 978-93-8116-295-9 |

|   |   |                       |           |                                |      |  |                        |
|---|---|-----------------------|-----------|--------------------------------|------|--|------------------------|
| 3 | Reviewed by Prof. Sunita Malhotra<br>Author: (Dr. Krishan Kumar Mishra) | Khan-Paan aur Rasayan | New Delhi | Vigyan Prasar, Govt. of India. | 2014 |  | ISBN 978-81-7480-262-0 |
|---|---|-----------------------|-----------|--------------------------------|------|--|------------------------|

**4. Research Articles/Publications:**

| S. No. | Author/ Co-author (if any)                    | Title   | Name of Journal  | Vol.                  | Page o. (s)          | Year             | ISSN No.                             |
|--------|---|---|--|-----------------------|----------------------|------------------|--------------------------------------|
| 1      | S Malhotra, VK Sharma, SR Gupta and VS Parmar | Synthesis of 5,6-dihydroxy-6,7,2,3,4-pentemethoxyflavone: revision of structure of brickellin.  | <i>Indian Journal of Chemistry</i>   | <b>26B</b>            | 59-60                | 1987             | ISSN: 0376-4699                      |
| 2      | S Malhotra, VK Sharma, SR Gupta and VS Parmar | Synthesis of new 6-hydroxyflavones occurring in <i>Thymbra spicata</i>  | <i>Indian Journal of Chemistry</i>   | <b>26B</b>            | 705-706              | 1987             | ISSN: 0376-4699                      |
| 3      | S Malhotra, VK Sharma and VS Parmar           | Synthesis of three new dihydropyranochalcons: structural revision of crotmadine, an antifungal constituent of <i>Crotalaria madurensis</i><br><a href="https://pubs.acs.org/toc/jnprdf/51/3">https://pubs.acs.org/toc/jnprdf/51/3</a>   | <i>Journal of Natural Products</i>   | <b>Vol 51 Issue 3</b> | 578-581              | 1988             | ISSN: 0163-3864                      |
| 4      | S Malhotra, VK Sharma and VS Parmar           | Structure of bonducellin, a naturally occurring 3-benzylidene-2,3-dihydro-1-benzopyran-4-one<br><a href="https://pubs.rsc.org/en/content/articlelanding/1988/dt/dt98800bx027/unauth#!divAbstract">https://pubs.rsc.org/en/content/articlelanding/1988/dt/dt98800bx027/unauth#!divAbstract</a> | <i>Journal of Chemical Research (S)</i><br><br><i>Journal of Chemical Research (M)</i> | <b>Issue 6</b>        | 179<br><br>1570-1582 | 1988<br><br>1988 | ISSN 1747-5198<br><br>ISSN 0308-2350 |
| 5      | VS Parmar, VK Sharma and S Malhotra           | Synthesis of new dihydropyrano-1,3-diphenylprop-2-enones: revision of structure of flemistricin-F   | <i>Indian Journal of Chemistry</i>   | <b>26B</b>            | 547-550              | 1989             |                                      |
| 6      | VS Parmar, SK Sharma, JS Rathore,             | <sup>13</sup> C Nuclear Magnetic Resonance studies on 1,3-dihenyprop-2-   | <i>Magnetic Resonance in Chemistry</i>   | <b>28</b>             | 470-474              | 1990             |                                      |

|    |  |  |   |                          |            |      |                |
|----|--|--|---|--------------------------|------------|------|----------------|
|    | M Garg,<br>S Gupta,<br>S Malhotra,<br>VK Sharma,<br>S Singh and PM Boll  | enones<br><a href="https://onlinelibrary.wiley.com/toc/1097458xa/1990/28/5">https://onlinelibrary.wiley.com/toc/1097458xa/1990/28/5</a>  |   |                          |            |      |                |
| 7  | VS Parmar,<br>SK Sharma,<br>A Vardhan,<br>S Gupta,<br>S Malhotra<br>and<br>PM Boll   | <sup>13</sup> C Nuclear Magnetic Resonance-studies on 3-methylbut-2-enylated 1,3-diphenylprop-2-enones   | <i>Spectrochimica Acta</i>  | <b>48A</b>               | 617-620    | 1992 | ISSN 0584-8539 |
| 8  | VS Parmar,<br>SK Sharma,<br>A Vardhan,<br>RK Sharma,<br>S Gupta,<br>S Malhotra<br>and<br>PM Boll   | <sup>13</sup> C Nuclear Magnetic Resonance-studies on pyrano- and dihydropyrano-1,3-diphenylprop-2-enones<br><a href="https://onlinelibrary.wiley.com/doi/pdf/10.1002/mrc.1260300619">https://onlinelibrary.wiley.com/doi/pdf/10.1002/mrc.1260300619</a> | <i>Magnetic Resonance in Chemistry</i>  | <b>30</b>                | 560-563    | 1992 |                |
| 9  | Radha Nandan Chaturvedi,<br>Krishnaiah Pendem and<br>Sunita Malhotra   | Design, Synthesis and Biological Evaluation of Fluoroquinolone Schiff Bases  | <i>World Journal of Pharmacy and Pharmaceutical Sciences, SJIF Impact Factor 6.041</i>    | <b>Vol 5, Issue 6</b>    | 2320-2336, | 2016 | ISSN 2278-4357 |
| 10 | Pal Swati,<br>Sunita Malhotra<br>and<br>Naik S.N   | Development of Cosmeceutical products from Nanosized active colour constituents of Ratanjot, Seabuckthorn and Annatto.   | <i>Int. J Pharm Sci.</i>  | <b>Vol 8 Issue 5</b>     | 232-237    | 2016 | ISSN 2656-0097 |
| 11 | Pal Swati,<br>Sunita Malhotra<br>and<br>Naik S.N.  | A Convenient and Industrially viable route to separate lipophilic and hydrophilic fractions of Seabuckthorn pulp and analysis of their actives   | <i>Int. Res. J. Pharm.</i>  | <b>Vol. 7 Issue (11)</b> | 86-91      | 2016 | ISSN 2230-8407 |
| 12 | Radha N. Chaturvedi,<br>Mohd Arish ,<br>Mohammad Kashif,<br>Varinder Kumar,<br>Dr. Reenu,<br>Dr. Krishnaiah Pendem,<br>Dr. Abdur Rub*,<br>Prof. Sunita | Synthesis, Biological Evaluation, Molecular Docking and DFT Study of Potent Antileishmanial Agents Based on the Thiazolo[3, 2-a]pyrimidine Chemical  | <i>Medicinal Chemistry &amp; Drug Discovery Chemistry Select Full Papers Wiley Online</i> | <b>Vol. 3 Issue 10</b>   | 2756-2762  | 2018 | ISSN 2365-6549 |

|    |  |   |  |                                  |           |                               |                |
|----|--|---|--|----------------------------------|-----------|-------------------------------|----------------|
|    | Malhotra*<br>*(Corresponding Author)   | Scaffold  | Library  |                                  |           |                               |                |
| 13 | Radha Nandan Chaturvedi, Krishnaiah Pendem, Vipul P. Patel, Mukta Sharma and Sunita Malhotra | Design, synthesis, molecular docking, and in vitro antidiabetic activity of novel PPAR $\gamma$ agonist | <i>Monatshefte für Chemie - Chemical Monthly</i><br><i>An Intl. Journal of Chemistry</i><br>Springer-Verlag GmbH<br>Austria, part of Springer Nature 2018<br>Impact Factor 1.285 | <b>Vol. 149</b><br><b>No. 11</b> | 2069–2084 | Published online: 9 Aug. 2018 | ISSN 0026-9247 |

**5. Policy Documents Reports/ Mimeos: Nil**

| S. No. | Title | Institution/ Agency | Year |
|--------|-------|---------------------|------|
| 1.     |       |                     |      |
| 2.     |       |                     |      |
| 3.     |       |                     |      |

**6. Book Review published :**

| S. No. | Author/ Co-author (if any)  | Title                 | Name of Journal                       | Vol. | page no. (s) | Year | ISSN No           |
|--------|---|-----------------------|---------------------------------------|------|--------------|------|-------------------|
| 1      | Reviewed by Prof. Dr. Sunita Malhotra<br>Author: (Dr. Krishan Kumar Mishra) | Khan-Paan aur Rasayan | <i>Vigyan Prasar, Govt. of India.</i> |      | 149          | 2014 | 978-81-7480-262-0 |

**7. Presentation/Invited talk/Chair in National or International Seminar/Conference/ Workshops (Please do not mention if it is only participation without presentation): Nil**

| S. No. | Author/ Co author (if any) | Title of presentation, /Talk/Lecture | Name Organizing institute | Conference | City | Date and Year |
|--------|----------------------------|--------------------------------------|---------------------------|------------|------|---------------|
|        |                            |                                      |                           |            |      |               |
|        |                            |                                      |                           |            |      |               |

**(Duly authenticated by the Director/ Head of School/ Division/ Unit/Centre / Cell)**
**8. Study Tour Organised/ Participated/ Attachment Organized/Internship:**

| S. No. | Details of the tour | Name of coordinating body | Duration |
|--------|---------------------|---------------------------|----------|
| 1.     |                     |                           |          |

**9. Consultancy assignment (if any):**

| S. No. | Organization/ agency | Cost, title of consultancy | Duration |
|--------|----------------------|----------------------------|----------|
|        |                      |                            |          |

**10. Details of Institution/ Government/ Industry / own Institution Sponsored Research Projects (including Programme Evaluation) and Amount (Both completed and ongoing):**

| S. No. | Agency | Amount | Duration with dates | Status i.e. ongoing/ completed |
|--------|--------|--------|---------------------|--------------------------------|
|        |        |        |                     |                                |

**11. Details of PhD and MPhil Scholars (including those awarded degree):**

| S. No. | Name and enrolment no:      | Year of registration | Year of completion/ award |
|--------|-----------------------------|----------------------|---------------------------|
| 1      | Ms. Swati Pal               | 2011                 | 2018                      |
| 2      | Mr. Radha Nandan Chaturvedi | 2012                 | 2018                      |

**12. Details of Programmes/ Courses coordinated/ written/ edited/ translated:**

| S. No. | Programme   | Course | Unit (print)/ Audio/ Video/ eSLM | Coordinated/ Written/ Edited (content/ language/ format)/ Translated | Period   |
|--------|---|--------|----------------------------------|--|--|
|        | <b>Prorammes Coordinated</b>  |        |                                  |  |  |
| 1.     | M.Sc. Chemistry (on Campus full-time) Programme (first three semesters) |        |                                  |  | For the batches 2009-2011, 2010-2012, 2011- 2013               |
| 2.     | PG Diploma in Environmental & Sustainable Development                   |        |                                  |  | (Jointly till 1.1.2011)  |
| 3.     | Ph.D. (Chemistry)   |        |                                  |  | (Jointly) from January, 2010 till 3 <sup>1st</sup> March, 2017 |

| <b>Coordinating the following Courses</b> |   |  |                                      |                               |                     |  |
|---|---|--|--------------------------------------|-------------------------------|---------------------|--|
| <b>1.</b>                                 | <b>1A.<br/>B.Sc.<br/>Programme</b>  | 1. Physical Chemistry (CHE-04) Course  |                                      | Course Coordination           |                     |  |
|   |   | <b>Courses Coordinated</b>   | 2. Organic Chemistry (CHE-05) Course |                               | Course Coordination |  |
|   |   | 3. Spectroscopy (CHE-10) Course  |                                      | Course Coordination           |                     |  |
|   |   | 4. Chemistry Lab IV (CHE-11L) Course   |                                      | Course Coordination           |                     |  |
| <b>2.</b>                                 | <b>1B.<br/>B.Sc.<br/>Programme<br/>under CBCS<br/>Scheme</b>                          | 1. Atomic Structure, Bonding General Organic Chemistry and Aliphatic Hydrocarbons (BCHCT-131) Course                           |                                      | Course Coordination (Jointly) |                     |  |
|   |   | 2. Solutions, Phase Equilibrium, Conductance, Electro Chemistry and Functional Group Organic Chemistry-II, (BCHTCT-135) Course |                                      | Course Coordination           |                     |  |
| <b>3.</b>                                 | <b>1C.<br/>P.G. Diploma<br/>in Analytical<br/>Chemistry<br/>Programme<br/>(PGDAC)</b> | Separation Methods (MCH -002) Course   |                                      | Course Coordination           |                     |  |

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|----------------------------------|--|---|---|---|--|
| 4.                               | <b>1D.<br/>PG Diploma in<br/>Environmental<br/>&amp; Sustainable<br/>Development</b> | Natural Resources<br>(MED-006)<br>Course      |   | Course Coordination   |  |
| <b>Units Written/Transformed</b> |  |   |   |   |  |
| 1.                               | <b>B.Sc.<br/>Programme</b>   | Atoms and<br>Molecules<br>(CHE-01)<br>Course  | <b>Block – 1: Structure of<br/>Matter – I</b> |   |  |
|                                  |  |   | Unit 2: Wave Mechanics                        | Written   |  |
|                                  |  |   | Unit 5: Molecular Orbital<br>Theory           | Written   |  |
|                                  |  |   | <b>Block – 2 Structure of<br/>Matter – II</b> |   |  |
|                                  |  |   | Unit 6: Molecular Properties                  | Written   |  |
|                                  |  |   | <b>खंड- 1: द्रव्य की संरचना- 1</b>            |   |  |
|                                  |  |   | इकाई 2 तरंग यांत्रिकी                         | } Hindi vetting,<br>proof reading<br>and CRC<br>preparation |  |
|                                  |  |   | इकाई 5 अणु कक्षक सिद्धांत                     |   |  |
|                                  |  |   | <b>खंड- 2: द्रव्य की संरचना-II</b>            |   |  |
|                                  |  |   | इकाई 6 आण्विक गुणधर्म                         | Hindi vetting,<br>proof reading<br>and CRC<br>preparation   |  |
|                                  |  | Physical<br>Chemistry<br>(CHE – 04)<br>Course | <b>Block – 3: Solution and<br/>Phase Rule</b> |   |  |
|                                  |  |   | Unit 10 Solutions – I                         | Written   |  |
|                                  |  |   | Unit 11 Solutions – II                        | Written   |  |
|                                  |  |   | Unit 12 Colligative Properties                | Content<br>Transformation                                   |  |
|                                  |  |   | <b>खंड – 3: विलयन और प्रावस्था<br/>नियम</b>   |   |  |
|                                  |  |   | इकाई 10 विलयन- I                              | } Hindi vetting,<br>proof reading<br>and CRC<br>preparation |  |
|                                  |  |   | इकाई 11 विलयन- II                             |   |  |
|                                  |  |   | इकाई 12 अणु संख्य गुणधर्म                     |   |  |
|                                  |  |   | इकाई 13 प्रावस्था नियम                        |   |  |

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|--|---|--|--|--|--|
|  | Organic Chemistry<br>(CHE – 05)<br>Course | <b>Block – 1: Fundamental Concepts</b>   |  |  |  |
|  |   | Unit 1 : Bonding, Functional Group Classification and Nomenclature   | Written  | Development of Student Model Kit by which several activities are included in the course. |  |
|  |   | Unit 2 : Stereochemistry-I   | Written  |  |  |
|  |   | Unit 3 : Stereochemistry- II   | Written  |  |  |
|  |   | Unit 4 : Effect of Molecular Architecture on Physical Properties   | Written  |  |  |
|  |   | Unit 5 : Structure- Reactivity Relationships   | Written  |  |  |
|  |   | <b>खंड – 1 मूल संकल्पनाएँ</b>  |  |  |  |
|  |   | इकाई 1: आबंधन अभिलक्षक्रीय समूह वर्गीकरण और नामपद्धति<br>इकाई 2: त्रिविम रसायन– I<br>इकाई 3: त्रिविम रसायन– II<br>इकाई 4: भौतिक गुणधर्मों पर आण्विक संरचना का प्रभाव<br>इकाई 5: संरचना– अभिक्रियाशीलता संबंध         | Hindi vetting, proof reading and CRC preparation |  |  |
|  |   | <b>खंड – 2: मूल ढांचा :</b><br>हाइड्रोकार्बन और विषमचक्रीय यौगिक<br>इकाई 6: ऐल्केन<br>इकाई 7: ऐल्कीन<br>इकाई 8: ऐल्काइन<br>इकाई 9: ऐरोमैटिक हाइड्रोकार्बन तथा बहुनाभिकीय ऐरोमैटिक यौगिक<br>इकाई 10: विषमचक्रीय यौगिक | Hindi vetting, proof reading and CRC preparation |  |  |



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|  |  |                             | <b>Block – 4: Derivatives of Hydrocarbons-II</b>   |  |  |
|  |  |                             | Unit 15 : Monocarboxylic and Symphonic Acids   | Written  |  |
|  |  |                             | Unit 16 : Substituted Carboxylic Acids   | Written  |  |
|  |  |                             | Unit 17 : Functional Derivatives of Monocarboxylic Acids   | Written  |  |
|  |  |                             | Unit 18: Nitro Compounds   | Written  |  |
|  |  |                             | Unit 19: Amino Compounds and Diazonium Salts   | Content Transformation                           |  |
|  |  |                             | Unit 20 : Natural Products   | Content Transformation                           |  |
|  |  |                             | <b>खंड-4 हाइड्रोकार्बनों के व्युत्पन्न-II</b>  |  |  |
|  |  |                             | इकाई 15: मोनोकार्बोक्सिलिक और सल्फोनिक अम्ल<br>इकाई 16: प्रतिस्थापित कार्बोक्सिलिक अम्ल<br>इकाई 17: मोनोकार्बोक्सिलिक अम्लों के अभिलक्षकीय व्युत्पन्न<br>इकाई 18: नाइट्रो यौगिक<br>इकाई 19: ऐमीनो यौगिक और डाइऐजोनियम लवण<br>इकाई 20: प्राकृतिक उत्पाद | Hindi vetting, proof reading and CRC preparation |  |
|  |  | CHE- 10 Spectroscopy Course | <b>Block – 1: Basic Concepts and Rotational Spectra</b>  |  |  |
|  |  |                             | Unit 1: Spectra of Atoms   | Content Transformation                           |  |
|  |  |                             | Unit 3: Rotational Spectra   | Content Transformation                           |  |

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|  |  |  | <b>Block-2: IR and Raman Spectra</b>   |  |  |
|  |  |  | Unit 4: Vibrational Spectra of Diatomic Molecules                                    | Content Transformation                           |  |
|  |  |  | <b>Block – 4: Resonance Spectroscopy and Mass Spectrometry</b>                       |  |  |
|  |  |  | Unit 10: Nuclear Magnetic Resonance Spectroscopy                                     | Content Transformation                           |  |
|  |  |  | Unit 11: Electron Spin Resonance Spectroscopy  | Content Transformation                           |  |
|  |  |  | Unit 12: Mass Spectrometry   | Content Transformation                           |  |
|  |  |  | Unit 13: Exercises in problem solving using IR, UV, NMR and Mass spectral Techniques | Content Transformation                           |  |
|  |  |  | <b>खंड – I: मूल संकल्पनाएँ और घूर्णन स्पेक्ट्रम</b>                                  |  |  |
|  |  |  | इकाई 1: परमाणुओं के स्पेक्ट्रम<br>इकाई 3: घूर्णन स्पेक्ट्रम                          | Hindi vetting, proof reading and CRC preparation |  |
|  |  |  | <b>खंड – 2: अवरक्त और रामन स्पेक्ट्रमिकी</b>   |  |  |
|  |  |  | इकाई 4: द्वि-परमाणुक अणुओं के अवरक्त स्पेक्ट्रम                                      | Hindi vetting, proof reading and CRC preparation |  |
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|  |  |   | खंड – 4: अनुनाद स्पेक्ट्रमिकी और द्रव्यमान स्पेक्ट्रममिति  |  |  |
|  |  |   | इकाई 10: नाभिकीय चुंबकीय अनुनाद स्पेक्ट्रमिकी<br>इकाई 11: इलेक्ट्रॉन प्रचक्रण अनुनाद स्पेक्ट्रमिकी<br>इकाई 12: द्रव्यमान स्पेक्ट्रममिति<br>इकाई 13: आइ.आर., पराबैंगनी, एन. एम. आर. और द्रव्यमान स्पेक्ट्रमी तकनीकों द्वारा संरचना निर्धारण | Hindi vetting, proof reading and CRC preparation |  |
|  |  | CHE-II (L)<br>Chemistry<br>Lab – IV<br>Course | <b>Block -2: Properties of Liquids and Thermochemistry</b>   |  |  |
|  |  |   | Unit 4: Surface Tension of an Aqueous Solution   | Content Transformation                           |  |
|  |  |   | Unit 5: Viscosity of NaCl/CuSO <sub>4</sub> / Cane Sugar Solution  | Content Transformation                           |  |
|  |  |   | Unit 6: Enthalpy of Solution   | Content Transformation                           |  |
|  |  |   | Unit 7: Enthalpy of Neutralisation   | Content Transformation                           |  |
|  |  |   | खंड – 2: द्रवों के गुणधर्म और ऊष्मारसायन   |  |  |
|  |  |   | इकाई 4: पृष्ठ तनाव<br>इकाई 5: द्रवों की शयनता<br>इकाई 6: ऊष्मारसायन-विलयन की एन्थैल्पी उदासीनकरण एन्थैल्पी और आयनन<br>इकाई 7: एन्थैल्पी का निर्धारण करना   | Hindi vetting, proof reading and CRC preparation |  |
|  |  | AEC – 01<br>Environm-                         | <b>Block -4: Pollutants in Soil and Water</b>  |  |  |

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|    |  | ental<br>Chemistry<br>Course | Unit 11: Industrial Effluents  | Content<br>Transforma<br>tion                                   |  |
|    |  |                              | Unit 12: Agrochemicals   | Content<br>Transforma<br>tion                                   |  |
|    |  |                              | Unit 13: Municipal and<br>Domestic Waste   | Content<br>Transforma<br>tion                                   |  |
|    |  |                              | Unit 14: Effects of Soil and<br>Water Population   | Content<br>Transforma<br>tion                                   |  |
|    |  |                              | <b>खंड – 4: मृदा और जल में<br/>प्रदूषक</b>   |   |  |
|    |  |                              | इकाई 11: औद्योगिक बहिःस्रवे  | Hindi<br>vetting,<br>proof<br>reading and<br>CRC<br>preparation |  |
|    |  |                              | इकाई 12: कृषि रसायनों के<br>कारण उत्पन्न<br>पर्यावरणी प्रदूषण  |   |  |
|    |  |                              | इकाई 13: नगरपालिका एवं<br>घरेलू अपशिष्ट  |   |  |
|    |  |                              | इकाई 14: मृदा और जल प्रदूषण<br>के प्रभाव   |   |  |
| 2. |  |                              | <b><u>Review of CAPA Materials<br/>(CPLT)</u></b><br>C-3.1 Preparative<br>Techniques<br>C-3.2 Filtration<br>C-3.3 Distillation and<br>Boiling<br>Point Determination<br>C-3.4 Recrystallisation<br>C-3.5 Chromatography<br>Modules – 1 to 9 of<br>F1 Series (General<br>Lab Practices)<br>Modules – 1201 to<br>1218 of N 2 Series<br>(Chemistry Material)<br>Modules – 1-7 of F1<br>Series (Laboratory<br>Safety) Modules –<br>1321-1326 (Lab<br>Organisation and<br>Management) |   |  |

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| 3.                                       | <b>P.G. Diploma in Analytical Chemistry Programme (PGDAC)</b> | MCH –002<br>Separation Methods Course          | <b>Block 1: Classical Methods</b>             |                        |  |
|  |   |  | Unit 1: General Aspects of Separation Methods | Content Transformation |  |
|  |   |  | Unit 2: Solvent Extraction-I                  | Content Transformation |  |
|  |   |  | Unit 3: Solvent Extraction-II                 | Content Transformation |  |
|  |   |  | <b>Block 2: Chromatographic Methods –I</b>    |                        |  |
|  |   |  | Unit 4 General Principles of Chromatography   | Content Transformation |  |
|  |   | Unit 5 Liquid Column Chromatography            | Content Transformation                        |                        |  |
|  |   | Unit 6 Planar Chromatography                   | Content Transformation                        |                        |  |
|  |   | <b>Block 3: Chromatographic Methods – II</b>   |   |                        |  |
|  |   | Unit 7: Gas Chromatography                     | Content Transformation                        |                        |  |
|  |   | Unit 8: High Performance Liquid Chromatography | Content Transformation                        |                        |  |
|  |   | <b>Block 4: Chromatographic Methods – III</b>  |   |                        |  |
| Unit 9: Ion Exchange Chromatography      | Content Transformation  |  |   |                        |  |
| Unit 10: Size Exclusion Chromatography   | Content Transformation  |  |   |                        |  |
| <b>Block 5: Other Separation Methods</b> |   |  |   |                        |  |
| Unit 11: Membrane Separation             | Content Transformation  |  |   |                        |  |
| Unit 12: Electrophoresis                 | Content Transformation  |  |   |                        |  |

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|    |  | MCH – 004<br>Spectroscopic<br>Methods<br>Course  | Unit10: Spectroscopic<br>Methods & their<br>applications in<br>structure elucidation | Written |  |
| 4. | CPLT   | Laboratory<br>Techniques in<br>Chemistry<br>(LT-3)   | Unit 8: The Preparative<br>Techniques  | Written |  |
|    |  |  | Unit 9: Filtration   | Written |  |
|    |  |  | Unit 10: Distillation and<br>Boiling Point<br>Determination                          | Written |  |
|    |  |  | Unit11: Recrystallisation<br>and Melting Point<br>Determination                      | Written |  |
|    |  |  | Unit 12: Chromatography – I  | Written |  |
|    |  | इकाई 8: विरचन तकनीकें<br>इकाई 9: निस्थंदन<br>इकाई 10: आसवन और क्वथनांक<br>निर्धारण<br>इकाई 11: पुनर्क्रिस्टलन और<br>गलनांक निर्धारण<br>इकाई 12: वर्णलेखिकी– I<br>इकाई 13: वर्णलेखिकी– II | Hindi<br>vetting,<br>proof<br>reading and<br>CRC<br>preparation                      |         |  |
|    | Appreciation<br>Course on<br>Environment<br>(ACE)        | Unit 11: Global Issues and<br>Concerns   | Written  |         |  |
|    | Chemistry<br>Course for<br>NVS<br>Teachers<br>(MESE-004) | Unit 14: Stereochemistry   | Written  |         |  |
|    | Chemistry<br>(Dip. in<br>Engineering)<br>ICE3FF03        | Unit1: Non-Metals  | Written  |         |  |
|    | Chemistry<br>(Dip. in<br>Engineering)<br>ICE3FF03        | Unit 2: Metals   | Written  |         |  |
|    | Chemistry<br>(Dip. in<br>Engineering)<br>ICE3FF03        | Unit 3: Periodic Properties  | Written  |         |  |

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|   |  | Chemistry<br>(Dip. in<br>Engineering)<br>ICE3FF03  | Unit7: Plastics and Rubber                                       | Written   |  |  |
| 5.  | <b>B.Sc.<br/>Programme<br/>under CBCS<br/>Scheme</b> | BCHCT-<br>131Course:<br><br>Atomic<br>Structure,<br>Bonding,<br>General<br>Organic<br>Chemistry &<br>Aliphatic<br>Hydrocarbons | <b>Block-1: Atomic Structure</b>                                 |   |  |  |
|   |  |  | Unit 1: Bohr's Theory  | Written   |  |  |
|   |  |  | Unit 2: Dual Behaviour of<br>Radiation and Matter                | Written   |  |  |
|   |  |  | Unit 3: Quantum Mechanical<br>Approach                           | Written   |  |  |
|   |  |  | Unit 4: Hydrogen Atom  | Written   |  |  |
|   |  |  | Unit 5: Electronic<br>Configuration of<br>Multi-Electron Atoms   | Written   |  |  |
|   |  | सरंचना,<br>आबंधन,<br>सामान्य<br>कार्बनिक<br>रसायन और<br>ऐलिफैटिक<br>हाइड्रोकार्बन  | <b>खंड-1: परमाणु संरचना</b>                                      |   |  |  |
|   |  |  | इकाई 1: बोर का सिद्धांत  | Hindi<br>Translation,<br>proof<br>reading and<br>CRC<br>preparation |  |  |
|   |  |  | इकाई 2: विकिरण और द्रव्य की<br>द्वैती प्रकृति                    |   |  |  |
|   |  |  | इकाई 3: क्वांटम यांत्रिकीय<br>दृष्टिकोण                          |   |  |  |
|   |  |  | इकाई 4: हाइड्रोजन परमाणु   |   |  |  |
| इकाई 5: बहु.इलेक्ट्रॉनिक<br>परमाणुओं के<br>इलेक्ट्रॉनिक विन्यास |  |  |  |   |  |  |
|   |  | <b>Block-2: Chemical<br/>Bonding and<br/>Molecular<br/>Structure</b>   |  |   |  |  |
|   |  | Unit -9: Molecular Orbital<br>Theory'  | Written  |   |  |  |
|   |  | <b>खंड 2 : रासायनिक आबंधन<br/>और अणु संरचना</b>  |  |   |  |  |
|   |  | इकाई 9: अणु कक्षक सिद्धांत   | Hindi<br>Translation,<br>proof reading<br>and CRC<br>preparation |   |  |  |

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|  |  |   | <b>Block-3: Fundamentals of Organic Chemistry</b>                       |  |  |
|  |  |   | Unit -10: Stereochemistry I: Geometrical And Optical Isomerisms         | Written  |  |
|  |  |   | Unit -11 Stereochemistry-II: Configurational Isomers                    | Written  |  |
|  |  |   | Unit -12 Stereochemistry-III: Conformational Isomerism                  | Written  |  |
|  |  |   | Unit -13 Structure - Reactivity Relationships                           | Written  |  |
|  |  |   | <b>खंड-3: मूल कार्बनिक रसायन</b>  |  |  |
|  |  |   | इकाई-10 त्रिविम.रसायन-I : ज्यामितीय और प्रकाशिक समावयवताएँ              | Hindi Translation, proof reading and CRC preparation |  |
|  |  |   | इकाई-11 त्रिविम.रसायन-II: विन्यासी समावयव                               |  |  |
|  |  |   | इकाई-12 त्रिविम समावयवता: कॉन्फॉर्मैषनी समावयवता                        |  |  |
|  |  |   | इकाई-13 इलेक्ट्रॉनिक प्रभाव और अम्लों तथा क्षारों की प्रबलता            |  |  |
|  |  | <b>Semester –II</b>   | <b>Section A: Physical Chemistry</b>                                    |  |  |
|  |  | Chemical Energetics, Equilibria & Functional Organic Chemistry (Lab)<br>BCHCL-134 | Unit 1: Thermochemistry and Determination of Enthalpy of Neutralisation | Written  |  |
|  |  |   | Exp. 1a: Determination of the Heat Capacity of the Colorimeter          | Written  |  |



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|    |  | <b>Semester –II</b><br><br>रासायनिक<br>और्जिकी,<br>सामने और<br>अभिलक्षकीय<br>कार्बनिक<br>रासायन<br>(प्रयोगशाला) | Exp. 2: Determination of Enthalpy of Ionisation of a Weak Acid   | Written  |  |
|    |  |   | Exp.3: Determination of the Integral Enthalpy of Solution of Ammonium Chloride/Potassium Nitrate   | Written  |  |
|    |  |   | इकाई 1: उष्मारसायन और उदासीनीकरण एन्थैल्पी का निर्धारण   | Hindi Translation, proof reading and CRC preparation   |  |
|    |  |   | प्रयोग 1(क) : कैलोरीमीटर की ऊष्मा-धारिता का निर्धारण   |  |  |
|    |  |   | इकाई 2: किसी दुर्बल अम्ल की आयनन एन्थैल्पी का निर्धारण करना  | Hindi Translation, proof reading and CRC preparation   |  |
|    |  |   | इकाई 3: अमोनियम क्लोराइड की समाकल विलयन एन्थैल्पी का निर्धारण करना   |  |  |
| 6. | <b>PG Diploma in Environment &amp; Sustainable Development</b> | Natural Resources (MED-006) course  | <b>Block-1 Natural Resources: Physical</b><br><br>Unit-1 Introduction to Natural Resources<br><br>Unit-2 Land, Soil and Water<br><br>Unit-3 Energy and Mineral Resource<br><br>Unit-4 Natural Resources Conservation | Content Transformation<br><br>Content Transformation<br><br>Content Transformation<br><br>Content Transformation |  |
| 7. | <b>CPLT Revised</b>  | Laboratory Techniques in Chemistry (CLT-103)  | <b>Block-2: Laboratory Techniques</b><br><br>Unit-5: Common Laboratory Techniques<br><br>Unit-6: Chromatography  | Written<br><br>Written   |  |

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|    |                      |                              | खंड 2 : प्रयोगशाला तकनीकें                        |  |
|    |                      |                              | इकाई 5: सामान्य प्रयोगशाला तकनीकें                | Hindi Translation, proof reading and CRC preparation |
|    |                      |                              | इकाई 6: वर्णलेखिकी                                |  |
| 8. | <b>1F.B.Sc. CBCS</b> | Environmental Science (AECC) | <b>Block-3: Environmental Issues and Concerns</b> |  |
|    |                      |                              | Unit 11: Global Environmental Issues              | Written  |

**13. Training programmes designed and conducted, duration and dates**

| S. No. | Programme | Dates | Place | Number of Participants |
|--------|-----------|-------|-------|------------------------|
|        |           |       |       |                        |

**14. Details of Counselling sessions conducted:**

| S. No. | Programme | Course   | Place       | Dates      | Duration | Mode (Specify- Face to Face Radio counselling Teleconferencing Web conferencing Any Other) |
|--------|-----------|--|-------------|------------|----------|--|
| 1      | B.Sc.     | Electives in Chemistry' B.Sc. Learners (English)             | EMPC, IGNOU | 13.10.2002 | 1 Hour   | IRC  |
| 2      | B.Sc.     | Chemistry Electives/ Lab. Courses for B.Sc. Learners (Hindi) | EMPC, IGNOU | 02.11.2003 | 1 Hour   | IRC  |
| 3      | B.Sc.     | Organic Chemistry, CHE – 05 Courses                          | EMPC, IGNOU | 28.12.2004 | 1 Hour   | IRC  |
| 4      | B.Sc.     | Awareness Course on Environment (ACE) Course                 | EMPC, IGNOU | 26.12.2006 | 1 Hour   | IRC  |
| 5      | B.Sc.     | B.Sc. Programme. Some salient features                       | EMPC, IGNOU | 09.01.2007 | 1 Hour   | IRC  |
| 6      | CPLT      | CPLT programme   | EMPC, IGNOU | 04.02.2007 | 1 Hour   | IRC  |
| 7      | PGDESD    | Introduction and Career Opportunities in PGDESD              | EMPC, IGNOU | 05.08.2007 | 1 Hour   | IRC  |

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| 8  | B.Sc.  | B.Sc. Programme- General Features   | EMPC, IGNOU | 06.01.2008 | 1 Hour | IRC |
| 9  | B.Sc.  | B.Sc. Programme – Chemistry Electives                                       | EMPC, IGNOU | 05.10.2008 | 1 Hour | IRC |
| 10 | B.Sc.  | Environmental Chemistry (AEC-01) Course                                     | EMPC, IGNOU | 09.11.2008 | 1 Hour | IRC |
| 11 | CPLT   | Certificate programme in laboratory Techniques                              | EMPC, IGNOU | 11.08.2009 | 1 Hour | IRC |
| 12 | B.Sc.  | Introduction to Chemistry Electives   | EMPC, IGNOU | 13.09.2009 | 1 Hour | IRC |
| 13 | CPLT   | CPLT Programme  | EMPC, IGNOU | 13.07.2010 | 1 Hour | IRC |
| 14 | B.Sc.  | Introduction to Environment- Updates  | EMPC, IGNOU | 26.09.2010 | 1 Hour | IRC |
| 15 | CPLT   | Certificate programme in laboratory Techniques and Environmental Chemistry. | EMPC, IGNOU | 11.10.2011 | 1 Hour | IRC |
| 16 | PGDESD | PGDESD Programme.   | EMPC, IGNOU | 15.11.2011 | 1 Hour | IRC |
| 17 | B.Sc.  | Structure of Atom   |             | 30.10.2018 | 1 Hour | IRC |
| 18 | B.Sc.  | B.Sc. Programme (Chemistry Electives)                                       | EMPC, IGNOU | 19.03.2019 | 1 Hour | IRC |

**EDUSAT PROGRAMMES**

- Series of Programmes on Stereochemistry (Stereochemistry-I-VIII, some details are given below:
  1. Stereochemistry V- Unit 3 CHE-05 Cycloalkanes, 4.12.2008
  2. Stereochemistry VII- Unit 3 CHE-05 –Optical Isomers and Fischer Projections
  3. Stereochemistry VIII -Unit 3 CHE-05-Using Fischer Projections
  4. Teleconferencing Session on NMR Spectroscopy-I for B.Sc. learners, 24 March 2019.

**15. Details of Patents granted (if any): Nil**

**16. Contribution to IGNOU's corporate life:**

| S. No. | Chairperson/ Member of Committee | Name of the Committee | Date/ period |
|--------|----------------------------------|-----------------------|--------------|
|--------|----------------------------------|-----------------------|--------------|

**(Duly authenticated by the Director/ Head of School/ Division/ Unit/Centre / Cell)**

|    |             |   |   |
|----|-------------|---|---|
| 1. | Chairperson | Printing Committee  | 07 <sup>th</sup> March, 2012 to 18 <sup>th</sup> May, 2013. |
| 2. | Member      | Committee to develop a Uniform Policy with regard to the items being considered in the School Board Meetings. | Notified on 12 <sup>th</sup> November, 2018                 |

3. Chairperson, Seminar and Cultural Programme Committee notified on 10<sup>th</sup> July, 2019.
4. Organized Special Function for Conferring of Doctor of Science (Honoris Causa) on Prof. C.N.R Rao on behalf of the School of Sciences, March, 2008.
5. Organized Public Lecture on "Women in Science" on behalf of the School of Sciences in March 2008.
6. Campus Coordinator for On Campus Full Time Programmes from 27<sup>th</sup> October 2011 to June 2012.

**17. Administrative position/s held in the University (even as in charge)**

| S. No. | Designation                        | Period  |
|--------|------------------------------------|---|
| 1      | Director, School of Sciences IGNOU | From 9th July 2007 to 8 <sup>th</sup> July 2010 |

**18. Any other contribution/information**

1. Member, Academic Council, 09<sup>th</sup> July 2007 to 08<sup>th</sup> July 2011
2. Member, Moderation Board (SOET) in 1999 and 2000
3. Member, School Board, School of Engineering and Technology from 4<sup>th</sup> March 2000 to 3<sup>rd</sup> March 2002
4. Member, School Board, School of Sciences from 4<sup>th</sup> March, 2000 to 3<sup>rd</sup> March 2002
5. Member, School Board, School of Sciences from 02<sup>nd</sup> November 2003 till Date.
6. Member, School Board, School of Health Sciences from January, 2004 to January, 2006
7. Member, School Board School of Continuing Education from December 2011 to November 2013
8. Member, House Allotment Committee in 2011
9. Member, School Board School of Social Work from January 2012 to December 2014.
10. Member, Task Force for Printing and Dispatch of Materials from 16<sup>th</sup> May 2013 till October 2016
11. Member, Study/Sabbatical Leave Committee in 2017
12. Attended four days Training Programmes on Academic Leadership organized by Centre for Academic Leadership and Education Management (CALEM) at Gaya from 1<sup>st</sup> to 4<sup>th</sup> May, 2018
13. Member, Research Council Standing Committee from 11<sup>th</sup> January, 2018 to 10<sup>th</sup> January, 2019
14. Member, various Committees of School of Sciences
15. Observer for OPENMAT and other examinations of the Universities from time to time.
16. Maintenance of Chemistry Discipline Library
17. Chemistry Discipline Coordinator from time to time (2<sup>nd</sup> November, 2018 to 1<sup>st</sup> November, 2019)
18. Association with CBSE, NCERT, KVS, NIOS, DAV Schools, IP University, University of Delhi & Delhi Technological University, Kurukshetra University, Rajasthan University and Other Institutions for the following activities:
  - Development of Secondary and Senior Secondary School level Text Books for NCERT
  - Editing and translation of Text Book materials for NCERT

**(Duly authenticated by the Director/ Head of School/ Division/ Unit/Centre / Cell)**

- Development of Audio-Video Materials on Experimental/Activities in Science at Secondary Stage for NCERT
- Development of Audio-Video Materials on Experimental/Activities in Science at Senior Secondary Stage for NCERT
- Development of textual materials for Science laboratory kits for school level teachers and students for NCERT
- Participated in the workshop for the development of Tactile Books in Biology, Physics, Chemistry and Mathematics and evaluation of Tactile Books in Mathematics and science developed by IIT Delhi
- Member, Curriculum Committee CBSE( policy related issues)
- Member, Examination Committee CBSE
- Training of teachers of DAV Schools in different States of the Country for the new curriculum implemented in the Senior Secondary Schools as per National Curriculum Frame work (NCF).
- Member, Selection committees and Chairperson for various boards for teachers at Secondary and Senior Secondary levels for Kendriya Vidyalaya Sanghathan(KVS)
- Actively involved with Punjab Education Society for the training of teachers working at School, College and University level to be the resource persons for development of Multimedia Content
- Member of the Science and Technology Curriculum Committee of National Institute of Open Schooling (NIOS).
- Involved in the development of text books for NIOS.
- Involved with NIOS podcast for LIVE Personal Contact Programme for Mukta Vidya Vani, (a web based audio channel) for Secondary, Sr. Secondary and Vocational Courses, (Delivered content based lectures).
- Associated with other Universities as Ph.D. examiner

**Signature of Teacher /Academic**

**Signature of Director/ Head**