

Course Code. :	<b>CH181001</b>
Course Title	Chemistry
Credits :	L T P C 3 1 0 4
Prerequisites (if any)	
Course Contents	<p>Chemical Kinetics: Rate laws, Rate constant and equation, order and molecularity, Complex reactions, Arrhenius equation, collision theory, Reaction cross section, Harpoon mechanism, Organic reaction mechanism</p> <p>Catalysis: Homogeneous and Heterogeneous Catalysis, Adsorption, Biocatalysis, Important Industrial applications (at least two), Catalytic converter</p> <p>Basics of Spectroscopy: Rotational, Vibrational and Electronic spectroscopy</p> <p>Basics of Electrochemistry, Fuel Cell, Corrosion and its prevention</p> <p>Water and its treatment</p> <p>Polymer: Classification, Molecular weight and MWD, Thermal and mechanical properties, Compounding of polymer, Commodity plastic and engineering plastic</p>
Text books/ References	<p><b>Text Books: (Latest editions)</b></p> <ol style="list-style-type: none"> <li>1. Elements of Physical Chemistry, P.W. Atkins &amp; De Paula, Oxford, 2017.</li> <li>2. Heterogeneous Catalysis, D. K. Chakravarty &amp; B. Vishwanathan, New Age International, 2011.</li> <li>3. Polymer Science - V. R. Gowariker, N. V. Viswanathan &amp; Jayadev Sreedhar, New Age International, 2006 (reprint).</li> <li>4. Organic Chemistry, R. T. Morrison &amp; R. N. Boyd, Pearson Education India, 2010.</li> <li>5. Fundamentals of molecular spectroscopy, C. N. Banwell &amp; E. M. McCash, McGraw Hill Education (India) Private Limited, 2013</li> <li>6. Spectroscopy of Organic compounds, P. S. Kalsi, New Age International, 2007.</li> <li>7. Applications Of Absorption Spectroscopy Of Organic Compounds, J. R. Dyre, Prentice Hall India Learning Private Limited, First Edition, 1978.</li> <li>8. Heterogeneous Catalysis: Principles &amp; Applications, G. C. Bond, Clarendon Press ; New York : Oxford University Press, 1987</li> <li>9. Engineering Chemistry, Jain and Jain, Dhanpat Rai Publishing Company, 2015</li> <li>10. A text book of Engineering Chemistry, Shashi Chawla, Dhanpat Rai &amp; Co. (P) Limited, 2017</li> <li>11. Chemical kinetics, K. J. Laidler, Pearson Education India, 2003.</li> </ol>