

Name of Faculty		Faculty of Physical Sciences					L: 1 T: 1
Name of Course		B.Sc. (Non Medical)					Credits: 2
Subject/Paper		Green Chemistry and Technology			Paper Code		Marks: 50
Course Coordinator Name: Contact:		Dr. Zuber Akhter zuber.akhter@sgtuniversity.org 9910861245			Class Time: 2:00-4:00 pm.	Days	Wednesday
Unit	Title	Time (hrs)	Topic	Teaching Methodology	Assessment Method	Teaching Faculty	
Unit-I	Green Chemistry	7 hours	<ol style="list-style-type: none"> 1. Introduction- Definition, Scope and need of green Chemistry 2. Basic principles of green chemistry. 3. Limitations /Obstacles in the pursuit the goals of the Green Chemistry and technology. 4. Reasons for Green Chemistry (resource minimization, waste minimization concepts), 5. Green synthesis: Evaluation of the type of the reaction i) Rearrangements (100% atom economic), ii) Addition reaction (100% atom economic). 	<ol style="list-style-type: none"> 1.Assignment 2.Seminar 3.SIS 4.Demonstration 5. Power point presentation 	<ol style="list-style-type: none"> 1.Assignment 2.Seminar/presentation 3 Class test 4 Sessional Examination 5 End Term Examination 		
UNIT-II	Fundamentals of Catalytic Science and Engineering	6hrs	<ol style="list-style-type: none"> 1. Homogenous and heterogeneous catalysis. 2. Fundamentals of homogeneous catalysis mechanisms and kinetics. 3. Acid--base catalysis, Transition metal catalysis. 4. Green catalysts (Natural and Modified Clays, Zeolites, Ionic 	<ol style="list-style-type: none"> 1.Assignment 	<ol style="list-style-type: none"> Assignment 2.Seminar/presentation 3 Class test 4 Sessional Examination 5 End Term 		

			Liquids) 5. Bio catalysts (Enzymes).	2.Seminar 3.SIS 4.Demonstrations 5.Power point presentation	Examination	
UNIT -III	Green Technology in Day to Day life & Industries	7hrs	1. Implications of Green Technology in day to day life. 2. Some of the case studies (including Dry Cleaning of cloths, Hydrogen peroxide as a bleaching agent, Green solution to turn turbid water clear) 3. Different fields including Pharma & Polymer science (Paracetamol, Irubfen, polylactic acid, etc.), 4. Organic electronics (such as OLED, Organic sensors, Green mobile phones, conductive paper), IT, Civil and Mechanical Engineering.	1.Assignment 2.Seminar 3.SIS 4.Demonstration 5Experiment based learning 5.Power point presentation	1.Assignment 2.Seminar/pre presentation 3 Class test 4 Sessional Examination 5 End Term Examination	

This course imparts life skills about application of green technology in everyday life.

Reference books:

1. Green Chemistry Theory and Practice. P.T.Anatas and J.C. Warner
2. Green Chemistry V.K. Ahluwalia Narosa, New Delhi.
3. Real world cases in Green Chemistry M.C. Cann and M.E. Connelly
4. Green Chemistry: Introductory Text M.Lancaster: Royal Society of Chemistry(London)
5. Green Chemistry: Introductory Text, M.Lancaster