



Shri Vaishnav Vidyapeeth Vishwavidyalaya

Shri Vaishnav Institute of Science

Department of Chemistry

Generic Elective Course

Choice Based Credit System (CBCS)

COURSE CODE	CATEGORY	COURSE NAME	L	T	P	CREDITS	TEACHING & EVALUATION SCHEME				
							THEORY			PRACTICAL	
							END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*
GUCH106	UG	SUSTAINABILITY AND CHEMISTRY	4	0	0	4	60	20	20	00	00

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit; Q/A – Quiz/Assignment/Attendance, MST Mid Sem Test.

*Teacher Assessment shall be based on following components: Quiz/Assignment/Project/Participation in class, given that no component shall exceed more than 10 marks.

Course Objective:

- To give basic knowledge of role of chemistry for sustainable development.
- To promote the safe use of chemicals.
- To develop the achieving measurable reduction in greenhouse gases emission and pollutants.

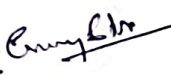
Course Outcomes

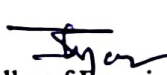
After completion of the course the students will be able to understand: Role of chemistry for sustainable development and aware about benefit of sustainable chemistry.

Unit-I Introduction of synthetic Chemistry

Basic of Synthetic methods of Chemicals in different industries such as, Chemical processes in Food Industries, Polymer industries, Paint Industries, Pharmaceutical Industries, Leather Industries, Beverages.


Chairperson
Board of Studies
Physical Sciences


Chairperson
Faculty of Studies
Science


Controller of Examinations
SVVV, Indore


Joint Registrar
SVVV, Indore



Shri Vaishnav Vidyapeeth Vishwavidyalaya

Shri Vaishnav Institute of Science

Department of Chemistry

Generic Elective Course

Choice Based Credit System (CBCS)

Unit-II Concept of Sustainability:

Definition and Principles of sustainable development. Concept of Economy, Environmental and Social sustainability. Goal of sustainability. principles of sustainable and green chemistry.

Unit-III Design of safer chemicals:

Adverse effect of chemicals on health and environment. Analysis and development of Green industrial processes. Catalytic methods in green synthesis, safer chemicals - different basic approaches; selection of auxiliary substances (solvents, separation agents).

Unit-IV: Energy Resources

Concept and demand of energy, growing energy needs, renewable and non-renewable sources, use of alternate energy sources, Wind energy, Solar energy, water as source of energy, Biofuels production, use and sustainability.

Unit-V: Case Study

Case studies related to: sustainability and Chemistry

: Nanotechnology in Green Chemistry

: Industrial Green Catalyst

: Environmental engineering and Pollution Prevention.

: Green Building Design

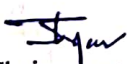
Student may Opt any one from above list.

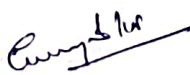
Reference Books:

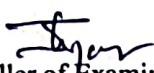
1. Lynn Goldman, Christine Coussens, Implications of nanotechnology for environmental health research, National Academic Press, Washington, 2007

2.. Matlack, A. S. Introduction to Green Chemistry. Marcel Dekker: New York, 2001

3.. Anastas, P. T.; Warner, J. C. Green Chemistry: Theory and Practice. Oxford Univ. Press:Oxford, 1998.


Chairperson
Board of Studies
Physical Sciences


Chairperson
Faculty of Studies
Science


Controller of Examinations
SVVV, Indore


Joint Registrar
SVVV, Indore



Shri Vaishnav Vidyapeeth Vishwavidyalaya

Shri Vaishnav Institute of Science

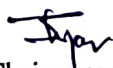
Department of Chemistry

Generic Elective Course

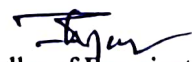
Choice Based Credit System (CBCS)

4 Lynn E. Foster: Nanotechnology: Science, Innovation, and Opportunity, December 21, 2005, Prentice Hall.

5. Fei Wang & Akhlesh Lakhtakia (eds) (2006). Selected Papers on Nanotechnology— Theory & Modeling (Milestone Volume 182). SPIE Press.


Chairperson
Board of Studies
Physical Sciences


Chairperson
Faculty of Studies
Science


Controller of Examinations
SVVV, Indore


Joint Registrar
SVVV, Indore