



Shri Vaishnav Vidyapeeth Vishwavidyalaya

Shri Vaishnav Institute of Science

Department of Chemistry

Generic Elective Course

Choice Based Credit System (CBCS)

SEMESTER VI

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*
GUCH601	UG	Omnipresent Chemistry	3	0	0	3	60	20	20	00	00

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P - Practical; C - Credit;

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

Course Objectives:

1. To educate students about vast application profile of chemistry.
2. To help students understand the integration of chemistry with various scientific disciplines.

Course Outcomes:

After successful completion of the course, students will be able to:

1. Describe the role of chemistry in building cultural heritage.
2. Explain the importance of chemistry in advancing science as a whole.
3. Explain how chemistry is applied behind the scenes.
4. Investigate the role of chemistry in advancing our understanding of human behavior.
5. Discover future trends in chemistry and the career opportunities it presents.

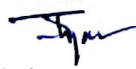
Syllabus:

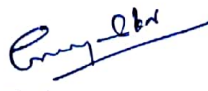
Unit I: Chemistry Behind Heritage

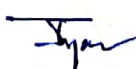
Basics of material science in heritage: metals, stone and glass, Brief history of metal extraction, Uses of metals, Chemical composition of stone and glass, Role of stone and glass in heritage materials, Role of pollutants and climate change in the degradation of heritage materials, Sustainable practices and their chemistry in the conservation of heritage.

Unit II: Fusion of Chemistry with Other Fields

Review integration of key fields like biology, physics, engineering, medicine, environmental science, agriculture and social science with chemistry, Interdisciplinary applications of chemistry.


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Unit III: Role of Chemistry in Making Movies

On-Screen Chemistry: Relationships and dynamics, Character connection, Special effects & visual chemistry, Photographic chemistry, Sound design, Sustainability in film production.

Unit IV: Chemistry of Human Emotion and Behavior


Integration of chemistry and psychology, Understanding emotions and behavior from a chemical perspective: happiness, fear and anxiety, anger, love, sadness, disgust, empathy, Future of chemistry in accepting emotions.

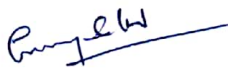
Unit V: Chemistry of Tomorrow

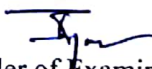
Overview of futuristic chemistry: sustainable and green chemistry, nanotechnology and materials chemistry, Artificial intelligence and machine learning in chemistry, Chemistry in energy and environmental solutions, Future trends and career opportunities in chemistry.

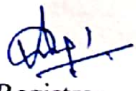
References:

1. Chemistry for Cultural Heritage by Loredana Rizzo and Paolo Colomban (2016).
2. Materials and Techniques in Art Conservation by Andrew Oddy (2001).
3. Chemistry in the Community: A Contextual Introduction to Chemistry by M. S. Baird et al. (2015).
4. The Chemistry of Emotions: A Practical Guide to Understanding and Improving Your Emotional Health by J. B. Watson (2010).
5. Molecules of Emotion: The Science Behind Mind-Body Medicine by Candace B. Pert (1997).
6. The Future of Chemistry: The Impact of New Technologies edited by William J. Leith (2007).
7. Future Directions in the Chemical Sciences edited by Richard D. C. (2014).
8. Chemistry of the Future: The Transformation of Modern Science by Peter Atkins (2013).


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