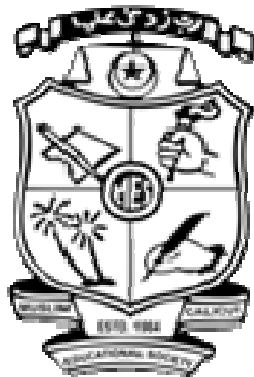


# MES College Nedumkandam

Affiliated to Mahatma Gandhi University, Kottayam and Accredited by NAAC



## Course Outcome- Chemistry

For 2020-21 Academic year

Chembalam PO, Idukki District, Kerala

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# BSc Chemistry

## Semester: 1

Course code	Course Title	Course Outcome	
CH1CRT01	General and Analytical Chemistry	CO1	Students can scientifically identify and systematically analyze research problems
		CO2	Students can conduct analytical methods independently
		CO3	Students will be able to evaluate analytical data
Course code	Course Title	Course Outcome	
CH1VOT01	Industrial Aspects of Inorganic and Organic Chemistry	CO1	Can classify petroleum and non-petroleum fuels
		CO2	Can identify industrially important organic compounds
		CO3	Can identify industrially important destruction processes and prevention methods
Course code	Course Title	Course Outcome	
	Partial Differentiation, Matrices, Trigonometry & Numerical Methods	CO1	Be familiar with the modeling assumptions and derivations that lead to PDEs
		CO2	Discuss the concept of rank of a matrix.
		CO3	A brief outline of trigonometrical series
		CO4	Explain how to determine the square root of a real number by N-R method

## Semester: 2

Course code	Course Title	Course Outcome	
CH2CRT02	Theoretical and inorganic chemistry	CO1	Students can differentiate different properties of elements
		CO2	Can predict type of bonding in different compounds
		CO3	Students can explain shapes of different molecules
		CO4	Students will be able to predict the properties of elements from their atomic number
		CO5	Students can outline various methodologies for structural classification of atoms and molecules

Course code	Course Title	Course Outcome	
CH2VOT02	Chemical industries and industrial aspects of physical chemistry	CO1	Can identify various catalytic reactions used in industrial processes
		CO2	Able to discuss about the quality and different methods of purification of water
		CO3	Can recommend suitable industrial processes for the preparation of plastic polymer articles
		CO4	Can explore applications of colloids
		CO5	Can expertise the performance of lubricants and batteries

**Semester: 3**

Course code	Course Title	Course Outcome	
CH3CRT03	Organic Chemistry – I	CO1	Representation of molecules
		CO2	Identification of stereoisomerism of organic molecules
		CO3	Classification of hydrocarbons
Course code	Course Title	Course Outcome	
CH3VOT03	Unit Operations in Chemical Industry	CO1	Can differentiate operations according to industrial activities
		CO2	Classification of various instruments during different processes
		CO3	Can design various stages of purification of industrial chemicals
Course code	Course Title	Course Outcome	
CH3VOT04	Unit Processes in Organic Chemicals Manufacture	CO1	Identification of various chemicals for organic chemicals manufacture
		CO2	Differentiate between continuous and batch processes
		CO3	Can illustrate bulk manufacture of important organic chemicals
Course code	Course Title	Course Outcome	
MM3CRT01	Calculus	CO1	Understand the consequences of various mean value theorems for differentiable functions.
		CO2	Understand the consequences of First Derivative Test for Extreme Values.
		CO3	Sketch curves in Cartesian and polar

			coordinate systems.
		CO4	Analysis of basic concepts and a deep insight of Integral Calculus.

### Semster IV

Course code	Course Title	Course Outcome	
CH4CRT04	Organic Chemistry – II	CO1	Can categorize various organic compounds
		CO2	Can identify different organic systems based on positional isomers
		CO3	Can recommend synthetic strategy for various compounds
		CO4	Students will be able to categorize various class of organic reagents
		CO5	Can predict products and mechanism of various reactions
Course code	Course Title	Course Outcome	
CH4VOT05	Instrumental methods of chemical analysis-I	CO1	Students can identify suitable instrument for the various spectroscopic and morphological analysis
		CO2	Can explain working principle of important scientific instruments
		CO3	Can characterize various instruments and transducers
		CO4	Able to conduct separation of mixture of chemicals chromatographically
		CO5	Able to operate various potentiometric and nonpotentiometric instruments
Course code	Course Title	Course Outcome	
CH4VOT06	Instrumental methods of chemical analysis-II	CO1	Able to explain applications of telemetry
		CO2	Can categorize different industrial analytical instruments for the measurement of temperature and pressure
		CO3	Can analyze various chemicals through thermoanalytical methods
		CO4	Can explain theory of supercritical fluid chromatography
		CO5	Able to conduct surface analysis using various microscopic techniques

**Semester: 5**

<b>Course code</b>	<b>Course Title</b>	<b>Course Outcome</b>	
CH5CRT05	Environmental Studies and Human Rights	CO1	Identification and recommend solutions for environmental issues
		CO2	Students can discuss green chemical protocols and environmental aspects of nuclear chemistry
		CO3	Students will be aware of human right violations and various organizations associated with it
<b>Course code</b>	<b>Course Title</b>	<b>Course Outcome</b>	
CH5CRT06	Organic Chemistry – III	CO1	Able to outline properties of amines, diazonium salts and active methylene compounds
		CO2	Students will be able to classify various drugs, dyes and carbohydrates
		CO3	Can identification and applications of polymers
<b>Course code</b>	<b>Course Title</b>	<b>Course Outcome</b>	
CH5CRT07	PHYSICAL CHEMISTRY – I	CO1	Can differentiate states of matter
		CO2	Solve simple structures and properties of solids
		CO3	Can explore the potential of surface phenomenon
<b>Course code</b>	<b>Course Title</b>	<b>Course Outcome</b>	
CH5CRT08	PHYSICAL CHEMISTRY – II	CO1	Solve quantum mechanical problems
		CO2	Identify molecular structure spectroscopically
<b>Open course</b>			
<b>Course code</b>	<b>Course Title</b>	<b>Course Outcome</b>	
CH5OPT01	Chemistry in Everyday Life	CO1	Know how about day to day chemicals
		CO2	Able to classify drugs, polymers and fertilizers
		CO3	Understand applications of nanomaterials

**Semester: 6**

Course code	Course Title	Course Outcome	
CH6CRT10	ORGANIC CHEMISTRY – IV	CO1	Can Classify terpenoids, alkaloids and amino acids
		CO2	Able to differentiate thermal and photochemical reactions
		CO3	can calculate $\lambda_{\max}$ of organic molecules
		CO4	Can identify the structure of organic compounds from spectroscopic data
		CO5	Can identify mechanism of enzyme action
Course code	Course Title	Course Outcome	
CH5CRT06	Organic Chemistry – III	CO1	Able to outline properties of amines, diazonium salts and active methylene compounds
		CO2	Students will be able to classify various drugs, dyes and carbohydrates
		CO3	Can identification and applications of polymers
Course code	Course Title	Course Outcome	
CH6CRT11	PHYSICAL CHEMISTRY – III	CO1	Able to apply the different laws of thermodynamics
		CO2	Identify relative strengths of acids and bases and their comparison
		CO3	Extract information from different phase equilibrium systems
		CO4	Can determine kinetics of a reaction
		CO5	Can illustrate various thermodynamic processes
Course code	Course Title	Course Outcome	
CH6CRT12	PHYSICAL CHEMISTRY – IV	CO1	Can examine the symmetry elements present in different molecules
		CO2	Can assign point groups to various molecules
		CO3	Differentiate strong and weak electrolytes and determination of its equivalent conductance
		CO4	Can evaluate EMF of cells
		CO5	Can calculate the molecular mass of an

		unknown substance from colligative property measurement
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