

# Noorul Islam Centre for Higher Education

(Deemed to be University u/s 3 of the UGC Act 1956)

Kumaracoil, Thuckalay, Kanyakumari District - 629 180

Accredited by NAAC with 'A' Grade

CH27 MSc, Chemistry



## Student Performance and Learning Outcomes

## CH27 MSc, Chemistry

Programme Outcome(PO)	
PO-A	Students will have the ability to: Work effectively and safely in the chemical laboratory
PO-B	Think critically and analyzing chemical problems
PO-C	Use laboratory data and instrumentation values to analyze chemical molecules
PO-D	Apply modern methods of analysis to chemical systems in a laboratory
PO-E	Work in teams as well as individually

PROGRAM SPECIFIC OUTCOMES (PSOs)	
PSO1	The ability to design, identify, formulate and solve problems related to chemistry.
PSO2	The ability to adapt scientific knowledge of chemistry in diverse fields with related to pharma and allied areas
PSO3	The ability to perform different experimental techniques and interpret data

Sl.No	Subject Code	Subject Name
SEMESTER II		
1.	CH2705	Organic chemistry-II
2.	CH2706	Inorganic chemistry-II
3.	CH2707	Physical chemistry-II
4.	CH2708	Basic principles of instrumental techniques
SEMESTER IV		
5.	CH27A3	Advanced organic chemistry
6.	CH27A4	Inorganic materials & Bioinorganic Chemistry
7.	CH27A5	Physical Chemistry-catalysis

CH2705 -Organic chemistry-II	
CO1	The students will be able to predict the nucleophilic substitution reaction course which will be applied in practicals.
CO2	understand the mechanism of electrophilic substitution reaction and also naming reactions
CO3	apply the complexity of elimination reactions along with some specific eliminations.
CO4	understand the natural products chemistry.
CO5	gain knowledge about alkaloids and terpenes.

CH2706- Inorganic chemistry-II	
CO1	The students will be able to understand the key features of coordination compounds.
CO2	predict the kinetic stability of coordination complexes.
CO3	calculate the CFT and magnetic properties of coordination compounds.
CO4	get an idea to synthesize metal carbonyls and its properties.

CO5	recognize the key mechanistic steps of organometallic compounds.
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#### CH2707 -Physical chemistry-II

CO1	The students will be able to impart knowledge about various photophysical processes.
CO2	determine the partial molar quantities
CO3	Analyse both the classical and quantum mechanics
CO4	Understand the postulates and derive the systems
CO5	Apply different methods to He atom

#### CH2708 -Basic principles of instrumental techniques

CO1	The students will be able to demonstrate the basic knowledge of UV and IR spectroscopy.
CO2	understand the working principle of NMR and ESR spectroscopy.
CO3	get an idea about mass spectroscopy and also analyze the samples by thermal methods.
CO4	explain the working principle of Raman and mossbauer spectroscopy.
CO5	recognize the crystal structures by using XRD and neutron diffraction studies.

#### CH27A3 -Advanced organic chemistry

CO1	The students will be able to emphasize the applications of photochemistry.
CO2	gain knowledge of molecular rearrangements, synthesis of organic molecules.
CO3	utilize the knowledge of vitamins, steroids and antibiotics.
CO4	understand green chemistry in need for the hour.
CO5	synthesize the naturally occurring compounds.

#### CH27A4-Inorganic materials & Bioinorganic Chemistry

CO1	The students will be able to gain knowledge to prepare ceramic materials.
CO2	understand the synthetic methods of pigments.
CO3	recognize the structure and arrangement of clusters, cages, chains and rings.
CO4	get an idea to interpret the preparation and applications of silicon.
CO5	demonstrate the importance of metals in biological systems.

#### CH27A5-Physical Chemistry-catalysis

CO1	The students will be able to define and derive different catalysis
CO2	Choose appropriate catalyst for industrial purposes
CO3	describe micellar catalysis, inhibition in micellar solutions
CO4	explain petroleum refining, ethylene based processes.
CO5	Apply the mechanisms of surface reactions