



# Annai Hajira Women's College

Melapalayam, Tirumelveli-05

Department of Chemistry

Syllabus 2020 - 2021

PO, PSO & CO's of Chemistry

UG-Programme – CBCS – SEMESTER PATTERN

Course Code: CH



Department of  
Chemistry

e-mail:chemistry@annaihajiracollege.com

UG -Programme - Course Structure under CBCS

B.Sc., Chemistry

(Applicable to the candidates admitted from the academic year 2020-2021 onwards)

FIRST SEMESTER

Subject Code	Subject Title	Lecture Hours	LAB Hours	Credits
A1TL11	Part I : Pothu Tamil Paper I	6	0	4
A2EN11	Part II : <i>Communicative English Paper I</i>	6	0	4
AMCH11	Part III Core–Paper I: <i>Physical Chemistry I</i>	4	0	4
APPS11	Add on Major: <i>Professional English for Physical Sciences I</i>	4	0	4
AAMA11	Allied I Paper 1 : Algebra and Differential Equations	4	0	4
AEVS11	Common: <i>Environmental Studies</i>	0	0	2
AMCHP1	Major Practical I: <i>Inorganic Quantitative Analysis I (Volumetric Analysis I)</i>	2	0	2
Total	(6T + 1P Courses)	26	2	24

SECOND SEMESTER

Subject Code	Subject Title	Lecture Hours	LAB Hours	Credits
A1TL21	Part I : Pothu Tamil Paper II	6	0	4
A2EN21	Part II : <i>Communicative English Paper II</i>	6	0	4
AMCH21	Core Paper III : <i>Inorganic Chemistry I</i>	4	0	4
APPS21	Core Paper IV: Add on Major: <i>Professional English for Physical Sciences II</i>	4	0	4
AMCHP2	Major Practical II : <i>Inorganic Quantitative (Volumetric) Analysis II</i>	0	2	2
AAMA21	Allied I Paper 2 : Vector Calculus and Fourier Series	4	0	4
AVBE21	Part IV (Common) : <i>Value Based Education</i>	2	0	2
Total	(6T + 1P Courses)	26	2	24

THIRD SEMESTER

Subject Code	Subject Title	Lecture Hours	LAB Hours	Credits
A1TL31	Part I: <i>Pothu Tamil – Paper III</i>	6	0	4
A2EN31	Part II: <i>General English – Paper III</i>	6	0	4
AMCH31	Core – Paper V: <i>Organic chemistry I</i>	4	0	4
ASCH3A	Skill Based Core I: <i>Agro Chemistry</i>	4	0	4
AAPH11	Allied II - Paper I: <i>Allied Physics I</i>	2	0	3
ANCS3B	Non-Major Elective - Paper I: <i>Basic Programming Design</i>	2	0	2
AYOG3A	Part IV (Common): <i>Yoga</i>	2	0	2
AMCHP3	Major Practical III : <i>Inorganic Qualitative Analysis</i>	0	2	1
AAPHP1	Allied Physics Practical I	0	2	1
Total	(7T + 2P Courses)	26	4	25

FOURTH SEMESTER

Subject Code	Subject Title	Lecture Hours	LAB Hours	Credits
A1TL41	Part I : <i>Pothu Tamil Paper IV</i>	6	0	4
A2EN41	Part II : <i>General English Paper IV</i>	6	0	4
AMCH41	Paper Core VI: <i>Organic Chemistry II</i>	4	0	4
AMCHP4	Major Practical IV : <i>Inorganic Preparation and Physical Constant</i>	0	2	1
AAPH21	Allied II - Paper I: <i>Allied Physics I</i>	2	0	3
AAPHP2	Allied Physics Practical II	0	2	1
ASCH41	Part III : <i>Skilled Based Core II: Chemistry in Medicine</i>	4	0	4
ANCS41	Non Major Elective II : <i>HTML</i>	2	0	2
ACDE41	Part IV (Common): <i>Computers for Digital Era</i>	2	0	2
AAEA41	Part V : <i>Extension Activity : NCC/NSS/YRC/YWF</i>	-	-	1
Total	(7T + 2P Courses)	26	4	26

FIFTH SEMESTER

Subject Code	Subject Title	Lecture Hours	LAB Hours	Credits
AMCH51	Part III Core VII: Inorganic Chemistry II	4	0	4
AMCH52	Part III Core VIII : Physical Chemistry II	6	0	4
AMCH53	Part III Core IX : Organic Chemistry III	6	0	4
AECH51	Part III Major Elective I : Polymer Chemistry	4	0	4
AMCHP5	Major Practical V : Organic Analysis	0	8	4
AMCHP6	Major Practical VI: Gravimetric Estimation & Inorganic Preparation			
ACSB51	Part IV (Common) : Personality Development	2	0	2
Total	(5T + 2P Courses)	22	8	22

SIXTH SEMESTER

Sub - Code	Subject Title	Lecture Hours	LAB Hours	Credits
AMCH61	Part III Core X: Inorganic Chemistry III	5	0	4
AMCH62	Part III Core XI : Physical Chemistry III	5	0	4
AMCH63	Part III Core XII : Organic Chemistry IV	5	0	4
AECH62	Major Elective II : Nano Chemistry	4	0	4
SMCHP7	Major Practical VII: Gravimetric Estimation & Organic Preparation	0	4	2
SMCH6P	Major Project	0	7	7
Total	(4T + 1P+ 1Project Courses)	19	11	25

## Programme Outcomes

<b>Intellectual Skills</b>	
<b>PO1</b>	To demonstrate, solve and understand major concepts in all the disciplines of chemistry (viz., Organic Chemistry, Inorganic Chemistry, Physical Chemistry, Nano Chemistry, Polymer Chemistry, Analytical Chemistry, Medicinal Chemistry and Agro chemistry) covering the entire principles and perspectives.
<b>PO2</b>	To understand and apply the concept of chemistry to inter relate and interact to the other subject like mathematics, physics and computer science.
<b>PO3</b>	To develop critical thinking potential through solving problems methodically, independently and draw a logical conclusion by using basic chemistry knowledge and concepts.
<b>PO4</b>	To understand the role of chemistry in our society and become potent enough to explore new areas of research both in chemistry and in allied fields of research innovation and development.
<b>PO5</b>	To analyse and explain why chemistry is an integral activity for addressing social, economic, and environmental problems.
<b>Practical Skills</b>	
<b>PO6</b>	To impart the students, the knowledge about various chemical reagents and reactions. Thereby, improve their skills of handling the corrosive, poisonous, explosive and carcinogenic chemicals making themselves employable in any kind of chemical industries.
<b>PO7</b>	To create awareness to eco-friendly microscale experiments in practical and project courses.
<b>PO8</b>	To apply critical thinking and the scientific knowledge to design, carry out, record and analyze the results of chemical reactions.
<b>Transferrable Skills</b>	
<b>PO9</b>	To apply the skills and knowledge gained through the subject to real life situations.
<b>PO10</b>	To remember and to expand the knowledge available opportunities related to chemistry in the competitive examinations and the government services through public service commission particularly in the field of food safety, health inspector, pharmacist, forensic science with confidence.
<b>PO11</b>	To understand and foster ethical awareness/reasoning, social values/responsibility for maintaining and protecting the surrounding environment for improved living conditions.
<b>PO12</b>	To provide opportunity to act as team player and as a member of an interdisciplinary problem solving team by contributing in laboratory, field based situation and industry through evaluation skills.
<b>PO13</b>	To clearly communicate the results of scientific work in oral, written and electronic formats to both scientists and the public at large.

## Programme Specific Outcomes

On completion of B.Sc. in Chemistry the students will be able to

<b>PSO1</b>	Understand the existence of matter in the universe as solids, liquids, and gases which are composed of molecules, atoms and sub atomic particles.
<b>PSO2</b>	Understand the importance of the elements in the periodic table including their physical and chemical nature and role in the daily life.
<b>PSO3</b>	Understand the concept of chemistry to inter relate and interact with the other subjects namely mathematics, physics, biological science etc.
<b>PSO4</b>	Become familiar with the specific aspects of branches of chemistry like Organic Chemistry, Inorganic Chemistry, Physical Chemistry, Nano Chemistry, Polymer Chemistry and Analytical Chemistry
<b>PSO5</b>	Grasp the mechanisms of different types of reactions both organic and inorganic and will be able to predict the products of unknown reactions.
<b>PSO6</b>	Get exposures of a breadth of experimental techniques using modern instrumentation.
<b>PSO7</b>	Achieve the skills required to succeed in graduate level, professional level and the chemical industry like agro product, Fertilizer industries etc.
<b>PSO8</b>	Analyse inorganic salt mixtures and organic compounds both qualitatively and quantitatively using the classical methods of analysis in practical classes.
<b>PSO9</b>	Synthesize the chemical compounds by manoeuvring the addition of reagents under optimum reaction conditions.
<b>PSO10</b>	Learn the laboratory skills and to transfer and interpret knowledge entirely in the working environment.

## Course Outcomes

### FIRST SEMESTER

#### The Students are able to:

AMCH11	<p align="center"><b>Core 1 :</b> Physical Chemistry I</p>	<p><b>CO1</b> Remember the concepts of ideal and real gases  <b>CO2</b> Explain the basics of Photochemistry  <b>CO3</b> Implement the working principles of Nuclear reactor and the applications of radio isotopes  <b>CO4</b> Examine the structure of crystals by X-ray diffraction methods  <b>CO5</b> Apply the colligative properties of dilute solutions in solving problems</p>
APPS11	<p align="center"><b>Add on Major:</b> Professional English for Physical Sciences I</p>	<p><b>CO1</b> Recognise their own ability to improve their own competence in using the language  <b>CO2</b> Use language for speaking with confidence in an intelligible and acceptable manner  <b>CO3</b> Understand the importance of reading for life  <b>CO4</b> Read independently unfamiliar texts with comprehension  <b>CO5</b> Understand the importance of writing in academic life  <b>CO6</b> Write simple sentences without committing error of spelling or grammar</p>
AMCHP1	<p align="center"><b>Major Practical I</b> Inorganic Quantitative (Volumetric) Analysis I</p>	<p><b>CO1</b> State the principles of using standard and link solutions and making up of given solution  <b>CO2</b> Implement the role of indicators at different pH range in the acidimetry and alkalimetry.  <b>CO3</b> Interpret the different types of Volumetric analysis.  <b>CO4</b> Apply acidimetric and alkalimetric method for the quantitative volumetric estimation of acids and bases  <b>CO5</b> Estimate the amount of inorganic compounds permanganometrically.  <b>CO6</b> Apply various volumetric procedures for the estimation of any inorganic compound.</p>
AEVS11	<p align="center"><b>Part IV:</b> Environmental Studies</p>	<p><b>CO1</b> Define Ecosystem and list the various types of Ecosystem  <b>CO2</b> Classify the natural resources</p>

	<p><b>CO3</b> Compare and contrast between global, national and regional biodiversity</p> <p><b>CO4</b> Analyze the various factors causing environmental pollution</p> <p><b>CO5</b> Recognize the exploitation of natural resources and the growing energy needs</p> <p><b>CO6</b> Examine the importance of using renewable energy resources</p> <p><b>CO7</b> Judge the concept of globalization</p>
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## SECOND SEMESTER

The Students are able to:

<b>AMCH21</b>	<p><b>Core 3:</b> Inorganic Chemistry I</p>	<p><b>CO1</b> Explain the different atom models</p> <p><b>CO2</b> List the postulates of Bohr's theory.</p> <p><b>CO3</b> State the general characteristics of p block elements</p> <p><b>CO4</b> Describe the diagonal relationship between B and Si.</p> <p><b>CO5</b> Classify s, p, d and f block elements</p> <p><b>CO6</b> Distinguish between the types of chemical bonding and compare the hybridization and geometry of inorganic molecules</p> <p><b>CO7</b> Justify the Position of Hydrogen in the periodic table</p>
<b>APPS21</b>	<p><b>Core 4:</b> Add on Major: Professional English for Physical Sciences II</p>	<p><b>CO1</b> Develop their competence in the use of English with particular reference to the workplace situation.</p> <p><b>CO2</b> Enhance the creativity of the students, which will enable them to think of innovative ways to solve issues in the workplace.</p> <p><b>CO3</b> Develop their competence and competitiveness and thereby improve their employability skills.</p> <p><b>CO4</b> Attend interviews with boldness and confidence</p> <p><b>CO5</b> Adapt easily into the workplace context, having become communicatively competent</p>
<b>AMCHP2</b>	<p><b>Major Practical II</b> Inorganic Quantitative Analysis II (Volumetric)</p>	<p><b>CO1</b> Understand the principles of using standard and link solutions and making up of given solution.</p> <p><b>CO2</b> Apply iodimetry and dichrometry methods for the quantitative volumetric estimation.</p> <p><b>CO3</b> Estimate the amount of inorganic compounds</p>

		<p>complexometrically.</p> <p><b>CO4</b> Understand the role of EDTA in complexometry titrations.</p> <p><b>CO5</b> Apply various volumetric procedure for the estimation of any inorganic compounds</p>
<b>AVBE21</b>	<b>Part IV: Value Based Education</b>	<p><b>CO1</b> State the various parameters of social justice.</p> <p><b>CO2</b> List the factors responsible for social justice.</p> <p><b>CO3</b> Discuss the rights of marginalized people like women, children, dalits, minorities, physically challenged etc.</p> <p><b>CO4</b> Examine the Social issues caused due to alcoholism, drug addiction, poverty, unemployment etc.</p> <p><b>CO5</b> understand the concept of globalization.</p> <p><b>CO6</b> Appraise the values, ethics, duties and responsibilities of each individual in the society.</p>

### THIRD SEMESTER

The Students are able to:

<b>AMCH31</b>	<b>Core 5: Organic Chemistry I</b>	<p><b>CO1</b> Acquire knowledge on the basic concepts in organic chemistry</p> <p><b>CO2</b> Rationalize the stability of radicals, carbocations and carbanions</p> <p><b>CO3</b> Execute the rules of IUPAC nomenclature to name different organic compounds</p> <p><b>CO4</b> Understand the mechanisms of substitution and elimination reactions</p> <p><b>CO5</b> Apply Zeisel's method to identify the number of methoxy groups in organic compounds</p>
<b>AMCHP3</b>	<b>Major Practical-III Inorganic Qualitative Analysis</b>	<p><b>CO1</b> Examine the given inorganic salt systematically</p> <p><b>CO2</b> Analyze the acid radicals present in the given inorganic salt</p> <p><b>CO3</b> Eliminate the interfering acid radicals</p> <p><b>CO3</b> Analyze the basic radical systematically</p> <p><b>CO4</b> Test the basic radicals present in the given salt</p> <p><b>CO5</b> Develop their skill of analysing the given inorganic salt correctly</p>
<b>ASCH31</b>	<b>Skill Based Core I Agro Chemistry</b>	<p><b>CO1</b> Distinguish between micro and macro nutrients for plant growth</p> <p><b>CO2</b> Classify pesticides into insecticides, fungicides and herbicides</p> <p><b>CO3</b> Discuss the beneficial role of soil organisms</p> <p><b>CO4</b></p>

		<p><b>CO4</b> Acquire knowledge about the physical aspects of soil</p> <p><b>CO5</b> Identify acid, alkaline and saline soils</p> <p><b>CO6</b> Estimate the total organic compound, available nitrogen and phosphorus in the soil sample</p>
<b>AACH11</b>	<p><b>Allied I</b> Allied Chemistry I</p>	<p><b>CO1</b> Explain the atomic structure and bonding</p> <p><b>CO2</b> Understand the various reactions of organic compounds</p> <p><b>CO3</b> Identify the photochemical reactions</p> <p><b>CO4</b> Appreciate the importance of polymers and polymer science.</p> <p><b>CO5</b> Gain knowledge about the lubricants and cosmetics used in the modern world.</p>
<b>AACHP1</b>	<p><b>Allied Chemistry Practical I</b> Inorganic Quantitative Analysis</p>	<p><b>CO1</b> Recognize the importance of Quantitative analysis</p> <p><b>CO2</b> Distinguish between the different types of Volumetric analysis</p> <p><b>CO3</b> Develop the skill of making up of solutions of primary and secondary standards</p> <p><b>CO4</b> Specify the role of indicators at different pH range in acidimetry and alkalimetry.</p> <p><b>CO5</b> Report the strength of the solution and the amount of the substance present in the given solution.</p>

#### FOURTH SEMESTER

The Students are able to:

<b>AMCH41</b>	<p><b>Core 6:</b> Organic Chemistry II</p>	<p><b>CO1</b> Acquire knowledge about aldehydes and ketones</p> <p><b>CO2</b> Explain the various methods of preparation of carboxylic acids</p> <p><b>CO3</b> To understand the importance of active methylene, organometallic and organo sulphur compounds</p> <p><b>CO4</b> State the uses of chloral, acrolein, crotonaldehyde and succinaldehyde</p> <p><b>CO5</b> Understand the mechanism of important reactions and tautomerism</p> <p><b>CO5</b> Differentiate between aldol and crossed aldol condensation reactions</p>
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<p><b>ASCH41</b></p>	<p><b>Skill Based Core II: Chemistry in Medicine</b></p>	<p><b>CO1</b> Acquire knowledge on first aid and the important rules to be followed  <b>CO2</b> Classify the common poisons  <b>CO3</b> Differentiate between acid poisoning and basic poisoning  <b>CO4</b> Recognize the causes and treatment of some common diseases  <b>CO5</b> List the biological importance of sodium, potassium, calcium, iodine and copper  <b>CO6</b> Apply the knowledge of Benedict's test to find the level of sugar in urine  <b>CO7</b> Gain awareness on the deficiency diseases of various vitamins</p>
<p><b>AMCHP4</b></p>	<p><b>Major Practical IV: Organic Preparations &amp; Physical Constants Determination</b></p>	<p><b>CO1</b> State the procedure for the preparation of organic compounds  <b>CO2</b> Understand the mechanisms involved in the preparation of organic compounds  <b>CO3</b> Synthesize some important organic compounds  <b>CO4</b> Acquire knowledge about the importance of physical constants  <b>CO5</b> Check the purity of compounds by determining the melting point and boiling point.</p>
<p><b>AACH21</b></p>	<p><b>Allied II Allied Chemistry II</b></p>	<p><b>CO1</b> Discuss the chemistry of basic aromatic compounds.  <b>CO2</b> Distinguish between nuclear fission and fusion  <b>CO3</b> Classify carbohydrates, amino acids and proteins  <b>CO4</b> Acquire knowledge on fuels, fertilizers, cement and glass.  <b>CO5</b> Appreciate the cleansing action of soaps and detergents</p>
<p><b>AACHP2</b></p>	<p><b>Allied Practical II Inorganic Qualitative Analysis</b></p>	<p><b>CO1</b> Acquire knowledge on the systematic Qualitative Analysis of inorganic salts.  <b>CO2</b> Analyze the acid and basic radicals present in the given salt systematically.  <b>CO3</b> Recognize the importance of elimination of the interfering basic radicals.  <b>CO4</b> Identify the acid and basic radicals present in the given salt.  <b>CO5</b> Develop the skill of qualitative analysis of any given inorganic salt.</p>

## FIFTH SEMESTER

The Students are able to:

<b>AMCH51</b>	<b>Core 7: Inorganic Chemistry II</b>	<p><b>CO1</b> Acquire knowledge on the isolation methods of inert gases from the atmosphere.</p> <p><b>CO2</b> State the uses of noble gases</p> <p><b>CO3</b> Explain the characteristics of d block elements.</p> <p><b>CO4</b> Differentiate d-block and f- block elements.</p> <p><b>CO5</b> Recognize the principle of metallurgy</p> <p><b>CO6</b> Compare various titrimetry</p> <p><b>CO7</b> Judge the role of EDTA in complexometrytitrations</p>
<b>AMCH52</b>	<b>Core 8: Physical Chemistry II</b>	<p><b>CO1</b> Understand the basic concepts of I law of thermodynamics</p> <p><b>CO2</b> Formulate the II law of thermodynamics</p> <p><b>CO3</b> Recognize the concept of chemical equilibrium</p> <p><b>CO4</b> Differentiate between the various methods of expressing the concentration of solutions</p> <p><b>CO5</b> Acquire knowledge on electrochemistry and its application</p>
<b>AMCH53</b>	<b>Core 9: Organic Chemistry III</b>	<p><b>CO1</b> Acquire detailed knowledge on stereochemistry.</p> <p><b>CO2</b> UnderstandHuckel's rule.</p> <p><b>CO3</b> Apply Cahn-In gold-Prelog rules to determine R and S notations for optical isomers.</p> <p><b>CO4</b> Discuss about the conformations of cycloalkanes.</p> <p><b>CO5</b> Explain the concept of aromaticity</p> <p><b>CO6</b> Appreciate the mechanisms of nitration, halogenation, sulphonation and Friedel-Crafts reaction.</p>
<b>AECH51</b>	<b>Major Elective I Polymer Chemistry</b>	<p><b>CO1</b> State the concept of polymerization.</p> <p><b>CO2</b> Distinguish the different types of polymer.</p> <p><b>CO3</b> List the characteristics of polymers.</p> <p><b>CO4</b> Acquire knowledge about the polymerization techniques and polymer processing.</p> <p><b>CO5</b> Describe the chemistry of individual polymers.</p> <p><b>CO6</b> Explain the recent advances in biopolymers and their applications in medicine.</p>
<b>ACSB51</b>	<b>Skill Based Common Personality Development</b>	<p><b>CO1</b> Acquire a clear idea about personality, self-awareness and goal setting.</p> <p><b>CO2</b> List the advantages and disadvantages of self-monitoring.</p>

		<p><b>CO3</b> Develop team building, leadership and negotiation skills.</p> <p><b>CO4</b> Appreciate the importance of communication and acquire effective communication skills.</p> <p><b>CO5</b> Solve the barriers in communication.</p>
<b>AMCHP5</b>	<b>Major Practical V Organic Analysis</b>	<p><b>CO1</b> Understand the analytical procedure used to identify the given organic compound.</p> <p><b>CO2</b> Analyse systematically and identify saturation/unsaturation and aliphatic/aromatic nature of the given organic compound.</p> <p><b>CO3</b> Test and find the elements (other than C, H and O) present in the given compound.</p> <p><b>CO4</b> Identify the functional group present in the given organic compound.</p> <p><b>CO5</b> Develop the skills of preparation of derivatives for all the functional groups.</p>
<b>AMCHP6</b>	<b>Major Practical VI Gravimetric Estimation &amp; Inorganic Preparation</b>	<p><b>CO1</b> Understand the principle of gravimetric analysis.</p> <p><b>CO2</b> List the conditions for precipitation reactions.</p> <p><b>CO3</b> Explain the mechanisms involved in the preparation of organic compounds.</p> <p><b>CO4</b> Estimate the given substance gravimetrically.</p> <p><b>CO5</b> Develop the skill of synthesizing inorganic compounds followed by drying and recrystallization.</p>

#### SIXTH SEMESTER

The Students are able to:

<b>AMCH61</b>	<b>Core 10 : Inorganic Chemistry III</b>	<p><b>CO1</b> Compare the structural and stereoisomerism in tetrahedral, square planar and octahedral complexes.</p> <p><b>CO2</b> Understand the Splitting of orbitals in octahedral and tetrahedral geometry.</p> <p><b>CO3</b> Develop the skill of calculating the crystal field stabilization energy.</p> <p><b>CO4</b> Explain the mechanism of substitution reactions in octahedral and square planar complexes.</p> <p><b>CO5</b> Appreciate the process of photochemical conversion and storage of solar energy.</p>
<b>AMCH62</b>	<b>Core 11 : Physical Chemistry - III</b>	<p><b>CO1</b> Explain the principle and applications of Raman, NMR, ESR and mass spectroscopy.</p> <p><b>CO2</b> Compare the characteristics of first, second, third and zero order reactions and determine their rate constants.</p> <p><b>CO3</b> State Ostwald's dilution law, common ion effect and solubility product.</p>

		<p><b>CO4</b> Apply phase rule and draw phase diagrams for one and two components systems.</p> <p><b>CO5</b> Describe the various methods of synthesis of nanomaterials.</p>
<b>AMCH63</b>	<b>Core 12 : Organic Chemistry IV</b>	<p><b>CO1</b> Acquire knowledge on carbohydrates, their importance and structure.</p> <p><b>CO2</b> Explain the chemistry of aromatic compounds like phenols, aldehydes, ketones and acids.</p> <p><b>CO3</b> Discuss the mechanisms of rearrangement reactions.</p> <p><b>CO4</b> Appreciate the structural elucidation of natural products, alkaloids and terpenoids.</p> <p><b>CO5</b> Recognize various spectroscopic techniques and their applications in organic chemistry.</p>
<b>AECH62</b>	<b>Major Elective –III Nano Chemistry</b>	<p><b>CO1</b> Obtain knowledge on the basic concepts of nanochemistry.</p> <p><b>CO2</b> Understand the synthesis of nanomaterials by various methods</p> <p><b>CO3</b> Describe the importance of nanocatalysts and carbon based nanomaterials.</p> <p><b>CO4</b> Discuss the structure and properties of graphite, diamond and fullerenes.</p> <p><b>CO5</b> Appreciate the characterization and applications of nanomaterials.</p>
<b>AMCHP7</b>	<b>Major Practical – VII Physical Chemistry Experiments</b>	<p><b>CO1</b> Determine the molecular weight of any given substance.</p> <p><b>CO2</b> Apply the principle of conductometry and potentiometry in estimation of unknown compound.</p> <p><b>CO3</b> Determine the concentration of unknown compound.</p> <p><b>CO4</b> Apply the concept of phase equilibria to simple eutectic systems.</p>
<b>AMCH6P</b>	<b>Project</b>	<p><b>CO1</b> Develop the skill of pursuing research in the area of their interest which will improve their research aptitude and increase the contribution of young generation for the development of Chemistry.</p>

Signature of the HoD  
Head of the Department  
**CHEMISTRY**

**ANNAI HAJIRA WOMEN'S COLLEGE,  
MELAPALAYAM - 627 005.**

Signature of the Principal  
**PRINCIPAL**

**ANNAI HAJIRA WOMEN'S COLLEGE  
MELAPALAYAM - 627 005.**