
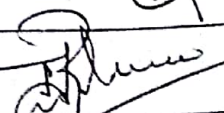
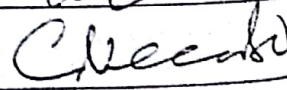
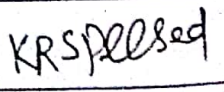
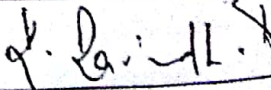
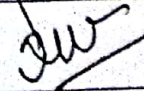


Type (Name) of the Meeting: Board of Studies  
 Department: Chemistry  
 Held on (Date of Meeting): 5.07.2016  
 Time of Meeting: 11.00 A.M  
 Under the Chairmanship of: -  
 Venue of Meeting: FED conference hall

The BOS meeting of Chemistry department was held on FED conference Hall, K.L. University to appear the following agenda

- AGENDA
1. To resolve and recommend the syllabus of M.Sc. Chemistry
  2. To resolve and recommend the syllabus of Int M.Sc. with modular approach

The following members were present

Serial number	Name of the Person	Designation	Institution	Signature
1	Dr. J V Shanmukh Kumar	Professor	K L University	
2	Dr. M V Basavaswara Rao	Professor	Krishna University, Machilipatnam	
	Dr C Venkat Rao	Professor	Sri Venketeswara University, Tirupathi	
	Dr. K R S Prasad	Professor	K L University	
	Dr Ravindhranath	Professor	K L University	
	Dr I V Kasi Viswanath	Assistant Professor	K L University	

5.

## Minutes of the Meeting (BOS)

1. It is resolved & recommended the syllabus of M.Sc. Chemistry

2. It is resolved & recommended the syllabus of Integrated M.Sc. Chemistry with modular approach.

Hence, It was resolved that members came up with suitable justification for the recommendation of the syllabus of both M.Sc. Chemistry & Integrated M.Sc. Chemistry by the next BOS meeting and can be deliberation for the change from the next academic year.



**K L UNIVERSITY**

**DEPARTMENT OF CHEMISTRY**

**2016-2018 M.Sc BATCH Course Outcomes vs Program Outcomes**

**Course Articulation Matrix**

S No	Course Code	Course Title	LTP	Credits	CO NO	Description of the Course Outcome	Program Outcomes						Course Rationale
							1	2	3	4	5	6	
1	16 CY 1101	General Chemistry-I	4-0- 0	4	CO1	Classify and explain of analytical data	2						problem-solving skills to do well in general chemistry, as in many other disciplines
					CO2	Illustrate the Titrimetric Analysis	1						
					CO3	Describe and Apply the Visible spectrophotometric and potentiometric		2					
					CO4	Develop the small computer codes using any one of the languages FORTRAN/C/BASIC	1		3				

*(Signature)*

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2	16 CY 1102	<i>Inorganic Chemistry- I</i>	4-0- 3	7	CO1	The bonding fundamentals for both ionic and covalent compounds, including electronegativities, bond distances and bond energies using MO diagrams and thermodynamic data	2						The skills will be developed in computer-based, structure visualization tools to view molecules, appropriate separation/isolation techniques for different classes of inorganic materials.
					CO2	predicting geometries of simple molecules	1						
					CO3	the use of group theory to recognize and assign symmetry characteristics to molecules and objects, and to predict the appearance of a molecule's vibrational spectra as a function of symmetry	2						
					CO4	the bonding models, structures, reactivities, and applications of coordination complexes, boron hydrides, metal carbonyls, and	3						



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4	16 CY 1104	<i>Physical Chemistry-1</i>	4-0- 3	7	synthesis methods					To gain familiarity with a variety of physico-chemical measurement techniques.			
					CO5	Knowledge in this course will train the students in scientific research approach.			3		2	1	
					CO1	Concepts of Classical thermodynamics & laws of thermodynamics	1					1	
					CO2	Applications of macromolecules & Micells.		2					
					CO3	Discuss the different aspects of kinetics of the types of reactions	1	2					
4	16 CY 1205	<i>General Chemistry-II</i>	4-0- 0	4	CO4	To understand the concepts of photo chemistry & luminescence	2		3				
					CO5	An ability to analyze, generate experimental skills towards the industrial applications.		2		3			
					CO1	Symmetry and Group theory of the molecules	2						
					CO2	Energy associates with the degrees of freedom		2					
					CO3	Classical and quantum theories of Raman and Electronic Spectra of diatomic molecules							
					chemistry qualification also opens up a wide range of alternative career options								














12	16 CY 2112	Natural Products	4-0- 3	7	CO1	Illustrate the synthesis and significance of microbial metabolites	1					secondary metabolites from the from the various plants and animals
					CO2	Outline the origin & chemical nature of Terpenes	1					
					CO3	Outline the origin & chemistry of Alkaloids	1					
					CO4	Demonstrate properties & synthetic methods of peptides	1					
					CO5	to synthesise organic compounds using multi stage reaction path		3	2	3		
13	16 CY 2214	Organic Reaction Mechanisms and organic photochemistry	4-0- 0	4	CO1	Adopt addition and elimination mechanism in order to understand selected named reactions	2					Ability to work out reaction mechanisms and synthetic routes.
					CO2	Conclude classification and mechanistic treatment of nucleophilic, electrophilic and free radical rearrangements.	2					
					CO3	Summarize basic concepts behind organic photo chemistry	2					
					CO4	Select and photo chemical concepts to generate enone and aromatic compounds.	2					

  
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14	16 CY 2215	Organic Spectroscopy -2	4-0- 0	4	CO1	Outline optical rotatory dispersion and circular dichroism.	2					Skills for Interpreting <sup>1</sup> H NMR, C13, UV, IR Spectra of Unknown Compounds in an Organic Spectroscopy	
					CO2	Examine the separation of chemical shifts and coupling on 2D axis	1						
					CO3	Take part in fragmentation of organic molecules associated with functional groups	2						
					CO4	Elucidate organic structures using mass fragmentation ORD&CD	3	3	3				
					CO1	Apply organo silanes and phase transfer catalyst in organic synthesis	1						
		Organic Synthesis-2	4-0- 2	7	CO2	Choose appropriate oxidizing agents in oxidative coupling reactions	2		2			To develop the synthesis of organic compounds	
					CO3	Choose appropriate reducing agents in reducing coupling reactions	2		2				
					CO4	Develop convergent and linear synthetic methods using disconnection approach	2		3	3			
					CO5	To analyze organic molecules from binary mixtures			3		2		2

16	16 CY 2217	Techniques for modern industrial applications	4-0-3	7	CO1	Understand classical methods of purification techniques	2						skills will be developed individually, or in groups, through research ... education with other subjects
					CO2	Classify the different chromatographic methods for separation of chemicals	2						
					CO3	Explain theory, instrumental description of gas chromatography and HPLC	2						
					CO4	Understand the preparation of ion exchange resin in chromatographic applications.	2						
					CO5	To estimate organic compounds from the basic sources		3	3	3			
17	16 CY 2119	Separation Techniques -I	4-0-0	4	CO1	Understanding the concepts and applications of paper chromatography and thin layer chromatography	2					understands the following terms: solvent extraction, chromatography, RF, centrifugation, simple distillation, fractional distillation, etc. Student acquires skills to perform experiments using the following techniques in the chemistry lab: Solvent extraction using separating funnel. Paper Chromatography.	
					CO2	Understanding the concepts and applications of Ion exchange	2			2	2		

18	16 CY 2120	<i>Quality Control and Traditional Methods of Analysis-I</i>	4-0-0	4	CO5	Understand the Concepts of sampling of solids, liquids, gases in chromatography	2							Skills will be developed in quality practices and methods,
					CO4	Discuss the importance of analytical chemistry for industrial research and understand the concepts of solvent extraction	2							
					CO1	Understand the principles of Quality control in Analytical Chemistry	2							
					CO2	Explain the various concepts of decomposition techniques in analysis	2							
		CO3	Illustrate, discuss and apply the various principles behind the various Red-ox systems involved in the classical Volumetric methods of Analysis.	2										
		CO4	Explain the various principles involved in the analysis of Organic Functional Groups	2										



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					CO5	Ability to analyse chemicals by classical methods	2	3	2	2	
					CO1	Understand the concepts of excitation spectroscopic methods.	1		2		
					CO2	Understand the basic concepts of rotational and vibrational spectroscopic methods.	2		2		
					CO3	Illustration of the concept of Nuclear magnetic and ESR spectroscopy and their applications.	3		2		
					CO4	Comprehend the basic knowledge of mass spectroscopy and X-ray spectroscopy to characterize the unknown molecules	2		2		
					CO5	Ability to analyse chemicals by Instrumental methods		3	2	2	
					CO1	Understanding the concepts and applications of paper chromatography and thin layer chromatography	2				
20	16 CY 2122	Instrumental Methods of Analysis - I	4-0- 3	7							To develop the skills instrumental separation methods
21	16 CY2224	Separation Methods - II	4-0- 0	4							analytical problem is entirely new, there is no established method, and something has to be developed from the beginning

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24	16 CY2277	Instrumental Methods of Analysis -II	4-0- 3	7	CO1	Discuss and understand the principles and instrumentation involved in the Flame photometry, Atomic Absorption Spectrometer, Inductively coupled plasma spectrometer and Arc and Spark spectrographic Direct analysis.	2	2	instrumental skills in chemical analysis will be developed
					CO2	Discuss and apply the various principles and methodology in TGA, DTA and DSC	2	2	
					CO3	Discuss and apply the principles and methodology involved in Voltammetry, polarography, Anode stripping voltammetry and Coulometry.	2	2	
					CO4	Discuss the principles and methodology in assaying the analytes using Ion Selective Electrodes and Radio chemical methods	2	2	

  
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				CO5	Analysis of chemicals by instrumental methods				3	2	1	To develop the research skills
16 CY2228	Dissertation	0-0- 6	3									

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