CO PO MAPPING – MBC

MBC					PROGRAM OUTCOMES														
Semester	**Course Code**	**Course Name**	**CO**	**Course Outcome**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
I	ENG-I	English - I A Course in Communication and Soft Skills	**CO1**	Use grammar effectively in writing and Speaking.			2								2				2
			CO2	Demonstrate the use of good vocabulary.	2	2								2					
			CO3	Demonstrate writing skills.	2						2								2
			CO4	Acquire ability to use Soft Skills in professional and daily life.	2	2									2			2	
			CO5	Confidently use the tools of communication skills.		2			2		3						3		
			C06	Demonstrate good listening skills	2						2							2	2
	LSC-I	Life Skill Course - I Entrepreneurship Development(ED)	**CO1**	Recall the concept of Entrepreneurship, its applications and scope.	3	2					2							2	
			CO2	List the types of financial institutions that help the business at Central, State and Local Level.	2	3					1							2	
			CO3	Recall Central and State Government policies, A ware of various tax incentives.	2	3					2							1	
			CO4	Summarize on generating a broad idea for a starting an enterprise/start up.	3	1					2							2	

			CO	Course Outcome	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
			CO5	Discuss on preparing a Project Report for a start up and differentiate between financial, technical analysis an business feasibility.	2	2					2							3	
			CO6	Operate data using charts and spread sheets.	3	2					3							1	
	SDC-I	Skill Development Course - I Electrical Appliances	**C01**	Able to explain basic electrical circuits, ac and dc fundamentals	3					2									2
			C02	Analyse of Single Phase AC Circuits and Three phase circuits, the representation of alternating quantities and determining the power in these circuits	2					2		3							
			C03	Illustrate the effects of electric shocks along with its remedies while using electrical appliances								2	2						2
			C04	To select the various protective devices used in Electrical wiring	2	3				2									
			C05	Able to acquire Basic Knowledge of various Electrical appliances like Refrigerator, Oven, Fan etc		2									2				3
			C06	Able to understand the principle and operation of Illuminating devices,	2					2					2				2
	C-IA	Introduction to Microbiology and Microbial Diversity	**CO1**	Acquire adequate knowledge and leadership skills for a successful career	2									3					3
			CO2	Analyze and solve biology based problems	2			2						2	3			2	
			CO3	Cooperate with each other to solve problems with creative thinking	2	2						3							2
			CO4	Acquire practical skills independently as well as to analyse & interpret data	3			2		2		3		2	3		2		2
			CO5	Adequate knowledge to use information and conclude microbial activities.	3					2				3					1
			CO6	Build and develop pure cultures of bacteria and fungi.						3									2
	C-IB	Biomolecules	**CO1**	Students are exposed to importance of biological macromolecules	2						2								2

			CO	Course Outcome	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
			CO2	Understand the effects of biomolecule alterations in diseases occurring in plants, animals and humans	3						3	2		2					
			CO3	Expertise to the student for analysis of any biological or non-biological sample for identification of its chemical composition							3			2		3			
			CO4	Students are able to study the influence and role of structure in reactivity of biomolecules	2						2	2							1
			CO5	Acquire knowledge in quantitative and qualitative estimation of biomolecules							3	3		2	2				
			CO6	Understand the role of vitamins to the living systems	3				3	2		3			2				1
	C-IC	Inorganic and Physical Chemistry	**CO1**	Recall the periodic table, properties of s,p,d and f block elements.	2		2	2											
			CO2	Learner will be able to interrupt and compare the properties of elements in various states.			2		2	2									3
			CO3	Apply the concepts of gas equations, pH and electrolytes while studying other chemistry courses.			2	2				2							
			CO4	Learner will be able to characterize and analyse the properties of various states of matter.			2	2				2							
			CO5	Learner will be able to predict the molecular weights using colligative properties			2			2		2							
			CO6	Learner will be able to design the procedure for the separation of salt using common ion effect, solubility product.						2		2							2
II	ENG-II	English - II	**CO1**	Use reading skills effectively.	2	2									2				2
			CO2	Interpret different types of texts.	2		2			2									
			CO3	Characterize what is being read.	2	2									2				
			CO	**Course Outcome**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**

			CO4 C05	Build up a repository of active vocabulary.		3					2				2				3
				Use good writing strategies.	2		2				2								
			C06	Write well for any purpose.	2										2				
	LSC-II	Life Skill Course - II Information and Communication Technology ICT	**CO1**	List the literature of social networks and their properties.	3									2	3				
			CO2	Explain which network is suitable for whom.	2			2						3	2				
			CO3	Discuss about the skills to use various social networking sites like twitter, flickr, etc.	2			2						3	3				
			CO4	Write few GOI digital initiatives in higher education.	3									2	2				
			CO5	Apply skills to use online forums, docs, spreadsheets, etc for communication, collaboration and research.	3			2						2	2				
			CO6	Compare internet threats and security mechanisms.	2			3						2	2				
	SDC-II(A)	Skill Development Course - II Survey & Reporting	**CO1**	Write the basics of survey and reporting needs and methods	3	3					2			1	1				
			CO2	Discuss on designing of a questionnaire	2	3					2			1	1				
			CO3	Demonstrate on a simple and valid survey and Collect data	2	3					3			1	2				
			CO4	Summarize on interpret data and submit report.	2	3					3			1	2				
	SDC-II(B)	Skill Development Course - II Business Communication	**CO1**	Identify the types of business communication and correspondence	3	2								2	2				
			CO2	List the processes like receiving, filing and replying	2	3								1	1				
			CO3	Explain about preparing good business communications	2	3								2	2				
			CO4	Write about organizational communication requirements and presentations.	3	1								1	2				
			CO5	Discuss search engine, payment gateways and SEO techniques.	3	2								1	2				
			CO	**Course Outcome**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**

	C-2A	Microbial Physiology and Biochemistry	**CO1**	Enable the student to understand the importance of biomolecules	3										2				2
			CO2	Explain working principles and applications of colorimetry, chromatography, centrifugation , eletrophoresis	3				2	3	3	2		3					
			CO3	Gain knowledge on microbial nutrition, bacterial growth, metabolism & respiration	3					1									1
			CO4	Student will get first hand experience on separation methods	2					3		2			2				
			CO5	Students get to know about the microbes in extreme environment and their mode of functioning						2		3		3					
			CO6	Understand about the role of enzymes and their activity	2					3		2			2				
	C-2B	Analytical techniques	**CO1**	Student will learn the various analytical techniques and their applications in separation and isolation of cells and tissues for studying their functional abnormalities	3					3	2			3					2
			CO2	Expertise the student for quantification of electrolytes and other metal ions, hormones and identification of bacteria.	3							2				2			1
			CO3	Gained knowledge is useful in food industries, pharma industries, clinical and microbiological labs.	2	3					3			3	3				1
			CO4	Evaluate the separations done by chromatographic, centrifugation and electophoretic techniques of the biomolecules						3		3		2					
			CO5	Understand about cell disruption methods	2					2		2							
			CO6	Learn about spectroscopy and tracer techniques	2			2		3				3	3				1
	C-2C	Organic and General Chemistry	**CO1**	Formulate the mechanism of organic reactions by recalling and correlating the fundamental properties of the reactants involved.	2		2			2									

			CO	Course Outcome	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
			CO2	Learner identity many organic reaction mechanisms including free radical substitution, electrophilic addition and electrophilic substitution.			2		2			2			2				
			CO3	Understand and explain the differential behaviour of organic compounds based on fundamental concepts learnt			2	2		2									2
			CO4	Apply the stereochemical concepts for different organic compounds and reactions.			2	2		2									3
			CO5	Learner can differentiate diastereomers and enantiomers.			2	2				2							
			CO6	Learner can predict the configurations of organic compounds based on D,L and R,S and E,Z configurational Rules.			2	2			2								2
			CO7	Learner can synthesize types of Alkanes , Alkenes , Alkynes.			2			2		2							3
III	ENG-III	English - III	**C01**	Speak fluently in English.	2	2					2							2	2
			C02	Participate confidently in any social interaction.		2					3							2	
			C03	Face any professional discourse.	2							2							
			C04	Demonstrate critical thinking.	2		2											2	
			C05	Enhance conversational skill by observing the professional interviews.		2			2		3							2	2
	LSC-III(A)	Life Skill Course -III Environmental Eduction(EE)	**C01**	Demonstrate the nature, components of an ecosystem and that humans are an integral part of nature.			3			3	2	2	2						2
			C02	A healthy biodiversity, dependence of humans on environment.	2					2		3	2						3
			C03	Justify the ways and ill effects of destruction of environment, population explosion on ecosystems and global problems consequent to anthropogenic activities.				2		2			3			2	2		

			CO	Course Outcome	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
			C04	Discuss the laws/ acts made by government to prevent pollution, to protect biodiversity and environment a s a whole.			2							2			3		2
			C05	Acquaint with international agreements and national movements, and realize citizen's role in protecting environment and nature.	2		3		2								2		3
	LSC-III(B)	Life Skill Course -III Analytical Skills(AS)	**C01**	Understand the basic concepts of arithmetic ability, quantitative ability, logical reasoning, business computations and data interpretation and obtain the associated skills.	2		2	2	2										
			C02	Acquire competency in the use of verbal reasoning.			2	2	2			2							2
			C03	Apply the skills and competencies acquired in the related areas.			2	2		2									
			C04	Solve problems pertaining to quantitative ability, logical reasoning and verbal ability inside and outstand the campus.			2	3	3	3									2
	SDC-III	Skill Development Course - III Online Busisness	**CO1**	Identify the online business and its advantages and disadvantages	3	3					2			3	2			2	
			CO2	Recall new channels of marketing, their scope and steps involved	3	3					2			2	1			2	
			CO3	Summarize the procurement, payment process, security and shipping in online business	3	3					2			2	2			1	
			CO4	Develop new marketing tools for online business	2	2					2			2	1			2	
			CO5	List the search engine, payment gateways and SEO techniques.	3	2					3			3	2			2	
	C-IIIA	Molecular biology &	**CO1**	Deals with interactions among various systems of the cell	2			2	2	3									

		Microbial genetics	**CO**	**Course Outcome**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
			CO2	Explain the relationship between DNA, RNA and proteins and learning how these are regulated.	2			2		3					2				1
			CO3	Understanding about regulation mechanism						2									1
			CO4	Learn about gene concepts, genetic code, gene expression, gene regulation and also learn about mutation.				3		3		2							
			CO5	Characterization of plasmids, vectors and gain knowledge on the construction of cDNA libraries	3					3		2							2
			CO6	rDNA technology techniques and their application in the field of genetic engineering	3				3	2		2			1				
	C-IIIB	Enzymology, Bioenergetics and Intermediary metabolism	**CO1**	Enable the student to understand the pathophysiology of metabolic diseases such as diabetes	2					3		2			2				
			CO2	Students will know about the biomolecules metabolism for the purpose of energy and other physiological functions in the body						3		2							
			CO3	Expertise the students for quantification of enzymes' activities, glucose, proteins and lipid levels in blood which will have clinical applications	3					2		3			3				2
			CO4	Understand the thermodynamics of coupling processes in metabolism					3	3		2	3						
			CO5	Understand redox and electron transfer reactions in biological systems	3				2	3		3							1
			CO6	Explain the process of photosynthesis and its importance in living systems						2		3		3	1				
	C-IIIC	Organic Chemistry and	**CO1**	Demonstrate the applications of ring theory in various fields.	2		2	2				2							

		Spectroscopy	**CO**	**Course Outcome**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
			CO2	Students will be able to reproduce the preparation , properties and reactions of haloalkanes , haloarenes and oxygen containing functional groups	2			2							2				
			CO3	Learner can summarize different reaction mechanism of carbonyls and carboxylic acids			2	2					2		2				3
			CO4	They can apply the synthetic chemistry learnt to do functional group transformations	2		2					2							3
			CO5	Learner will be able to differentiate between different types of spectroscopic techniques.	2		2		2										
			CO6	Learner can conclude the structure of an organic compound using IR, UV-Visible and NHR spectroscopy	2		2					2							3
IV	C-IV A1	Immunology and Medical Microbiology	**CO1**	Will be able to formulate and propose the plausible mechanisms for any relevant reaction.	3					3									1
			CO2	Develop knowledge on disease transmission and control	3						2	3			2				
			CO3	Demonstrate on collection and handling of laboratory specimens		2			3		3								
			CO4	Develop an information making personal health decision in regard to infectious diseases.						2		3							
			CO5	Student can safeguard himself & society and can work diagnostics and hospitals.	2														2
	C-IV A2	Microbial Ecology and Industrial Microbiology	**CO1**	Understand fundamental concept in soil microbial diversity, basic concept of biogeochemical cycles and plant growth promotion and plant diseases	2					3		2							
			CO2	Understands the role of microorganisms in treatment of solid and liquid waste						3		1							

			CO	Course Outcome	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
			CO3	Acquire knowledge on application of microorganisms in agro – environmental fields	3					2		3							
			CO4	Get basic information design of fermenter, fermentation processes and Single cell proteins	2					3	2					3		2	
			CO5	Self-reliance in the industrial application of Microbiology in life and industry.		3					3							3	2
			CO6	Entrepreneurship can be established with the gained knowledge	2						3								2
	C-IV B1	Physiology , Nutritional and Clinical Biochemistry	**CO1**	Provide knowledge on hormones, their functions and the diseases occurring due to alterations in the levels of hormones.	2						3	3			2				1
			CO2	Student will know the nutritional importance of proteins, carbohydrates, lipids, vitamins and minerals.							3		3						2
			CO3	Enable the student to do diagnostic tests for liver diseases, Gastro intestinal diseases, renal diseases and nutritional deficiencies.	3	2					3								
			CO4	Gain knowledge about the blood and gastro intestinal systems in the human body	2					3		2							1
			CO5	Understanding the endocrine pathways by designing tests that will help to diagnose	3						3	3			2				
	C-IV B2	Microbiology, Immunology and Molecular Biology	**CO1**	Students will know about the basics and importance of Microbiology	2					3		2			3				
			CO2	Student will get knowledge in immune system, vaccines and also understand the pathogenesis of auto immune diseases and immune deficiency diseases						3	3	2							2
			CO3	Knowledge and expertise in molecular biology such as genes, their structure and importance	2					3		3		3	2				1
			CO4	Enable the student to know the applications of PCR in cloning and	3					3	2	3		3	3				2

				diagnosis of genetic and viral diseases.															
			CO	**Course Outcome**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
			CO5	Expertise to the student to work in microbiology laboratory, food and pharma industries, and biotech companies for production of vaccines and other life-saving drugs.	3	2				2	3	2		3	2				
			CO6	Use of immunological techniques for diagnosis of diseases		3					3	3							1
	C- IV C1	Inorganic, Organic and Physical Chemistry	**CO1**	Learner can define the laws of absorption of light energy by molecules and can reproduce subsequent photochemical reaction	2		2					2							3
			CO2	an interpret the concept of Quantum efficiency and mechanisms of photochemical reactions.	2		2					2							
			CO3	Will be able to solve the numerical in thermodynamics by applying the efficiency formula.			2	2							2				3
			CO4	Differentiate between two different carbohydrates (hexos) i.e Glucose and Fructose			2	2				2							
			CO5	Able to predict the stability of carbenyl by applying 18 election rule.	2		2		2										3
			CO6	Identify different proteins by linking different amino acids together.	2		2					2							
	C-IV C2	Inorganic and Physical Chemistry	**CO1**	Identify the order and molecularity of given reaction.	2		2					2							
			CO2	Understand concepts of boundary conditions and quantization, probability distribution, most probable values, uncertainty and expectation values	2		2					3							
			CO3	Will be able to apply the quantization to spectroscopy			3	2							2				2
			CO4	Learner can analyse the structure by various types of spectra.	2		2					2			2				3

			CO	Course Outcome	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
			CO5	Can evaluate the stability of complexes by crystal field stabilization energy.	2		2		2										
			CO6	Learner will be able to construct an electrochemical Cell.	2		2					2							3
V	C-V A1	Food and Dairy Microbiology	**C01**	Understanding the key concepts in food and dairy microbiology	3					3	2	3			2				1
			C02	Emphasizing the role of intrinsic and extrinsic factors on growth and survival of microorganisms in food and dairy industries						2				2	2				
			C03	Enumerating the various methods of isolation, detection and identification of microorganisms employed in food and dairy industries	3	3				3	2	3		3					
			C04	Identifying the types and nature of food spoilage caused by microorganisms	2					2		2							
			C05	Developing principles and methods for the microbiological examination and preservation of foods						3		3			2				1
			C06	Perception of food safety regulations and the rationale use of standard methods and procedures for the microbial analysis of food and dairy products	3					2				3					2
	C- V A2	Environmental and agricultural Microbiology	**C01**	Providing basic understanding of microbial diversity in the environment	3										2				2
			C02	Understanding microbial interaction with other living systems															1
			C03	Enumerating the role of microbes in waste management and bioremediation.						3		3							
			C04	Emphasizing the role of microbes in maintaining soil profile and fertility	2					3		2							
			C05	Insights into the role of microorganisms as biofertilizers and biopesticides	2					2		1			1				
			C06	Enumerating the various classes of microbes affecting agricultural yield						2	2	3							1

			CO	Course Outcome	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	C-V B1	Clinical Biochemistry	**C01**	Discuss the fundamental biochemistry knowledge related to health	2					2									1
			C02	Explain the clinical significance of the laboratory tests	2	3					3	3							2
			C03	Students will gain knowledge in renal and hepatic physiology						3	2	3		2					
			C04	Students know about basics of cardiovascular diseases	1					3		3		3					
			C05	Illustrate the mechanism of metabolic disorders at molecular level							3	2		2					
			C06	Facilitates in employability in diagnostic and research institutions	2	2			2	3	3			3					
	C- V B2	Haematological and Immunological techniques	**C01**	Explain about formulation, composition and maturation of blood cells	3						3			2					
			C02	Students know about the basic knowledge of immunological processes at a cellular and molecular level	2						3	3							2
			C03	Students gain knowledge about advanced diagnostic tests		3								3	2				2
			C04	Accomplishes the learning of techniques involved in immunological aspects	2				2	3		3							1
			C05	Enhance the students's ability to produce a differential diagnosis based on clinical examination and laboratory values		3					3								2
			C06	Provide the students to understand the basics of treatment protocols		3					3	2							2
	C- V C1	Synthetic Organic Chemistry	**C01**	Identify the importance of reagents used in organic synthetic reactions			2					2							
			C02	Understand the importance of the retro synthesis in organic chemistry	2			2				2			2				
			C03	Acquire knowledge on basic concepts in different pericyclic reactions	2		2	2				2							3
			C04	Comprehend the application of the different reactions in the synthetic organic chemistry			2	2							2				

			CO	Course Outcome	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
			CO5	Apply the concept of reagents in others chemical reactions			2					2			2				
			CO6	Learner will be able to prepare paracetamol from phenol			2					2			2				3
	C- V C2	Analysis of Organic Compounds	**C01**	Identify the importance of mass spectrometry in the structure elucidation of organic compounds	2			2	2										
			C02	Acquire the knowledge on structure elucidation of organic compounds	2				2	2		3							
			C03	Understand the various chromatography methods in the separation and identification of the organic compounds and differentiate the nature of organic compounds					2	2					2				2
			CO4	Can predict types of organic compounds			2	2			2								
			CO5	Learner will be able design easier separated methods from the knowledge gained in the solvent extractions for separation of organic compounds			2	2											3