

CO PO MAPPING (Matrix)												
Programe - First Year B.Sc												
Semester - Smester I & II												
PO1 – Knowledge & Skill Development- An ability to apply knowledge of healthcare technology (including clinical subjects, investigations/ Procedures, handling instruments)												
PO2 – Critical Thinking – To apply professional judgment and rational thinking in decision-making												
PO3 - Problem solving – Correlation of professional knowledge applied to current clinical or healthcare practices.												
PO4 -Professional ethics – To adopt and apply code of ethics prescribed by professional bodies in professional and social context. Maintain appropriate boundaries with patients and care givers and maintain confidentiality.												
PO5 – Communication skills – To communicate effectively with the patients, care givers and other healthcare professional for addressing patient related issues and to deliver and information												
PO6 – Individual / Team work - ability to function on multi-disciplinary teams												
PO 7- Holistic development: Development of intellectual mental, Physical, Emotional & Social abilities, so as to be capable of facing the demands & challenges of every day life.												
PO8 – Lifelong learning - To develop continuous learning attitude in context of research, advances in clinical practices and to inculcate professionalism and evidence based practices												
PO Mapping same with correlation level 3,2,1 The notation of 1 - low, 2 - moderate , 3 - high												
				Knowledge & Skill Development	Critical Thinkin g	Problem solving	Professi onal ethics	Communi cation skills	Individu al / Team work	Holistic develop ment	Lifelong learning	Average
Semester	Course / Course Code	Course Outecome	Details	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	
Semester 1	Human Anatomy- Part I	CO1	Define basic technical terminology and language associated with anatomy	2	1	2	0	0	1	0	1	0.7
		CO2	Identify and describe the gross anatomy and microscopic structures of various tissues and organs in the human body and correlate their structure with the functions as a prerequisite for understanding the altered state in various diseases	3	1	2	0	0	0	0	1	1.2
		CO3	Demonstrate and understand the anatomy of skeletal system, muscular system , joints , respiratory system ,circulatory system, digestive system and excretory system theoretically as well as in the dissected specimen	3	1	1	0	0	0	0	1	0.7
	Average			2.7	1.0	1.7	0.0	0.0	0.3	0.0	1.0	0.8
	Human Physiology Part I	CO1	Describe the basic physiological principles involved in the normal functioning of the human body & Apply the physiological principles in comprehending the pathophysiology of disease and its management	2	1	2	0	0	0	0	2	0.8
		CO2	Describe & understand the functional aspects of general physiology,haematology, Cardiovascular system , digestive system, Respiratory system, nerve muscle physiology	3	1	3	0	0	0	0	2	1.1
		CO3	To be able to perform the tests or techniques to evaluate the functions of organ systems & efficient to handle the equipment related to these tests also to derive, analyse, interpret the test results.	2	1	3	0	0	0	0	2	1.1
	Average			1.4	0.6	1.6	0	0	0	0	1.2	0.6
	General Biochemistry & Nutrition	CO1	Understand the chemistry, metabolism and functions of biomolecules i.e. Carbohydrates, proteins, lipids, nucleic acids, enzymes and vitamins.	3	2	2	0	0	0	2	3	1.5
		CO2	Gain knowledge about role of various essential aspects of Nutrition and Energy balance with its related disorders	3	1	1	0	0	0	2	3	1.3
		CO3	Know the fundamentals of techniques used in collection, processing and evaluation of biological specimens in pre-examination laboratory practices	2	1	2	2	1	1	2	3	1.8
	Average			6.67	3.33	3.67	0.67	0.33	0.33	4.67	7.00	3.3

Semester 2	Introduction to National Health Care System (Multidisciplinary/Interdisciplinary)	CO1	The course provides the students a basic insight into the main features of Indian health care delivery system and how it compares with other systems of the world	3	2	1	1	1	2	1	1	1.5
	Average			3	2	1	1	1	2	1	1	1.5
	English and Communication Skills	CO1	Able to express better	2	3	1	1	1	1	1	1	1.4
		CO2	Grow personally and professionally and develop confidence in every field	2	2	2	2	2	2	2	2	2.0
	Average			2	2.5	1.5	1.5	1.5	1.5	1.5	1.5	1.7
	Environmental Sciences	CO1	Understand and define terminology commonly used in enviromental sciences	2	2	2	2	2	2	2	2	2.0
		CO2	To understand the processes that govern the interactions with organism with the biotic and abiotic	2	2	1	1	2	2	2	1	1.6
		CO3	Understand the relationship between people and the enviroment	2	2	1	2	2	2	2	2	1.9
	Average			2.0	2.0	1.3	1.7	2.0	2.0	2.0	1.7	1.8
	Human Anatomy Part II	CO1	Define basic technical terminology and language associated with anatomy	2	1	2	0	0	0	0	2	0.9
		CO2	Identify and describe the gross anatomy and microscopic structures of various tissues and organs in the human body and correlate their structure with the functions as a prerequisite for understanding the altered state in various diseases	2	1	2	0	0	0	0	2	0.9
		CO3	Demonstrate and understand the anatomy of reproductive system,endocrine system ,nervous system ,sensory system, & lymphatic system theoretically as well as in the dissected specimen	2	1	2	0	0	0	0	2	0.9
	Average			2.0	1.0	2.0	0.0	0.0	0.0	0.0	2.0	0.9
	Human Physiology Part II	CO1	Describe the basic physiological principles involved in the normal functioning of the human body & Apply the physiological principles in comprehending the pathophysiology of disease and its management	2	1	1	2	1	2	1	2	1.5
		CO2	Describe & understand the functional aspects of nervous system , endocrine system,special senses, skin , Reproductive system,& excretory system.	2	1	2	0	0	0	0	2	0.9
		CO3	To be able to perform the tests or techniques to evaluate the functions of organ systems & efficient to handle the equipment related to these tests also to derive, analyse, interpret the test results.	2	1	2	0	0	0	0	2	0.9
	Average			2.0	1.0	1.7	0.7	0.3	0.7	0.3	2.0	1.1
	General Microbiology	CO1	Operate and use the light compound microscope and perform microbiological laboratory procedures according to appropriate safety standards .	3	2	2	0	0	0	0	2	1.1
		CO2	Demonstrate and interpret the findings of common laboratory techniques like various staining methods , wet mounts , peripheral smears for demonstration of microorganisms from various clinical specimens	3	1	2	0	0	0	0	2	1.0
	Average			3	1.5	2	0	0	0	0	2	1.1
	Basic Pathology & Hematology	CO1	Describe the rationale & principles of technical procedures of diagnostic laboratory tests and interpret diagnostic laboratory tests & correlate with clinical & morphological features of diseases.	2	1	2	0	0	0	0	1	0.8
		CO2	To aid haematology in the reference ranges for haemoglobin , haemocrit , erythrocytes and leukocytes in infants children and adults .	1	1	2	0	0	0	0	1	0.6
	Average			1.5	1	2	0	0	0	0	1	0.7

Semester 2

Introduction to Quality and Patient safety	2	3	2	3	2	3	2	3	2.5
Medical Bioethics & IPR	2.3	3.0	0.7	2.3	2.0	2.3	2.3	2.7	2.2
Human Rights & Professional Values	2.3	1.8	0.0	2.0	0.0	1.0	1.5	1.0	1.2

CO & PO Relationships (Mapping Strength)															
Programme - First Year B.Sc															
Semester - Smester III, IV, V & VI															
				CO & PO Relationships	Domain	Unit	Lecture		Lab		Clinical		Total		Strength Level of CO addressing to PO Level 3:>50%, Level 2: 30%-50%, Level 1:< 30%, Not addressed :<5%
Semester	Course & Course code	CO	CO Detail	PO1-PO8	C.A.P	No	Hrs	%	Hrs	%	Hrs	%	Hrs	%	
Semester 1	Human Anatomy- Part I	CO1	Define basic technical terminology and language associated with anatomy	PO1 ,PO2,PO3 ,PO5, PO8	C.P	1unit	5	11.1%	2	4%	0		7	6.67%	1
		CO2	Identify and describe the gross anatomy and microscopic structures of various tissues and organs in the human body and correlate their structure with the functions as a prerequisite for understanding the altered state in various diseases	PO1 ,PO2,PO3 ,PO5, PO8	C.P	2,3,4,5,6,7,8	20	44.4%	28	62%	0		48	45.71%	3
		CO3	Understand and demonstrate the anatomy of Respiratory system , Circulatory system , Digestive system and Excretory system with it's clinical application	PO1 ,PO2,PO3 ,PO5, PO8	C.P	2,3,4,5,6,7,8	20	44.4%	30	50%	0		50	47.62%	3
		Average					45	100.0%	60	100%			105	100.00%	
	Human Physiology Part I	CO1	Describe physiological basic principles involved in normal funtioning of the human body and apply the physiological principles in comprehending the pathophysiology of the disease and it's management.	PO1, PO2 , PO3 , PO4,PO5,PO6,PO8	C.P	1,2,3,4,5,6	16	35.56%	30	50.00%			46	43.81%	3
		CO2	To understand the basic mechanism operating and regulatory mechanism of each organ systems .	PO1, PO2 , PO3 , PO4,PO5,PO6,PO8	C.P	2,3,4,5,6	13	28.89%		0	0		13	12.38%	2
		CO3	To be able to perform the tests or techniques to evaluate the funtioning of organ systems and to be efficient to handle the equipment related to these tests, derive analyse and interpret the results as normal and abnormal .	PO1, PO2 , PO3 , PO4,PO5,PO6,PO8	C.A.P	1,2,3,4,5,6	16	35.56%	30	50%	0		46	43.81%	3
		Average					45	100%	60	100%	0		105	100%	
	General Biochemistry & Nutrition	CO1	Understand the chemistry, metabolism and functions of biomolecules i.e. Carbohydrates, proteins, lipids, nucleic acids, enzymes and vitamins.	PO1, PO2 , PO3 ,PO7, PO8	C.P	1,2,3,4,5	40	66.67%	30	50%	0		70	58%	3
		CO2	Gain knowledge about role of various essential aspects of Nutrition and Energy balance with its related disorders	PO1, PO2 , PO3 ,PO7, PO8	C.P	6, 9	10	16.67%	5	8.33%			15	13%	1
		CO3	Know the fundamentals of techniques used in collection, processing and evaluation of biological specimens in pre-examination laboratory practices	PO1, PO2 , PO3 , PO4, PO5, PO6, PO8	C.A.P	7, 8	10	16.67%	25	41.7%			35	29%	2
		Average					60	100%	60	100%			120	100%	
	Introduction to National Health Care System (Multidisciplinary/Interdisciplinary)	CO1	The course provides the students a basic insight into the main features of Indian health care delivery system and how it compares with other systems of the world	PO1, PO2 , PO3 , PO4,PO5,PO6,PO8	C.A.P	1,2,3,4,5,6	45	100%		0			45	100%	3
	English and Communication Skills AEC 001L	Average					45	100%		0			45	100%	
		CO1	Able to express better	PO1 ,PO2,PO3 ,PO4, PO5,PO6,PO7, PO8	C .A.P	1,2,3,4,5,6,7,8,9,10	25	56%		0			45	100%	3
		CO2	Grow personally and professionally and develop confidence in every field	PO1 ,PO2,PO3 ,PO4, PO5,PO6,PO7, PO8	C.A.P	3,4,5,6,7,8,9,10	20	44%		0			33	73%	3
		Average					45	100%		0			45	100%	
		CO1	Understand and define terminology commonly used in enviromental sciences	PO1 ,PO2,PO3 ,PO4, PO5,PO6,PO7, PO8	C .P	1,2,3,4,5,6	15	33%		0			15	33%	2

	Environmental Sciences/AEC 002L	CO2	To understand the processes that govern the interactions with organism with the biotic and abiotic	PO1 ,PO2,PO3 ,PO4, PO5,PO6,PO7, PO8	C .P	1,2,3,4,5,6	15	33%		0			15	33%	2
		CO3	Understand the relationship between people and the enviroment	PO1 ,PO2,PO3 ,PO4, PO5,PO6,PO7, PO8	C .P	1,2,3,4,5,6	15	33%		0			15	33%	2
		Average					45	100%		0			45	100%	
Semester 2	Human Anatomy Part II			PO1 ,PO2,PO3 ,PO4, PO5,PO6,PO7,PO8	C.P	1,2,3,4,5	10	33%	20	33%	0		30	33%	3
		CO1	Define basic technical terminology and language associated with anatomy												
				PO1 ,PO2,PO3 , PO5,PO6,PO8	C.P	1,2,3,4,5	10	33%	20	33%	0		30	33%	3
		CO2	Identify and describe the gross anatomy and microscopic structures of various tissues and organs in the human body and correlate their structure with the functions as a prerequisite for understanding the altered state in various diseases												
				PO1 ,PO2,PO3 , PO5,PO6,PO8	C.P	1,2,3,4,5	10	33%	20	33%	0		30	33%	3
		CO3	Understand and demonstrate the anatomy of reproductive system,endocrine system ,nervous system ,sensory system, & lymphatic system with its applied aspects.												
		Average					30	100%	60	100%	0.0		90	100%	
	Human Physiology Part II			PO1 ,PO2,PO3 , PO5,PO6,PO8	C.P	1,2,3,4,5,6	10	33%	16	53%			26	43%	3
		CO1	Describe physiological basic principles involved in normal funtioning of the human body and apply the physiological principles in comprehending the pathophysiology of the disease and it's management.												
				PO1 ,PO2,PO3 , PO5,PO6,PO8	C.P	1,2,3,4,5,6	10	33%	8	27%			18	30%	3
		CO2	To understand the basic mechanism operating and regulatory mechanism of each organ systems .												
				PO1 ,PO2,PO3 , PO5,PO6,PO8	C.A .P	1,2,3,4,5,6	10	33%	6	20%			16	27%	3
		CO3	To be able to perform the tests or techniques to evaluate the funtionins of organ systems and to be efficient to handle the equipment related to these tests, derive analyse and interpret the results as normal and abnormal .												
		Average					30	100%	30	100%	0.0		60	100%	
	General Microbiology/BMLT 108 L			PO1 ,PO2,PO3 , PO5,PO6,PO8	C.A.P	1,2,3,4,5,6,7,8,9	38	84%	36	60%	0		74	70%	3
		CO1	To demonstrate knowledge of microoganisms and disease caused , as well as to perform microbiological laboratory procedures .												
				PO1 ,PO2,PO3 , PO5,PO6,PO8	C.P	5	3	7%	8	13%	0		11	10%	1
		CO2	To have basic knowledge about serology and immunology												
				PO1 ,PO2,PO3 , PO5,PO6,PO8	C.A.P	3,4	4	9%	16	27%	0		20	19%	1
		CO3	Demostrate basic knowledge and practise of infection ,control and safety precaution while working in hospital / laboratory .												
		Average					45	100%	60	100%	0	13.4	105	100%	
	Basic Pathology & Hematology/BMLT 109 L			PO1 ,PO2,PO3 ,PO4, PO5,PO6,PO7,PO8	C	1,2,3,4,5,6,7,8,9,10,11,12	30	50%	0		0		30	50%	3
		CO1	The student should have basic knowledge hematology and cytology and clinical pathology .												
				PO1 ,PO2,PO3 , PO5,PO6,PO8	C.A.P	1,2,3,4,5,6,7,8,9,10,11,12	30	50%	0		0		30	50%	3
		CO2	Student should knowparts,basic functions and operation of microscope . Interpret diagnostic laboratory results and corelate it with sign and symptoms of patients.												
	Average						60	100%					60	100%	

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		CO3	Apply modern change management and innovation management concepts to optimize structures	1	1	1.5	1	2	1	1	2	1.3
		CO4	Analyze existing hospital service policies and enhance their alignment within the local and national context	1	1	1.5	1	2	1	1	2	1.3
	Average			1.3	1.0	1.5	1.0	1.5	1.0	1.0	2.0	1.3
Semester 6	Clinical Biochemistry - II/BMLT 124 L	CO1	At the end of semester students shall be able to Work as a Laboratory Technician in Hospital Laboratories, Pharmaceutical industries & in Research institute	3	3	3	3	3	3	3	3	3.0
	Average			3	3	3	3	3	3	3	3	3.0
	Medical Microbiology- II/BMLT 125L	CO1	The main aim of this course is to train students in the field of Medical Microbiology.	3	3	3	3	3	3	3	3	3.0
		CO2	Theoretical as well as practical training is imparted to the students in various branches of Microbiology namely Bacteriology, Virology, Parasitology, Immunology, serology and Mycology so that they can participate in good patient care and prevention of infectious diseases in the community.	3	3	3	3	3	3	3	3	3.0
		CO3	They are introduced to basic and advanced methods used in the field of diagnostic Microbiology	3	3	3	3	3	3	3	3	3.0
	Average			3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
	Blood Bank and General Pathology - II/BMLT 126	CO1	The student be well versed with the techniques in blood banking like components and FDA regulations	3	3	3	3	3	3	3	3	3.0
		CO2	The B.Sc graduate should have sound knowledge and basic skills of working in a pathology lab and blood bank	3	3	3	3	3	3	3	3	3.0
	Average			3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0

Semester	Subject	PO1	MAPPING AVERAGE (Programe - Bsc Medical Lab Technology)	PO3	PO4	PO5	PO6	PO7	PO8	Average
			P02							
Semester 3	Fundamental of Biochemistry - I/BMLT 112L	3	3	3	3	3	3	3	3	3
	Fundamentals of Microbiology-I/BMLT 113 L	3	3	3	3	3	3	3	3	3
	Hematology and Clinical Pathology - I/BMLT 114 L	3	3	3	3	3	3	3	3	3
	Pursuit of Inner Self Excellence (POIS)/GEC 001L	1	1	1.3	1	1.3	1	1.2	1.2	1
	Organizational Behavior/GEC 002L	1	1	1.5	1.8	1	1.3	1	1	1
Semester 4	Fundamental of Biochemistry - II/BMLT 116 L	3	3	3	3	3	3	3	3	3
	Fundamentals of Microbiology-II/BMLT 117 L	3	3	3	3	3	3	3	3	3
	Hematology and Clinical Pathology - II/BMLT 118 L	3	3	3	3	3	3	3	3	3
	Computer and Applications/AEC 003 L	1	1.7	1.3	1.7	1	1.7	1	1	1
	Biostatistics and Research Methodology/AEC 004 L	2.25	1.75	2	2	2.5	2.5	3	2.5	2
Semester 5	Clinical Biochemistry - I/BMLT 120 L	3	3	3	3	3	3	3	3	3
	Medical Microbiology- I/BMLT 121 L	3	3	3	3	3	3	3	3	3
	Blood Bank and General Pathology - I/BMLT 122L	3	3	3	3	3	3	3	3	3
	Basics of Clinical Skill Learning/CEC 005 L	2.3	2	2	2	1.5	2	2	2	2
	Hospital Operation Management/CEC 006 L	1.3	1	1.5	1	1.5	1	1	2	1
Semester 6	Clinical Biochemistry - II/BMLT 124 L	3	3	3	3	3	3	3	3	3
	Medical Microbiology- II/BMLT 125L	3	3	3	3	3	3	3	3	3
	Blood Bank and General Pathology - II/BMLT 126 L	3	3	3	3	3	3	3	3	3

CO & PO Relationships (Mapping Strength)															
Programe - Bsc Medical Lab Technology															
Semester - Smester III, IV, V & VI															
				CO & PO Relationships	Domain	Unit	Lecture		Lab		Clinical		Total	Strength Level of CO addressing to PO Level 3:>50%, Level 2: 30%-50%, Level 1:< 30%, Not addressed :<5%	
Semester	Course & Course code	CO	CO Detail	PO1-PO8	C.A.P	No	Hrs	%	Hrs	%	Hrs	%	Hrs	%	
	Fundamental of Biochemistry - I/BMLT 112L	CO1	At the end of semester students shall be able to develop expirmental & analytical skills.	PO1-PO8	C,A,P	1,2,3,4	30	100%	15	15%	15	50%	60	100%	3

	Applications/AEC 003 L	CO2	Explain the function of Hospital Information Systems	P01-P08	C,A	6,7,8	15	33%					15	33%	2
		CO3	Analyze medical standards	P01-P08	C,A	9,10,11,12	14	31%					14	31%	2
		Total					45	100%					45	100%	
	Biostatistics and Research Methodology/AEC 004 L	CO1	To understand the importance & Methodology for research	P01-P08	C,A	1,2,3	15	33%					15	33%	2
		CO2		P01-P08	C,A	4,5,6,7,8,9	30	67%					30	67%	3
		CO2	To learn in detail about sampling, probability and sampling distribution, significance tests correlation and regression, sample size determination, study design and multivariate analysis.				45	100%					45	100%	
		Total					45	100%					45	100%	
Semester 5	Clinical Biochemistry - I/BMLT 120 L	CO1		P01-P08	C,A,P	1,2,3,4,5	30	67%	15	50%	15	50%	60	100%	3
		Total	At the end of semester students shall be able to develop technical Skills to perform various diagnostic profiles to operate Lab Information System & to report independently				30	67%	15	50%	15	50%	60	100%	
	Medical Microbiology- I/BMLT 121 L			P01-P08	C,A,P	1 to 12	15	33%	5	17%	5	17%	25	33%	2
		CO1	Theory and Lab courses provide the student with an introduction to basiclaboratory identification and classification of medically significant isolates in mycology, parasitology.												
		CO2	Laboratory safety, specimen selection and processing, isolation methods, immunologic diagnosis and treatment.	P01-P08	C,A,P	1 to 12	15	33%	5	17%	5	17%	25	33%	2
		CO3	Epidemiology and pathogenesis of mycosis, parasitic and infections are explored	P01-P08	C,A,P	1 to 12	15	33%	5	17%	5	17%	25	33%	2
		Total					45	100%	15	50%	15	50%	75	100%	
	Blood Bank and General Pathology - I/BMLT 122L	CO1	The student should be able to apply the basic knowledge of hematology, histopathology, and cytology in laboratory	P01-P08	C,A,P	1,2,3,4	15	33%	5	17%	5	17%	25	33%	2
		CO2	The student should perform the techniques and staining procedure in histopathology and cytology	P01-P08	C,A,P	1,2,3,4	15	33%	5	17%	5	17%	25	33%	2
		CO3	The student should be able to apply the basics of hematology and clinical pathology learnt in 3rd and 4th semester in clinical laboratory.	P01-P08	C,A,P	1,2,3,4	15	33%	5	17%	5	17%	25	33%	2
		Total					45	100%	15	50%	15	50%	75	100%	
	Basics of Clinical Skill Learning/CEC 005 L	CO1	After successful accomplishment of the course, the students would be able to Measure Vital Signs, do basic physical Examination of the patients, NG tube basics, Administration of Medicines	P01-P08	C,A	1,2,3,4,6	40	89%					40	89%	3
		CO2	The students will learn about Asepsis, and the Cleanliness related to asepsis and on mobility of the patients	P01-P08	C,A	5	5	11%					5	11%	1
		Total					45	100%					45	100%	
	Hospital Operation Management/CEC 006 L	CO1	Understand and apply resource management concepts (personnel, finance, and material resources) and the processes and strategies needed in specific hospital sectors	P01-P08	C,A	1,2	15	33%					15	33%	2
		CO2	Communicate effectively and develop their leadership and teambuilding abilities	P01-P08	C,A	4	10	22%					10	22%	1
		CO3	Apply modern change management and innovation management concepts to optimize structures	P01-P08	C,A	3	10	22%					10	22%	1
		CO4	Analyze existing hospital service policies and enhance their alignment within the local and national context	P01-P08	C,A	5	10	22%					10	22%	1
		Total					45	100%					45	100%	
	Clinical Biochemistry - II/BMLT 124 L	CO1	At the end of semester students shall be able to Work as a Laboratory Technician in Hospital Laboratories, Pharmaceutical industries & in Research institute	P01-P08		1,2,3,4,5	30	100%	15	25%	15	25%	60	100%	3
		Total					30	100%	15	25%	15	25%	60	100%	
		CO1	The main aim of this course is to train students in the field of Medical Microbiology.	P01-P08		1,2	8	18%	5	17%	5	17%	18	24%	1

Semester 6	Medical Microbiology- II/BMLT 125L			PO1-PO8		3 TO 11	30	67%	5	17%	5	17%	40	53%	3		
		CO2	Theoretical as well as practical training is imparted to the students in various branches of Microbiology namely Bacteriology, Virology, Parasitology, Immunology, serology and Mycology so that they can participate in good patient care and prevention of infectious diseases in the community.			PO1-PO8		8,9	7	16%	5	17%	5	17%	17	23%	1
		CO3	They are introduced to basic and advanced methods used in the field of diagnostic Microbiology			PO1-PO8		8,9	7	16%	5	17%	5	17%	17	23%	1
		Total						45	100%	15	50%	15	50%	75	100%		
	Blood Bank and General Pathology - II/BMLT 126 L			PO1-PO8		1	18	40%	7	23%	7	23%	32	43%	2		
		CO1	The student be well versed with the techniques in blood banking like components and FDA regulations			PO1-PO8		2,3	27	60%	8	27%	8	27%	35	47%	3
CO2		The B.Sc graduate should have sound knowledge and basic skills of working in a pathology lab and blood bank			PO1-PO8		2,3	27	60%	8	27%	8	27%	35	47%	3	
	Total						45	100%	30	100%	30	100%	75	100%			

CO-PO MAPPING (Matrix)												
Programme - B. Optometry												
Semester - Semester III, IV, V & VI												
PO1 – Knowledge & Skill Development- An ability to apply knowledge of healthcare technology (including clinical subjects, investigations/ Procedures, handling instruments)												
PO2 – Critical Thinking – To apply professional judgment and rational thinking in decision-making												
PO3 - Problem solving – Correlation of professional knowledge applied to current clinical or healthcare practices.												
PO4 -Professional ethics – To adopt and apply code of ethics prescribed by professional bodies in professional and social context. Maintain appropriate boundaries with patients and care givers and maintain confidentiality.												
PO5 – Communication skills – To communicate effectively with the patients, care givers and other healthcare professional for addressing patient related issues and to deliver and information												
PO6 – Individual / Team work - ability to function on multi-disciplinary teams												
PO 7- Holistic development: Development of intellectual, mental, Physical, Emotional & Social abilities, so as to be capable of facing the demands & challenges of every day life.												
PO8 – Lifelong learning - To develop continuous learning attitude in context of research, advances in clinical practices and to inculcate professionalism and evidence based practices												
PO Mapping same with correlation level 3,2,1 The notation of 1 - low, 2 - moderate , 3 - high												
				Knowledge & Skill Development	Critical Thinking	Problem solving	Professional ethics	Communication skills	Individual / Team work	Holistic development	Lifelong learning	Average
Semester	Course / Course Code	Course Outcome	Details	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	
Semester 3	Physical Optics BOPTOM 112 L	CO1	To understand about fundamentals of light, properties and various phenomena of light	3	2	2	1	1	1	3	3	2.0
		Total		3	2	2	1	1	1	3	3	2.0
	Geometrical Optics BOPTOM 113 L	CO1	To equip the students with a thorough knowledge of mirrors and lenses	3	2	3	1	1	1	3	3	2.1
		CO2	To be able to predict the basic properties of the images formed by various optical instruments.	3	3	3	1	1	1	3	3	2.3
		Total		3	2.5	3	1	1	1	3	3	1.5
	Visual Optics I/II BOPTOM 114 L	CO1	To understand the fundamentals of optical components of the eye, and to predict the retinal image formed by optical system of the eye.	3	3	2	1	1	1	3	3	2.1
		CO2	Ability to manage refractive errors with understanding of visual acuity, measurement techniques of optical constants of eye, objective and subjective refraction.	3	3	3	3	3	3	3	3	3.0
		Total		3	3	2.5	2	2	2	3	3	2.6
	Ocular Diseases I BOPTOM 115 L	CO1	To understand and apply knowledge about the Etiology,Epidemiology, clinical picture of ocular diseases, Diagnostic approach and Management of the anterior segment ocular diseases	3	3	3	3	3	3	3	3	3.0
		Total		3	3	1	2	3	2	3	2	2.8
	Clinical Examinations and Visual Systems BOPTOM 116 L	CO1	To know the purpose, and ability to set up devices required for diagnostic tests, understand indications and contraindications of the test, perform step-by-step procedures, document and interpret the findings of the various clinical optometry procedures	3	3	3	3	3	3	3	3	3.0
		Total		3	3	2	3	3	1	2	3	1.8
	Pursuit of Inner Self Excellence (POIS)	CO1	Students will become self dependent, more decisive and develop intuitive ability for their study and career related matter.	2								0.3
		CO2	Development of the ability to present their ideas in professional manner	2								0.3
		CO3	Enhance communication skills, public speaking & improved Presentation ability	2								0.3
		CO4	Students will be able to explore their inner potential and inner ability to become a successful researcher or professional & hence become more focused.	2								0.3
		CO5	Ability to observe and manage stress levels while performing their professional duties	2								0.3
		CO6	Development of personal attributes like Empathy, Compassion, Service, Love & brotherhood, ability to serve the society and industry in better way with teamwork and thus grow professionally	2								0.3
		Total		2								0.3
	Organizational Behavior GEC 002 L	CO1	Describe and apply motivation theories to team and organizational scenarios in order achieve a team's or an organization's goals and objectives	2			3	2	3			1.3
		CO2	Explain the effect of personality, attitudes, perceptions and attributions on their own and other's behaviours in team and organizational settings	1			3	1	3			1.0
		CO3	Explain types of teams and apply team development, team effectiveness, and group decision making models and techniques. Analyse and apply leadership theories and better understand their own leadership style.	1			3	1	3			1.0
		Total		1.3			3.0	1.3	3			1.1

Semester 4	Optometric Optics I & II BOPTOM 117 L	CO1	To understand the theory of spectacle lenses, their materials,manufacturing process, types, advantages and disadvantages, calculations involved, when and how to prescribe	3	2	3	1	1	1	3	3	2.1
		CO2	Demonstrat and apply the knowledge of construction, design application and development of lenses . particularly of the methods of calculating their power and effect ,selection of lenses , dispensing, troubleshooting and complaint handling	3	3	3	3	3	3	3	3	3.0
	Total		3	2.5	3	2	2	2	3	3	2.6	
	Ocular Diseases II & Glaucoma BOPTOM 118 L	CO1	To understand and apply knowledge about the Etiology,Epidemiology, clinical picture of ocular diseases, Diagnostic approach and ,Management of the posterior segment ocular diseases and glaucoma.	3	3	3	3	3	3	3	3	3.0
		Total		3	3	3	3	3	3	3	3	3.0
	Dispensing Optics BOPTOM 119 L	CO1	To understand the theory behind spectacle frames, their materials,manufacturing process, types, advantages and disadvantages, calculations involved, when and how to prescribe	3	3	3	1	1	3	3	3	2.5
		CO2	To understand and apply the know ledge of construction, designs and types of spectacle frames, selection of frames, measurements associated with dispensing of spectacle.	3	3	3	1	3	1	3	3	2.5
		CO3	Ability to dispense septacles with appropriate instructions, perform troubleshooting and resolve complaints of the patients	3	3	3	3	2	3	3	3	2.9
		Total		3	3	3	1.7	2.0	2.3	3	3	2.6
	Optometric Instrumentation BOPTOM 120 L	CO1	To gain theoretical knowledge and basic practical skill in handling instruments used in optometry/ ophthalmogy clinical practises	3	3	3	3	3	3	3	3	3.0
		Total		3	3	3	3	3	3	3	3	3.0
	Basic &Ocular Pharmacology BOPTOM 121 L	CO1	To understand the drug compositions, actions, uses, adverse effects and mode of administration of drugs, especially related to eyes.	3	3	2	1	1	1	3	3	2.1
		Total		3	3	2	1	1	1	3	3	2.1
	Computer and applications AEC 003 L	CO1	Discuss about health informatics and different IT applications in allied health care.	3	1	1	1	3	2	2	3	2.0
		CO2	Explain the function of Hospital Information Systems	3	1	1	1	3	2	1	1	1.6
		CO3	Understand medical standards	3	1	1	1	3	1	1	1	1.5
		Total		3	1	1	1	3	1	1	1	1.7
	Biostatistics and Research Methodology AEC 004 L	CO1	To understand the importance, study designs & Methodology of research	3	1	1	1	1	2	2	3	1.8
CO2		To learn in detail about sampling, probability and sampling distribution, significance tests correlation and regression and multivariate analysis.	3	1	1	1	1	2	2	3	1.8	
Total		3	1	1	1	1	2	2	3	1.8		
Semester 5	Contact Lenses I BOPTOM 123 L	CO1	A detailed knowledge of lens design, materials, and manufacture for RGP including verification	3	3	3	1	1	1	3	3	2.3
		CO3	An ability to fit and assess a range of RGP Lenses for Spherical, regular and irregular astigmatism toric and Presbyopia correction	3	3	3	3	3	3	3	3	3.0
		CO4	Ability to finalise the CL design for various ocular conditions and patient demands, recommending care and maintenance schedule	3	3	3	3	3	3	3	3	3.0
		CO5	Identify and manage the adverse effects of contact lens	3	3	3	3	3	3	3	3	3.0
		Total		3	3	3	2.5	2.5	2.5	3	3	2.8
	Binocular Vision I & II BOPTOM 124 L	CO1	To gain knowledge of the gross anatomy and physiology relating to the extraocular muscles	3	1	1	1	1	1	3	3	1.8
		CO2	Provide a detailed explanation of, and differentiate between the etiology, investigation and management of binocular vision anomalies	3	1	1	1	1	1	3	3	1.8
		CO3	Adapt skills and interpret clinical results following investigation of binocular vision anomalies appropriately and safely	3	3	3	2	3	3	3	3	2.9
		To understand the role of an optometrists for co management of an strabismic anomalies with ophthalmologist		3	3	3	3	3	3	3	3	3.0
		Total		3	2	2	1.8	2	2	3	3	2.3
	Low Vision Aids BOPTOM 125 L	CO1	Understanding definition ,epidemiology and terminology of Low Vision	3	1	1	1	1	1	3	3	1.8
		CO2	Ability to do assessment of low vision patients and determine appropriate management plan for them.	3	3	3	3	3	3	3	3	3.0
		CO3	Ability to determine magnification requirements and to prescribe, dispense electronic and optical low vision task appropriate devices.	3	3	3	3	3	3	3	2	2.9
		CO4	Ability to select and prescribe suitable functional adaptive devices for LV patients	3	3	3	3	3	3	3	3	3.0
		CO5	Ability to establish effective communication with individuals, their family, careers and with other organizations and professionals for effective management of Lypatient	3	3	3	3	3	3	3	3	3.0
	Total		3	3	3	3	3	3	3	3	2.8	2.7
	Systemic Diseases BOPTOM 126 L	CO1	To have an understanding of various systemic diseases that all affect the eyes	3	1	1	1	1	1	3	3	1.8
		CO2	To have an understanding of the ocular side effects of various drugs that are used to manage or treat systemic diseases	3	1	1	1	1	1	3	3	1.8
CO3		To understand the role of an optometrists for co management of an systemic diseases with other health care professionals	3	3	3	3	3	3	3	3	3.0	
Total		3	2	2	2	2	2	3	3	2.2		
Basics of Clinical Skill Learning CEC 005 L	CO1	After successful accomplishment of the course, the students would be able to Measure Vital Signs, do basic physical Examination of the patients, NG tube basics, Administration of Medicines	3	1	1	2	3	2	2	1	1.9	
	CO2	The students will learn about Asepsis, and the Cleanliness related to asepsis and on mobility of the patients	3	1	1	2	3	2	2	1	1.9	
Total		3	1	1	2	3	2	2	1	1.9		
Semester 6	Hospital Operation Management CEC 006 L	CO1	Understand and apply resource management concepts (personnel, finance, and material resources) and the processes and strategies needed in specific hospital sectors	3	1	1	1	3	2	2	3	2.0
		CO2	Communicate effectively and develop their leadership and teambuilding abilities	1	1	1	3	3	3	1	1	1.8
		CO3	Apply modern change management and innovation management concepts to optimize structures	1	1	1	3	3	3	1	1	1.8
		CO4	Analyze existing hospital service policies and enhance their alignment within the local and national context	1	1	1	3	3	3	1	1	1.8
	Total		1	1	1	3	3	3	1	1	1.8	
	Contact Lenses II BOPTOM 128 L	CO1	A detailed knowledge of lens design, materials, and manufacture for Soft contact lenses including verification	3	3	2	1	1	1	3	3	2.1
		CO2	An ability to fit and assess a range of SCL Lenses for Spherical, astigmatism and Presbyopia correction	3	3	3	3	3	3	3	3	3.0
		CO3	Ability to finalise the CL design for various ocular conditions and patient demands, recommending care and maintenance schedule	3	3	3	3	3	3	3	3	3.0
		CO4	Identify and manage the adverse effects of contact lens	3	3	3	3	3	3	3	3	3.0
	Total		3	3	2.8	2.5	2.5	2.5	3	3	2.8	
Sports Vision BOPTOM 129 L	CO1	To understand visual demands for various kinds of sports for athletes	3	1	1	1	1	1	3	3	1.8	
	CO2	To perform a comprehensive sports vision assessment for athletes	3	3	3	1	2	1	3	3	2.4	
	CO3	To be able prescribe vision correction appropriate to address the visual demands for sport activity	3	3	3	3	3	3	3	3	3.0	
	CO4	To be able to prescribe vision training and protective devices to minimize ocular trauma due to sports.	3	3	3	3	3	3	3	3	3.0	
Total		3	3	3	3	3	3	3	3	2.5		
Pediatric and Geriatric Optometry BOPTOM 130 L	CO1	To gain knowledge on common ocular diseases in pediatric and geriatric age group.	3	1	1	1	1	1	3	3	1.8	
	CO2	Be able to identify, investigate the age related changes/ developmental and congenital anomalies in the eyes.	3	3	3	1	2	1	3	3	2.4	
	CO3	Communicate and counsel effectively with the pediatric and geriatric patients and their attendees.	3	3	3	3	2	3	3	3	2.9	
	CO4	To dispense appropriate optical correction in the form of Spectacle/ Contact lenses/ LVA with proper instructions.	3	3	3	3	3	3	3	3	3.0	
	CO5	Communicate professionally with other health care professionals in terms of accurate presentation of patients' symptoms, critical analysis of clinical findings and suitable plan of action	3	3	3	3	3	3	3	3	3.0	

		CO6	Recognize the professional responsibility and need of life-long learning in geriatric and pediatric eye care.	3	3	2	3	2	2	3	3	2.6
		Total		3	3	2	3	2	2	3	3	2.6
		CO1	To gain and demonstrate the knowledge of visual requirements of jobs* To be able to apply different types of protocols for doing a right clinical history according to the patient profile and its context (workplace, free activities, etc).	3	1	1	1	1	1	3	3	1.8
		CO2	To be able to know the functional limits of human vision and its relationship with age, as well as at occupational contexts and free activities, linking with the task visibility factors	3	1	1	1	1	1	3	3	1.8
		CO3	To acquire ability for examining, give diagnosis, and manage visual anomalies, with special relevance in the differential diagnosis related with occupational and free activity contexts	3	3	3	3	3	3	3	3	3.0
		CO4	To be able to evaluate eye hazards in occupational or free-time activities under radiant energy exposures, as well as continuous light sources such as laser, and understand their controls for avoiding eye injuries	3	3	3	3	2	2	3	3	2.8
		CO5	To be able to identify and analyze environmental and occupational hazards causing eye injuries (mechanic, chemical, electric, etc).	3	3	2	2	3	2	3	3	2.6
		CO6	To acquire ability for evaluating the visual performance of any patient and propose appropriate optical prescription, environment design, visual therapy, etc	3	3	3	3	3	2	3	3	2.9
		CO7	To be able to communicate and inform to patient about diagnostic tests, him/her clearly explaining the interpretation and their consequences of their diagnosis.	3	3	3	2	3	2	3	3	2.8
		CO8	To gain knowledge of the international and national standards related to visual and eye health in variety of occupations	3	3	1	1	2	1	3	3	2.1
		Total		3	3	1	1	2	1	3	3	2.5

MAPPING AVERAGE										
Semester	Subject	PO1	P02	PO3	PO4	PO5	PO6	PO7	PO8	Average
Semester 3	Physical Optics BOPTOM 112 L	3	2	2	1	1	1	3	3	2
	Geometrical Optics BOPTOM 113 L	3	3	3	1	1	1	3	3	2
	Visual Optics I/II BOPTOM 114 L	3	3	3	2	2	2	3	3	3
	Ocular Diseases I BOPTOM 115 L	3	3	1	2	3	2	3	2	3
	Clinical Examinations and Visual Systems BOPTOM 116 L	3	3	2	3	3	1	2	3	2
	Pursuit of Inner Self Excellence (POIS)	2	2	2	2	2	2	2	2	2
	Organizational Behavior GEC 002 L	2	2	2	2	2	2	2	2	2
Semester 4	Optometric Optics I & II BOPTOM 117 L	3	3	3	2	2	2	3	3	3
	Ocular Diseases II & Glaucoma BOPTOM 118 L	3	3	3	3	3	3	3	3	3
	Dispensing Optics BOPTOM 119 L	3	3	3	2	2	2	3	3	3
	Optometric Instrumentation BOPTOM 120 L	3	3	3	3	3	3	3	3	3
	Basic &Ocular Pharmacology BOPTOM 121 L	3	3	2	1	1	1	3	3	2
	Computer and applications AEC 003 L	3	1	1	1	3	1	1	1	2
	Biostatistics and Research Methodology AEC 004 L	3	1	1	1	1	2	2	3	2
Semester 5	Contact Lenses I BOPTOM 123 L	3	3	3	3	3	3	3	3	3
	Binocular Vision I & II BOPTOM 124 L	3	2	2	2	2	2	3	3	2
	Low Vision Aids BOPTOM 125 L	3	3	3	3	3	3	3	3	3
	Systemic Diseases BOPTOM 126 L	3	2	2	2	2	2	3	3	2
	Basics of Clinical Skill Learning CEC 005 L	3	1	1	2	3	2	2	1	2
	Hospital Operation Management CEC 006 L	1	1	1	3	3	3	1	1	2
	Contact Lenses II BOPTOM 128 L	3	3	3	3	3	3	3	3	3
Semester 6	Sports Vision BOPTOM 129 L	3	3	3	3	3	3	3	3	3
	Pediatric and Geriatric Optometry BOPTOM 130 L	3	3	2	3	2	2	3	3	3
	Occupational Optometry BOPTOM 131 L	3	3	1	1	2	1	3	3	2

CO & PO Relationships (Mapping Strength)															
Programe - B. Optometry															
Semester - Smester III, IV, V & VI															
Semester	Course & Course code	CO	CO Detail	CO & PO Relationships	Domain	Unit	Lecture		Lab		Clinical		Total		Strength Level of CO addressing to PO Level 3;>50%, Level 2: 30%-50%, Level 1:< 30%, Not addressed <5%
Semester 3	Physical Optics BOPTOM 112 L	CO1	To understand about fundamentals of light, properties and various phenomena of light	PO1,PO2 ,PO3,PO7,PO8	C	1'- 5	45	100	60	100		0	105	100	3
							45	100		0		0	45	100	
	Geometrical Optics BOPTOM 113 L	CO1	To equip the students with a thorough knowledge of mirrors and lenses	PO1,PO2 ,PO3,PO7,PO8	C	1'- 5	29	64	30	50	0	0	59	56	3
		CO2	To be able to predict the basic properties of the images formed by various optical instruments.	PO1-PO8	CAP	7'-12	16	36	30	50	0	0	46	44	2
							45	100		100	0	0	45	100	
	Visual Optics I/II BOPTOM 114 L	CO1	To understand the fundamentals of optical components of the eye, and to predict the retinal image formed by optical system of the eye.	PO1,PO2 ,PO3,PO7,PO8	C	1'-2	33	73	30	50	0	0	63	53	3
		CO2	Ability to manage refractive errors with understanding of visual acuity, measurement techniques of optical constants of eye, objective and subjective refraction.	PO1-PO8	CAP	3'-4	27	60	30	50	0	0	57	48	2
							60	100		60	100	0	0	120	100
	Ocular Diseases I BOPTOM 115 L	CO1	To understand and apply knowledge about the Etiology,Epidemiology, clinical picture of ocular diseases, Diagnostic approach and ,Management of the anterior segment ocular diseases	PO1-PO8	CAP	1'-6	60	100	0	0		0	60	100	3
							60	100		100		0	60	100	
	Clinical Examinations and Visual Systems BOPTOM 116 L	CO1		PO1-PO8	CAP	1'-4	45	100	30	50	30	50	105	100	3
			To know the purpose, and ability to set up devices required for dagnostic tests, understand indications and contraindications of the test, perform step-by-step procedures, document and interpret the findings of the various clinical optometry procedures				45	100		50		50	105	100	
		CO1	Students will become self dependent, more decisive and develop intuitive ability for their study and career related matter.	PO1-PO8	C.A	1,2	8	18%					8	18%	1

Semester 4	Pursuit of Inner Self Excellence (POIS)	CO2	Development of the ability to present their ideas in professional manner	PO1-PO8	C,A	2,4	7	16%					7	16%	1
		CO3	Enhance communication skills, public speaking & improved Presentation ability	PO1-PO8	C,A	1	5	11%					5	11%	1
		CO4	Students will be able to explore their inner potential and inner ability to become a successful researcher or professional & hence become more focused.	PO1-PO8	C,A	1,3	15	33%					15	33%	2
		CO5	Ability to observe and manage stress levels while performing their professional duties	PO1-PO8	C,A	1	5	11%					5	11%	1
		CO6	Development of personal attributes like Empathy, Compassion, Service, Love & brotherhood, ability to serve the society and industry in better way with teamwork and thus grow professionally	PO1-PO8	C,A	4	5	11%					5	11%	1
							45	100%					45	100%	
	Organizational Behavior GEC 002 L	CO1	Describe and apply motivation theories to team and organizational scenarios in order achieve a team's or an organization's goals and objectives	PO1-PO8	C,A	1,3,4	18	40%					18	40%	2
		CO2	Explain the effect of personality, attitudes, perceptions and attributions on their own and other's behaviours in team and organizational settings	PO1-PO8	C,A	2,5	14	31%					14	31%	2
		CO3	Explain types of teams and apply team development, team effectiveness, and group decision making models and techniques.	PO1-PO8	C,A	6,7	13	29%					13	29%	1
			Analyse and apply leadership theories and better understand their own leadership style.				45	100%					45	100%	
	Optometric Optics I & II BOPTOM 117 L	CO1	To understand the theory of spectacle lenses, their materials,manufacturing process, types, advantages and disadvantages, calculations involved, when and how to prescribe	PO1,PO2 ,PO3,PO7,PO8	C	1'- 12	29	48	45	50		0	74	49	2
		CO2	Demonstrat and apply the knowledge of construction, design application and development of lenses . particularly of the methods of calculating their power and effect ,selection of lenses , dispensing, troubleshooting and complaint handling	PO1-PO8	CAP	13'-19	31	52	45	50		0	76	51	3
							60	100		100		0	60	100	
	Ocular Diseases II & Glaucoma BOPTOM 118 L	CO1	To understand and apply knowledge about the Etiology,Epidemiology, clinical picture of ocular diseases, Diagnostic approach and ,Management of the posterior segment ocular diseases and glaucoma.	PO1-PO8	CAP	1'-5	45	100		0		0	45	100	3
							45	100		0		0	45	100	
	Dispensing Optics BOPTOM 119 L	CO1	To understand the theory behind spectacle frames, their materials,manufacturing process, types, advantages and disadvantages, calculations involved, when and how to prescribe	PO1,PO2 ,PO3,PO7,PO8	C	1	5	11	5	6	5	6	15	11	1
		CO2	To understand and apply the knowledge of construction, designs and types of spectacle frames, selection of frames, measurements associated with dispensing of spectacle.	PO1-PO8	CAP	2' - 5	15	33	35	39	35	39	85	63	3
		CO3	Ability to dispense septacles with appropriate instructions, perform troubleshooting and resolve complaints of the patients	PO1-PO8	CAP	6'-10	25	56	5	6	5	6	35	26	2
							45	100	45	44	45	50	135	100	
	Optometric Instrumentation BOPTOM 120 L	CO1	To gain theoretical knowledge and basic practical skill in handling instruments used in optometry/ ophthalmogy clinical practises	PO1-PO8	CAP	1'- 11	45	100	15	50	15	25	75	100	3
							45	100	15	50	15	25	75	100	
	Basic &Ocular Pharmacology BOPTOM 121 L	CO1	To understand the drug compositions, actions, uses, adverse effects and mode of administration of drugs, especially related to eyes.	PO1,PO2 ,PO3,PO7,PO8	C	1'- 10	30	100	0	0	0	0	30	100	3
							30	100	0	0	0	0	30	100	
	Computer and applications AEC 003 L	CO1	Discuss about health informatics and different IT applications in allied health care.	PO1-PO8	C,A	1,2,3,4,5	16	36%					16	36%	2
		CO2	Explain the function of Hospital Information Systems	PO1-PO8	C,A	6,7,8	15	33%					15	33%	2
		CO3	Understand medical standards	PO1-PO8	C,A	9,10,11,12	14	31%					14	31%	2
							45	100%					45	100%	
	Biostatistics and Research Methodology AEC 004 L	CO1	To understand the importance, study designs & Methodology of research	PO1-PO8	C,A	1,2,3	15	33%					15	33%	2
		CO2	To learn in detail about sampling, probability and sampling distribution, significance tests correlation and regression and multivariate analysis.	PO1-PO8	C,A	4,5,6,7,8,9	30	67%					30	67%	3
							45	100%					45	100%	

Semester 5	Contact Lenses I BOPTOM 123 L	CO1	A detailed knowledge of lens design, materials, and manufacture for RGP including verification	PO1,PO2 ,PO3,PO7,PO8	C	1,2,3,4,5,6,7,8,9,10	23	51	1	3	0	0	24	32	2
		CO3	An ability to fit and assess a range of RGP Lenses for Spherical, regular and irregular astigmatism toric and Presbyopia correction	PO1-PO8	CAP	11,12,13,14,15	10	22	5	17	5	17	20	27	1
		CO4	Ability to finalise the CL design for various ocular conditions and patient demands, recommending care and maintenance schedule	PO1-PO8	CAP	16'-17	5	11	5	17	5	17	15	20	1
		CO5	Identify and manage the adverse effects of contact lens	PO1-PO8	CAP	18'-22	7	16	4	13	5	17	16	21	1
							45	100	15	50	15	50	75	100	
	Binocular Vision I & II BOPTOM 124 L	CO1	To gain knowledge of the gross anatomy and physiology relating to the extraocular muscles	PO1,PO2 ,PO3,PO7,PO8	C	1'-4	17	28	0	0	0	0	17	19	1
		CO2	Provide a detailed explanation of, and differentiate between the etiology, investigation and management of binocular vision anomalies	PO1-PO8	CAP	5'-18	30	50	8	27	8	27	46	51	3
		CO3	Adapt skills and interpret clinical results following investigation of binocular vision anomalies appropriately and safely	PO1-PO8	CAP	5'-18	10	17	7	23	7	23	24	27	1
			To understand the role of an optometrists for co management of an strabismic anomalies with ophthalmologist	PO1-PO8	CAP	5'-18	3	5	0	0	0	0	3	3	1
							60	22	15	23		0	75	100	
	Low Vision Aids BOPTOM 125 L	CO1	Understanding definition ,epidemiology and terminology of Low Vision	PO1,PO2 ,PO3,PO7,PO8	C	1 & 2	4	13	0	0	0	0	4	13	1
		CO2	Ability to do assessment of low vision patients and determine appropriate management plan for them.	PO1-PO8	CAP	3 & 4	4	13	0	0	0	0	4	13	1
		CO3	Ability to determine magnification requirements and to prescribe, dispense electronic and optical low vision task appropriate devices.	PO1-PO8	CAP	5 & 6	5	17	0	0	0	0	5	17	1
		CO4	Ability to select and prescribe suitable functional adaptive devices for LV patients	PO1-PO8	CAP	7'-10	11	37	0	0	0	0	11	37	2
		CO5	Ability to establish effective communication with individuals, their family, careers and with other organizations and professionals for effective management of LV patient	PO1-PO8	CAP	11 & 12	6	20	0	0	0	0	6	20	1
							30	57		0	0	0	30	100	
	Systemic Diseases BOPTOM 126 L	CO1	To have an understanding of various systemic diseases that all affect the eyes	PO1,PO2 ,PO3,PO7,PO8	C	1'-17	20	44	0	0	0	0	20	44	2
		CO2	To have an understanding of the ocular side effects of various drugs that are used to manage or treat systemic diseases	PO1,PO2 ,PO3,PO7,PO8	C	1'-17	20	44	0	0	0	0	20	44	2
		CO3	To understand the role of an optometrists for co management of an systemic diseases with other health care professionals	PO1-PO8	CAP	1'-17	5	11	0	0	0	0	5	11	1
							25	100	0	0	0	0	45	100	
	Basics of Clinical Skill Learning CEC 005 L	CO1	After successful accomplishment of the course, the students would be able to Measure Vital Signs, do basic physical Examination of the patients, NG tube basics, Administration of Medicines	PO1-PO8	C,A	1,2,3,4,6	40	89%					40	89%	3
		CO2	The students will learn about Asepsis, and the Cleanliness related to asepsis and on mobility of the patients	PO1-PO8	C,A	5	5	11%					5	11%	1
							45	1		0		0	45	100%	
	Hospital Operation Management CEC 006 L	CO1	Understand and apply resource management concepts (personnel, finance, and material resources) and the processes and strategies needed in specific hospital sectors	PO1-PO8	C,A	1,2	15	33%					15	33%	2
		CO2	Communicate effectively and develop their leadership and teambuilding abilities	PO1-PO8	C,A	4	10	22%					10	22%	1
		CO3	Apply modern change management and innovation management concepts to optimize structures	PO1-PO8	C,A	3	10	22%					10	22%	1
		CO4	Analyze existing hospital service policies and enhance their alignment within the local and national context	PO1-PO8	C,A	5	10	22%					10	22%	1
							20	100%		0		0	20	100%	
	Contact Lenses II BOPTOM 128 L	CO1	A detailed knowledge of lens design, materials, and manufacture for Soft contact lenses including verification	PO1,PO2 ,PO3,PO7,PO8	C	1,2,3,4,5,6,7,8,9,10	23	51	1	3	0	0	24	32	2
		CO2	An ability to fit and assess a range of SCL Lenses for Spherical, astigmatism and Presbyopia correction	PO1-PO8	CAP	11,12,13,14,15	10	22	5	17	5	17	20	27	1
		CO3	Ability to finalise the CL design for various ocular conditions and patient demands, recommending care and maintenance schedule	PO1-PO8	CAP	16'-17	5	11	5	17	5	17	15	20	1
		CO4	Identify and manage the adverse effects of contact lens	PO1-PO8	CAP	18'-22	7	16	4	13	5	17	16	21	1
							45	100	15	50	15	50	75	100	
		CO1	To understand visual demands for various kinds of sports for athletes	PO1,PO2 ,PO3,PO7,PO8	C	1'-6	12	40	0	0	0	0	12	40	2

Semester 6	Sports Vision BOPTOM 129 L	CO2	To perform a comprehensive sports vision assessment for athletes	PO1-PO8	CAP	6'-7	6	20	0	0	0	0	6	20	1
		CO3	To be able prescribe vision correction appropriate to address the visual demands for sport activity	PO1-PO8	CAP	8',9 & 10	8	27	0	0	0	0	8	27	1
		CO4		PO1-PO8	CAP	11'-13	4	13	0	0	0	0	4	13	1
			To be able to prescribe vision training and protective devices to minimize ocular trauma due to sports.				30	100	0	0	0	0	30	100	
	Pediatric and Geriatric Optometry BOPTOM 130 L	CO1	To gain knowledge on common ocular diseases in pediatric and geriatric age group.	PO1,PO2 ,PO3,PO7,PO8	C	1',2,5 ,10, 13,19,20,24	11	37	0	0	2	7	13	43	2
		CO2	Be able to identify, investigate the age related changes/ developmental and congenital anomalies in the eyes.	PO1,PO2 ,PO3,PO7,PO8	CA	3,4,11,12,14 ,15,16	9	30	0	0	7	23	16	53	3
		CO3	Communicate and counsel effectively with the pediatric and geriatric patients and their attendees.	PO1-PO8	CA	8,9,17,18,19 ,21,22,23,	1	3	0	0	5	17	6	20	1
		CO4	To dispense appropriate optical correction in the form of Spectacle/ Contact lenses/ LVA with proper instructions.	PO1-PO8	CAP	8,9,17,18,19 ,21,22,23,	7	23	0	0	6	20	13	43	2
		CO5	Communicate professionally with other health care professionals in terms of accurate presentation of patients' symptoms, critical analysis of clinical findings and suitable plan of action	PO1-PO8	CA	8,9,17,18,19 ,21,22,23,	1	3	0	0	5	17	6	20	1
		CO6	Recognize the professional responsibility and need of life-long learning in geriatric and pediatric eye care.	PO1-PO8	CAP	8,9,17,18,19 ,21,22,23,	1	3	0	0	5	17	6	20	1
							30	100	0	0	30	100	60	200	
	Occupational Optometry BOPTOM 131 L	CO1		PO1,PO2 ,PO3,PO7,PO8	1	4	13	0	0	0	0	0	4	13	1
			To gain and demonstrate the knowledge of visual requirements of jobs• To be able to apply different types of protocols for doing a right clinical history according to the patient profile and its context (workplace, free activities, etc).												
		CO2		PO1,PO2 ,PO3,PO7,PO8	4	2	7	0	0	0	0	0	2	7	1
			To be able to know the functional limits of human vision and its relationship with age, as well as at occupational contexts and free activities, linking with the task visibility factors												
		CO3		PO1-PO8	6	3	10	0	0	0	0	0	3	10	1
			To acquire ability for examining, give diagnosis, and manage visual anomalies, with special relevance in the differential diagnosis related with occupational and free activity contexts												
		CO4		PO1-PO8	2,3	6	20	0	0	0	0	0	6	20	1
			To be able to evaluate eye hazards in occupational or free-time activities under radiant energy exposures, as well as continuous light sources such as laser, and understand their controls for avoiding eye injuries												
		CO5	To be able to identify and analyze environmental and occupational hazards causing eye injuries (mechanic, chemical, electric, etc).	PO1-PO8	5	3	10	0	0	0	0	0	3	10	1
		CO6	To acquire ability for evaluating the visual performance of any patient and propose appropriate optical prescription, environment design, visual therapy, etc	PO1-PO8	6,7,10	9	30	0	0	0	0	0	9	30	1
		CO7		PO1-PO8	9	3	10	0	0	0	0	0	3	10	1
			To be able to communicate and inform to patient about diagnostic tests, him/her clearly explaining the interpretation and their consequences of their diagnosis.												
		CO8		PO1-PO8	8	3	10	0	0	0	0	0	3	10	1
			To gain knowledge of the international and national standards related to visual and eye health in variety of occupations				33	110	0	0	0	0	33	110	

CO PO MAPPING (Matrix)												
Programe - B.Sc AT OT												
Semester - Smester III, IV, V & VI												
PO1 – Knowledge & Skill Development- An ability to apply knowledge of healthcare technology (including clinical subjects, investigations/ Procedures, handling instruments)												
PO2 – Critical Thinking – To apply professional judgment and rational thinking in decision-making												
PO3 - Problem solving – Correlation of professional knowledge applied to current clinical or healthcare practices.												
PO4 -Professional ethics – To adopt and apply code of ethics prescribed by professional bodies in professional and social context. Maintain appropriate boundaries with patients and care givers and maintain confidentiality.												
PO5 – Communication skills – To communicate effectively with the patients, care givers and other healthcare professional for addressing patient related issues and to deliver and information												
PO6 – Individual / Team work - ability to function on multi-disciplinary teams												
PO 7- Holistic development: Development of intellectual mental, Physical, Emotional & Social abilities, so as to be capable of facing the demands & challenges of every day life.												
PO8 – Lifelong learning - To develop continuous learning attitude in context of research, advances in clinical practices and to inculcate professionalism and evidence based practices												
PO Mapping same with correlation level 3,2,1 The notation of 1 - low, 2 - moderate , 3 - high												
				Knowledge & Skill Development	Critical Thinking	Problem solving	Professional ethics	Communication skills	Individual / Team work	Holistic development	Lifelong learning	Average
Semester	Course / Course Code	Course Outcome	Details	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	
Semester III	Introduction To Operation Theatre Technology (OT)	CO1	Demonstrate ability	3	2	2	3	2	3	1	3	2.3
		CO2	Able to identify and	1	2	1	2	2	2	1	3	1.7
		CO3	Manage and maintain	3	3	2	3	2	2	2	3	2.5
		Average		2.3	2.3	2.6	2	2	2.3	1.3	3	2.2
	Introduction to Anesthesia Technology (AT)	CO1	Suggesting a simple a	3	2	3	3	2	2	2	3	2.5
		CO2	Monitoring in the Op	3	2	2	2	3	3	2	3	2.5
		Average		3	2	2.5	2.5	2.5	2.5	2	3	2.5
	Principles Of Anesthesia	CO1	Students understand	3	3	3	3	2	3	2	3	2.7
		CO2	Able to Monitor the	3	3	3	3	3	3	3	3	3
		Average		3	3	3	3	2.5	3	2.5	2	2.7
	Pursuit of Inner Self Excellence (POIS) GEC 001 L	CO1	Students will become	2	2	3	3	2	3	2	3	2.5
		CO2	Student’s ability to p	2	2	2	2	2	2	2	2	2
		CO3	Enhanced communic	2	2	2	2	2	2	2	2	2
		CO4	Students will be able	3	2	2	3	3	3	2	3	2.6
		CO5	Students will observe	3	2	2	3	2	1	1	2	2
		CO6	With the developme	3	2	2	2	2	1	1	3	2
		Average		2.5	2	2.1	2.5	2.1	2	1.6	2.5	2.1
	Organizational Behavior GEC 002 L	CO1	Describe and apply n	1	1	1	3	2	3	1	2	1.7
		CO2	Explain the effect of	1	1	1	3	2	3	1	2	2.3
		CO3	Explain types of team	1	1	1	3	2	3	1	2	1.7
		Average		1	1	1	3	2	3	1	2	1.75
	Basic Techniques of Anesthesia	CO1	Student learns the ra	3	3	3	2	3	3	2	3	2.7
		CO2	Incorporates Basic u	3	3	3	2	3	3	2	3	2.7
		CO3	Performs skills for M	3	3	3	2	3	3	2	3	2.7
		Average		3	3	3	2	3	3	2	3	2.7

MAPPING AVERAGE (Programme - B.Sc AT OT)										
SEMESTER	COURSE	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	Average
SEM III	Introduction To Operation Theatre Technology	2.3	2.3	2.6	2	2	2.3	1.3	3	2.2
	Introduction to Anesthesia Technology (AT)	3	2	2.5	2.5	2.5	2.5	2	3	2.5
	Principles Of Anesthesia	3	3	3	3	2.5	3	2.5	2	2.7
	Pursuit of Inner Self Excellence (POIS) GEC 001	2.5	2	2.1	2.5	2.1	2	1.6	2.5	2.1
	Organizational Behavior GEC 002 L	1	1	1	3	2	3	1	2	1.7
SEM IV	Basic Techniques of Anesthesia	3	3	3	2	3	3	2	3	2.7
	Medical Diseases Influencing Choice of Anesthesia	3	3	3	2	3	3	2	3	2.7
	Medicine Relevant To Operation Theatre	3	3	3	2	3	3	2	3	2.7
	Computers and Applications	2	2	2	1	2	1	1	2	1.6
	Biostatistics and Research Methodology	1.5	1	1	1	1	1	1	3	1.3
SEM V	Basics of Surgical Procedures	3	3	3	2	3	3	2	3	2.7
	CSSD procedures	2.5	1	2	2	1	2	1	2.7	1.7
	Advance Anesthesia Techniques	3	2	2	2	3	2	2	3	2.3
	Basics of Clinical Skill Learning	3	2	2	2	3	2	2	3	2.3
	Hospital Operation Management	2	2	2	1	2	2	1	2	1.7
SEM VI	Basic Intensive Care	3	3	3	2	3	3	2	3	2.7
	Specialized Anesthesia and Surgery	3	3	3	2	3	3	2	3	2.7
	Electronics and Technology in Surgery and Anesthesia	2	2	2	2	2	2	1	2	1.8

CO & PO Relationships (Mapping Strength)															
Programme - Bsc Medical Lab Technology															
Semester - Smester III, IV, V & VI															
				CO & PO Relationships	Domain	Unit	Lecture		Lab		Clinical		Total		Strength Level of CO addressing to PO Level 3:>50%, Level 2: 30%-50%, Level 1:< 30%, Not addressed :<5%
Semester	Course & Course code	CO	CO Detail	PO1-PO8	C.A.P	No	Hrs	%	Hrs	%	Hrs	%	Hrs	%	
	Introduction To Operation Theatre Technology (OT)	CO1	Demonstrate ability to prepare and maintain Operation Theater	1,4,6,8	CAP	1	10	22.2	-	-	36	50	46	39.3	2
		CO2	Able to identify and	8	CP	2,3	25	55.5	-	-	24	33.3	49	41.8	2
		CO3	Manage and maintain	1,2,4,8	CP	4	10	22.2	-	-	12	16.6	22	18.8	1
	Average						45	100	-	-	72	100	117	100	

Introduction to Anesthesia Technology (AT)	CO1	Suggesting a simple anesthetic plan commonly used anesthesia noninvasive	1,3,4,8	CP	1,2,4	27	60	-	-	36	60	63	60	3
	CO2	Monitoring in the Op	1,5,6,8	CP	3,5	18	40	-	-	24	40	42	40	2
Average						45	100	-	-	60	100	105	100	
Principles Of Anesthesia	CO1	Students understand the Basic anaesthetic equipment the working principle of the AT equipment	1,2,3,4,6,8	CP	1,2,3	13	28.8	-	-	-	-	13	28.8	1
	CO2	Able to Monitor the physiological parameters	1,2,3,4,5,6,7,8	CP	4,5,6,7,8,9,10,11	32	71.1	-	-	-	-	32	71.1	3
Average						45	100					45	100	
Pursuit of Inner Self Excellence (POIS) GEC 001 L	CO1	Students will become self dependent, more decisive and develop intuitive ability for their study and career related matter.	1,4,5,8	CA	3	10	22.2	-	-	-	-	10	22.2	1
	CO2	Student's ability to p	1,4,8	CA	-	-	-	-	-	-	-	-	-	
	CO3	Enhanced communication skills, public speaking & improved Presentation ability.	1,5	CA	2	15	33.3	-	-	-	-	15	33.3	2
	CO4	Students will be able to explore their inner potential and inner ability to become a successful researcher or technician & hence become more focused	1,5	A	-	-	-	-	-	-	-	-	-	
	CO5	Students will observe	1,4	A	4	10	22.2	-	-	-	-	10	22.2	1

Semester III			CO6	With the development of personal attributes like Empathy, Compassion, Service, Love & brotherhood, students will serve the society and industry in better way with teamwork and thus grow professionally.	1,8	CA	1	10	22.2	-	-	-	-	10	22.2	1
			Average					45	100					45	100	
		Organizational Behavior GEC 002 L	CO1	Describe and apply motivation theories to team and organizational scenarios in order achieve a team's or an organization's goals and objectives.	4,6	A	1,5	12	26.6	-	-	-	-	12	26.6	1
			CO2	Explain the effect of personality, attitudes, perceptions and attributions on their own and other's behaviours in team and organizational settings.	4,6	CA	2,3,4	20	44.44	-	-	-	-	20	44.44	2

		CO3	Explain types of teams and apply team development, team effectiveness, and group decision making models and techniques. Analyse and apply leadership theories and better understand their own leadership style.	4,6	CA	6,7	13	28.8	-	-	-	-	13	28.8	1
	Average						45	100					45	100	
	Basic Techniques of Anesthesia	CO1	Student learns the rational use selection of regional anaesthesia techniques and the choice of local anaesthesia.	1,2,3,5,6,8	CP	1,2	30	100	-	-	60	100	90	100	3
		CO2	Incorporates Basic understanding of immediate in preoperative patient management.	1,2,3,5,6,8	CAP				-	-					
		CO3	Performs skills for Management of patients in post-anesthesia recovery room	1,2,3,5,6,8	CAP				-	-					
	Average						30	100			60	100	90	100	

Semesterv IV	Medical Diseases Influencing Choice of Anesthesia	CO1	Students understand the apply the knowledge related to drugs, calculations of anesthetic medications in different cardiovascular, respiratory and renal diseases.	1,2,3,5,6,8	C	1,2,3,4,5,6,7,8,9,10,11,12	45	100	-	-	-	-	45	100	3
	Average						45	100			-	-	45	100	
	Medicine Relevant To Operation Theatre Technology	CO1	Students know thoroughly the medicines relevant to OT such Antisialagogues, Sedatives, Anxiolytics and Narcotics understand the use of muscle relaxant and Local Anaesthetics commonly used in OT have knowledge and use of Emergency medicines	1,2,3,5,6,8	CP	1,2,3,4,5	45	100	-	-	-	-	45	100	3
	Average						45	100			-	-	45	100	
	Computers and Applications	CO1	Discuss about health informatics and different IT applications in allied health care.	1,2,3,5,8	CP	1,2,3,4	11	24.4	-	-	-	-	11	24.4	1
		CO2	Explain the function	1,2,3,5,8	CAP	5,6,7,8,9,10	29	64.4	-	-	-	-	29	64.4	3
		CO3	Analyze medical star	1,2,3,5,8	CP	11,12	5	11.1	-	-	-	-	5	11.1	0
	Average						45	100					45	100	
		CO1	To understand the in	1,8	CP	1,2,3,4	20	44.4	-	-	-	-	20	44.4	2

	Biostatistics and Research Methodology	CO2	To learn in detail about sampling, probability and sampling distribution, significance tests correlation and regression, sample size determination, study design and multivariate analysis.	1,8	CAP	5,6,7,8,9	25	55.5	-	-	-	-	25	55.5	3
	Average						45	100					45	100	
	Basics of Surgical Procedures	CO1	Able to assist anesth	1,2,3,5,6,8	CAP	1,2	30	100	-	-	60	100	90	100	3
	Average						30	100			60	100	90	100	
	CSSD procedures	CO1	Able to manage Cent	1,8	CP	1	30	100	-	-	-	-	30	100	3
		CO2	Show efficiency in m	1,8	CP				-	-	-	-			
		CO3	Independently demonstrated skills of disinfection and sterilization	1,8	CP				-	-	-	-			
		CO4	Verbalizes methods a	3,4,6,8	CAP				-	-	-	-			
	Average						30	100					30	100	
	Advance Anesthesia Techniques	CO1	Able to assist anaesthesiologists in advanced anaesthesia procedures such as artificial ventilation and cardiopulmonary bypass.	1,5,8	CAP	1	45	100			60	100	105	100	3
	Average						45	100			60	100	105	100	

		CO3	Apply modern change management and innovation management concepts to optimize structures	1,2,3,5,6,8	CAP	3,4	20	44.44	-	-	-	-	20	44.44	2
		CO4	Analyze existing hospital service policies and enhance their alignment within the local and national context	1,2,3,5,6,8		5	10	22.22	-	-	-	-	10	22.22	1
	Average						45	100					45	100	
Semester VI	Basic Intensive Care	CO1	Should be able to demonstrate all the basic intensive care required at operation theatre and in handling patient in crisis	1,2,3,5,6,8	CAP	1-16	30	100	-	-	-	-	30	100	3
	Average						30	100	-	-	-	-	30	100	
	Specialized Anesthesia and Surgery	CO1	able to help the anaesthetist in administering anaesthesia, assist in various procedures and help in continues monitoring of patients.	1,2,3,5,6,8	CAP	1,2,3,4	60	100	-	-	-	-	60	100	3
	Average						60	100	-	-	-	-	60	100	
	Electronics and Technology in Surgery and Anesthesia	CO1	Knowable about Basic electronics, basic principle, care and maintenance of machine at OT	1,2,3,4,5,6,8	CP	1	25	55.5	-	-	-	-	25	55.5	3
		CO2	Able to manage Indenting, Record keeping and inventory maintenance	1,2,3,4,5,6,8	CP	2	20	44.4	-	-	-	-	20	44.4	2
	Average						45	100	-	-	-	-	45	100	

Table 1: Summary of the data													
Category	Sub-category	Item	Values										
			Value 1	Value 2	Value 3	Value 4	Value 5	Value 6	Value 7	Value 8	Value 9	Value 10	Value 11
Category A	Sub-category A1	Item A1.1	10	20	30	40	50	60	70	80	90	100	110
		Item A1.2	15	25	35	45	55	65	75	85	95	105	115
		Item A1.3	20	30	40	50	60	70	80	90	100	110	120
		Item A1.4	25	35	45	55	65	75	85	95	105	115	125
		Item A1.5	30	40	50	60	70	80	90	100	110	120	130
	Sub-category A2	Item A2.1	12	22	32	42	52	62	72	82	92	102	112
		Item A2.2	17	27	37	47	57	67	77	87	97	107	117
		Item A2.3	22	32	42	52	62	72	82	92	102	112	122
		Item A2.4	27	37	47	57	67	77	87	97	107	117	127
		Item A2.5	32	42	52	62	72	82	92	102	112	122	132
Category B	Sub-category B1	Item B1.1	11	21	31	41	51	61	71	81	91	101	111
		Item B1.2	16	26	36	46	56	66	76	86	96	106	116
		Item B1.3	21	31	41	51	61	71	81	91	101	111	121
		Item B1.4	26	36	46	56	66	76	86	96	106	116	126
		Item B1.5	31	41	51	61	71	81	91	101	111	121	131
	Sub-category B2	Item B2.1	13	23	33	43	53	63	73	83	93	103	113
		Item B2.2	18	28	38	48	58	68	78	88	98	108	118
		Item B2.3	23	33	43	53	63	73	83	93	103	113	123
		Item B2.4	28	38	48	58	68	78	88	98	108	118	128
		Item B2.5	33	43	53	63	73	83	93	103	113	123	133
Category C	Sub-category C1	Item C1.1	14	24	34	44	54	64	74	84	94	104	114
		Item C1.2	19	29	39	49	59	69	79	89	99	109	119
		Item C1.3	24	34	44	54	64	74	84	94	104	114	124
		Item C1.4	29	39	49	59	69	79	89	99	109	119	129
		Item C1.5	34	44	54	64	74	84	94	104	114	124	134
	Sub-category C2	Item C2.1	15	25	35	45	55	65	75	85	95	105	115
		Item C2.2	20	30	40	50	60	70	80	90	100	110	120
		Item C2.3	25	35	45	55	65	75	85	95	105	115	125
		Item C2.4	30	40	50	60	70	80	90	100	110	120	130
		Item C2.5	35	45	55	65	75	85	95	105	115	125	135

Table 2: Summary of the data													
Category	Sub-category	Item	Values										
			Value 1	Value 2	Value 3	Value 4	Value 5	Value 6	Value 7	Value 8	Value 9	Value 10	Value 11
Category D	Sub-category D1	Item D1.1	16	26	36	46	56	66	76	86	96	106	116
		Item D1.2	21	31	41	51	61	71	81	91	101	111	121
		Item D1.3	26	36	46	56	66	76	86	96	106	116	126
		Item D1.4	31	41	51	61	71	81	91	101	111	121	131
		Item D1.5	36	46	56	66	76	86	96	106	116	126	136
	Sub-category D2	Item D2.1	17	27	37	47	57	67	77	87	97	107	117
		Item D2.2	22	32	42	52	62	72	82	92	102	112	122
		Item D2.3	27	37	47	57	67	77	87	97	107	117	127
		Item D2.4	32	42	52	62	72	82	92	102	112	122	132
		Item D2.5	37	47	57	67	77	87	97	107	117	127	137
Category E	Sub-category E1	Item E1.1	18	28	38	48	58	68	78	88	98	108	118
		Item E1.2	23	33	43	53	63	73	83	93	103	113	123
		Item E1.3	28	38	48	58	68	78	88	98	108	118	128
		Item E1.4	33	43	53	63	73	83	93	103	113	123	133
		Item E1.5	38	48	58	68	78	88	98	108	118	128	138
	Sub-category E2	Item E2.1	19	29	39	49	59	69	79	89	99	109	119
		Item E2.2	24	34	44	54	64	74	84	94	104	114	124
		Item E2.3	29	39	49	59	69	79	89	99	109	119	129
		Item E2.4	34	44	54	64	74	84	94	104	114	124	134
		Item E2.5	39	49	59	69	79	89	99	109	119	129	139

Table 3: Summary of the data													
Category	Sub-category	Item	Values										
			Value 1	Value 2	Value 3	Value 4	Value 5	Value 6	Value 7	Value 8	Value 9	Value 10	Value 11
Category F	Sub-category F1	Item F1.1	19	29	39	49	59	69	79	89	99	109	119
		Item F1.2	24	34	44	54	64	74	84	94	104	114	124
		Item F1.3	29	39	49	59	69	79	89	99	109	119	129
		Item F1.4	34	44	54	64	74	84	94	104	114	124	134
		Item F1.5	39	49	59	69	79	89	99	109	119	129	139
	Sub-category F2	Item F2.1	20	30	40	50	60	70	80	90	100	110	120
		Item F2.2	25	35	45	55	65	75	85	95	105	115	125
		Item F2.3	30	40	50	60	70	80	90	100	110	120	130
		Item F2.4	35	45	55	65	75	85	95	105	115	125	135
		Item F2.5	40	50	60	70	80	90	100	110	120	130	140
Category G	Sub-category G1	Item G1.1	21	31	41	51	61	71	81	91	101	111	121
		Item G1.2	26	36	46	56	66	76	86	96	106	116	126
		Item G1.3	31	41	51	61	71	81	91	101	111	121	131
		Item G1.4	36	46	56	66	76	86	96	106	116	126	136
		Item G1.5	41	51	61	71	81	91	101	111	121	131	141
	Sub-category G2	Item G2.1	22	32	42	52	62	72	82	92	102	112	122
		Item G2.2	27	37	47	57	67	77	87	97	107	117	127
		Item G2.3	32	42	52	62	72	82	92	102	112	122	132
		Item G2.4	37	47	57	67	77	87	97	107	117	127	137
		Item G2.5	42	52	62	72	82	92	102	112	122	132	142
Category H	Sub-category H1	Item H1.1	23	33	43	53	63	73	83	93	103	113	123
		Item H1.2	28	38	48	58	68	78	88	98	108	118	128
		Item H1.3	33	43	53	63	73	83	93	103	113	123	133
		Item H1.4	38	48	58	68	78	88	98	108	118	128	138
		Item H1.5	43	53	63	73	83	93	103	113	123	133	143
	Sub-category H2	Item H2.1	24	34	44	54	64	74	84	94	104	114	124
		Item H2.2	29	39	49	59	69	79	89	99	109	119	129
		Item H2.3	34	44	54	64	74	84	94	104	114	124	134
		Item H2.4	39	49	59	69	79	89	99	109	119	129	139
		Item H2.5	44	54	64	74	84	94	104	114	124	134	144

CO PO MAPPING (Matrix)												
Programe - B.Sc Cardic Care Technology												
Semester - Smester III, IV, V & VI												
PO1 – Knowledge & Skill Development- An ability to apply knowledge of healthcare technology (including clinical subjects, investigations/ Procedures, handling instruments)												
PO2 – Critical Thinking – To apply professional judgment and rational thinking in decision-making												
PO3 - Problem solving – Correlation of professional knowledge applied to current clinical or healthcare practices.												
PO4 -Professional ethics – To adopt and apply code of ethics prescribed by professional bodies in professional and social context. Maintain appropriate boundaries with patients and care givers and maintain confidentiality.												
PO5 – Communication skills – To communicate effectively with the patients, care givers and other healthcare professional for addressing patient related issues and to deliver and information												
PO6 – Individual / Team work - ability to function on multi-disciplinary teams												
PO 7- Holistic development: Development of intellectual mental, Physical, Emotional & Social abilities, so as to be capable of facing the demands & challenges of every day life.												
PO8 – Lifelong learning - To develop continuous learning attitude in context of research, advances in clinical practices and to inculcate professionalism and evidence based practices												
PO Mapping same with correlation level 3,2,1 The notation of 1 - low, 2 - moderate , 3 - high												
				Knowled ge & Skill Develop ment	Critical Thinking	Problem solving	Professio nal ethics	Commun ication skills	Individual / Team work	Holistic develop ment	Lifelong learning	Average
Semester	Course / Course Code	Course Outecome	Details	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	
	Applied Anatomy, Physiology, Pharmacology in Cardiac Care BCCT 112 L	CO1	To understand Coronary Anatc	3.0	3.0	3.0	1.0	1.0	1.0	1.0	3.0	2.0
		CO2	To enable students, differentia	3	2	3	2	2	1	2	3	2.3
		CO3	To enable students, a prelimin	3	2	1	1	2	1	2	2	1.8
		CO4	Students will be proficient in P	3	2	1	1	2	1	2	2	1.8
		CO5	Also recent advances in pharm	3	2	2	1	2	1	2	3	2.0
	Average			3.0	2.0	1.8	1.3	2.0	1.0	2.0	2.5	2.6
	Basic Electrocardiography BCCT 113 L	CO1	To develop understanding rega	3	2	2	1	1	1	3	3	2.0
		CO2	•Describe the proper hook-up	3	2	2	1	1	1	3	3	2.0
		CO3	Identify basic normal ECG wav	3	2	2	1	1	1	3	3	2.0
		CO4	•Enumerate the measures to	3.0	2.0	2.0	1.0	1.0	1.0	3.0	3.0	2.0
	Average			3	2	2	1	1	1	3	3	2
	Basic Echocardiography BCCT 114 L	CO1	To develop an understanding r	3	3	3	2	2	1	1	3	2.3
		CO2	•To train students to perform E	3	3	2	2	2	1	1	3	2.1
		CO3	•To make students aware of r	3	3	2	1	2	1	1	3	2
		CO4	•To understand the role of Ca	3	3	2	1	2	1	1	3	2
	Average			3	3	2.3	1.5	2	1	1	3	16.8
	Pursuit of inner self excellence GEC 001 L	CO1	Students will become self depe	3	2	2	1	2	3	2	2	2
		CO2	• Student’s ability to present t	3	2	2	1	2	2	2	2	2
		CO3	•Enhanced communication sk	3	2	2	1	2	2	2	2	2
		CO4	• Students will be able to expl	3	2	2	1	2	2	2	2	2
		CO5	• Students will observe significant reduction in stress level.	3	2	2	1	2	2	2	2	2
		CO6	• With the development of pe	3	2	2	1	2	2	2	2	2
	Average			3	2	2	1	2	2	2	2	2

	Organizational Behavior GEC 002 L	CO1	Describe and apply motivation	3	3	2	1	2	2	2	3	2
		CO2	• Explain the effect of persona	3	3	2	1	2	2	1	3	1.8
		CO3	• Explain types of teams and a	3	3	2	1	2	2	2	3	2
	Average			3	3	2	1	2	2	1.6	3	1.9
Semester 4	Development of Cardiovascular System:	CO1	This course will provide overal	3	2	3	3	2	1	1	3	2.2
		CO2	•To encourage student to app	3	2	3	3	2	1	1	3	2.2
	Average			3	2	3	3	2	1	1	3	2.2
	Cardiovascular Diseases pertaining to Cardiac Care	CO1	This course will cover common	3	3	3	3	2	1	1	3	2.37
		CO2	•Along with outline of clinical	3	3	3	3	2	1	1	3	2.37
	Average			3	3	3	3	2	1	1	3	2.37
	Medical I nstrumentttion Relevant to Cardiac Care Technology BCCT 118 L	CO1	The course is designed to make	3	3	3	3	2	1	1	3	2.37
		CO2	• The fundamental principles	3	3	3	3	2	1	1	3	2.37
		CO3	The course is designed to make	3	3	3	3	2	1	1	3	2.37
	Average			3	3	3	3	2	1	1	3	2.37
	Computers and Applications AEC 003 L	CO1	Discuss about health informati	3	2	2	1	2	1	1	3	1.8
		CO2	• Explain the function of Hosp	3	2	2	1	2	1	1	3	1.8
		CO3	• Analyze medical standards	3	2	2	1	2	1	1	3	1.8
	Average			3	2	2	1	2	1	1	3	1.8
	Biostatistics and Research Methodology AEC 004 L	CO1	To understand the importance	3	2	3	3	2	1	1	3	1.8
		CO2	• To learn in detail about samp	3	2	3	3	2	1	1	3	1.8
	Average			3	2	3	3	2	1	1	3	1.8
Semester 5	Advanced Electrocardiography BCCT 120 L	CO1	To develop an understanding r	3	3	3	3	2	1	1	3	1.8
		CO2	•To train students to perform	3	3	3	3	2	1	1	3	1.8
		CO3	•To make students aware of re	3	3	3	3	2	1	1	3	1.8
		CO4	•To understand the role of Ca	3	3	3	3	2	1	1	3	1.8
	Average			3	3	3	3	2	1	1	3	1.8
	Advanced Echocardiography BCCT 121 L	CO1	To develop an understanding r	3	3	3	3	1	1	1	3	2.2
		CO2	•To train students to perform	3	3	3	3	2	1	1	3	2.2
		CO3	•To make students aware of r	3	3	3	3	2	1	1	3	2.2
		CO4	•To understand the role of Car	3	3	2	3	2	1	1	3	2.2
	Average			3	3	2	3	2	1	1	3	2.2
	Invasive Cardiology BCCT 122 L	CO1	To enable students to not only	3	3	3	3	2	1	1	3	2.2
		Average		3	3	3	3	2	1	1	3	2.2
	Basics of Clinical Skill Learning CEC 005 L	CO1	After successful accomplishme	3	3	2	2	2	2	2	3	2.3
		CO2	•The students will learn about	3	3	2	2	2	2	2	3	2.3
	Average			3	3	2	2	2	2	2	3	2.3
	Hospital Operation Management CEC 006 L	CO1	Understand and apply resource	3	3	3	1	1	2	1	3	2.1
		CO2	•Communicate effectively and	3	3	3	1	1	2	1	3	2.1
		CO3	•Apply modern change manag	3	3	3	1	1	2	1	3	2.1
		CO4	•Analyze existing hospital serv	3	3	3	1	1	2	1	3	2.1
	Average			3	3	3	1	1	2	1	3	2.1
Semester 6	Cardiac Catheterization BCCT 124 L	CO1	The students will gain knowled	3	3	3	2	2	1	1	3	2.2
		CO2	•To enable students, understa	3	3	3	2	2	1	1	3	2.2
		CO3	•The occurrence and manager	3	3	3	2	2	1	1	3	2.2
	Average			3	3	3	2	2	1	1	3	2.2

	Pediatric Interventions BCCT 125 L	CO1	The students will gain knowled	3	3	3	2	3	2	2	3	2.8
		CO2	•The occurrence and manage	3	3	3	2	3	2	2	3	2.8
	Average			3	3	3	2	3	2	2	3	2.8

MAPPING AVERAGE																		
Programme - B.Sc Cardic Care Technology																		
Semester	Subject	PO1	P02	PO3	PO4	PO5	PO6	PO7	PO8	Average								
Semester 3	Applied Anatomy, Physiology, Pharmacology in Cardiac Care BCCT 112 L	3.0	2.0	1.8	1.3	2.0	1.0	2.0	2.5	2.6								
	Basic Electrocardiography BCCT 113 L	3	2	2	1	1	1	3	3	2								
	Basic Echocardiography BCCT 114 L	3	3	2.3	1.5	2	1	1	3	16.8								
	Pursuit of inner self excellence GEC 001 L	3	2	2	1	2	2	2	2	2								
	Organizational Behavior GEC 002 L	3	3	2	1	2	2	1.6	3	1.9								
Semester 4	Development of Cardiovascular System: Fetal and Neonatal BCCT 116 L	3	2	3	3	2	1	1	3	2.2								
	Cardiovascular Diseases pertaining to Cardiac Care Technology	3	3	3	3	2	1	1	3	2.37								
	Medical I nstrumenttion Relevant to Cardiac Care Technology BCCT 118 L	3	3	3	3	2	1	1	3	2.37								
	Computers and Applications AEC 003 L	3	2	2	1	2	1	1	3	1.8								
	Biostatistics and Research Methodology AEC 004 L	3	2	3	3	2	1	1	3	1.8								
Semester 5	Advanced Electrocardiography BCCT 120 L	3	3	3	3	2	1	1	3	1.8								
	Advanced Echocardiography BCCT 121 L	3	3	2	3	2	1	1	3	2								
	Invasive Cardiology BCCT 122 L	3	3	3	3	2	1	1	3	2								
	Basics of Clinical Skill Learning CEC 005 L	3	3	2	2	2	2	2	3	2								
	Hospital Operation Management CEC 006 L	3	3	3	1	1	2	1	3	2								

Semester 6	Cardiac Catheterization BCCT 124 L	3	3	3	2	3	2	2	3	3
	Pediatric Interventions BCCT 125 L	3	3	3	2	3	2	2	3	3

CO & PO Relationships (Mapping Strength)															
Programme - B.Sc Cardiac Care Technology															
Semester - Smester III, IV, V & VI															
				CO & PO Relations hips	Domain	Unit	Lecture		Lab		Clinical		Total		Strengtn Level of CO addressin g to PO
Semester	Course & Course code	CO	CO Detail	PO1-PO8	C.A.P	No	Hrs	%	Hrs	%	Hrs	%	Hrs	%	
	Applied Anatomy, Physiology, Pharmacology in Cardiac Care BCCT 112 L	CO1	To understand Coronary Anatomy	PO1, PO2	C,A	1,2	15	25	0	0	0	0	15	13%	1
		CO2	To enable students, differentiate between normal heart sounds and murmurs	PO1, PO3,PO8	C,A	3,	10	17%			0	0	10	8%	1
		CO3	To enable students, a preliminary understanding of the circulatory system from a physiological and functional perspective, as well as related terminologies.	PO1	C,A	1,2,4	15	25			0	0	15	13%	1
		CO4	Students will be proficient in Pharmacology with proficient knowledge about the different drugs / medicines to be given in various cardiovascular diseases, dose calculation and mode of administration. •	PO1	C,A	7,8,9	20	33			0	0	20	17%	2
		CO5	Also recent advances in pharmacology will play a key role in research aspect of the students.	PO1,PO8	C,A	0,	10	0			0	0	10	8%	1
							60	100%			0	0	60	100%	
		CO1	To develop understanding regarding Electrocardiography and its procedure.	PO1, PO2,PO3, P08	C,A,P	1,2,	20	44%	5	13%	5	13%	25	29%	2
		CO2	•Describe the proper hook- up procedure for a 12-Lead ECG	PO1,PO7, PO8	C,A,P	2	5	11%	5	13%	5	13%	15	18%	1

Semester 3	Basic Electrocardiography BCCT 113 L	CO3	Identify basic normal ECG waveform morphology and common interpretation.	PO1,PO7, PO8	C,A,P	4,5,6,7	20	44%	5	13%	5	13%	30	35%	2
		CO4	•Enumerate the measures to be taken before, after and during ECG procedure	PO1,PO7, PO8	C,A,P	0		0%	5	13%	5	13%	10	12%	1
							45	100%	20	50%	20	50%	85	100%	
	Basic Echocardiography BCCT 114 L	CO1	To develop an understanding regarding Echocardiography.	PO1, PO2,PO3, PO8,PO10	C,A,P	1,3,4,6	10	33%	7.5	13%	7.5	13%	17.5	19%	1
		CO2	To train students to perform Echocardiography examinations by explaining the position of transducers.	PO1,PO&, PO8	C,A,P	1,4	4	13%	7.5	13%	7.5	13%	11.5	13%	1
		CO3	•To make students aware of recent advances in Echocardiography.	PO1,PO7, PO8	C,A,P	8	3	10	7.5	13%	7.5	13%	18	20%	1
		CO4	•To understand the role of Cardiac Care technician while assisting the Cardiologist in performing the procedure	PO1,PO7, PO8	C,A,P	5,7,9,11,13	13	43	7.5	13%	7.5	13%	28	31%	2
							30	100%	30	50%	30	50%	90	100%	
	Pursuit of Inner Self Excellence (POIS)	CO1	Students will become self dependent, more decisive and develop intuitive ability for their study and career related matter.	PO1	C,A	1,2	8	18%		0	0	0	8	9%	1
		CO2	Student's ability to present their ideas will be developed.	PO1	C,A	2,3	7	16%		0	0	0	7	8%	1
		CO3	•Enhanced communication skills, public speaking & improved Presentation ability.	PO1	C,A	3,4	8	18%		0	0	0	8	9%	1
		CO4	• Students will be able to explore their inner potential and inner ability to become a successful researcher or technician & hence become more focused.	PO1	C,A	1,4	7	16%		0	0	0	7	8%	1

		CO5	• Students will observe significant reduction in stress level.	PO1	C,A	2,4	8	18%		0	0	0	8	9%	1
		CO6	• With the development of personal attributes like Empathy, Compassion, Service, Love & brotherhood, students will serve the society and industry in better way with teamwork and thus grow professionally.	PO1	C,A	1,3	7	16%		0	0	0	7	8%	1
							45	100%			0	0	45	100%	
	Organizational Behavior GEC 002 L	CO1	Describe and apply motivation theories to team and organizational scenarios in order achieve a team's or an organization's goals and objectives.	O1,PO2,PO	C,A	5	6	13%			0	0	6	13%	1
		CO2	• Explain the effect of personality, attitudes, perceptions and attributions on their own and other's behaviours in team and organizational settings.	O1,PO2,PO	C,A	4,6,7	19	42%			0	0	19	42%	2
		CO3	• Explain types of teams and apply team development, team effectiveness, and group decision making models and techniques. Analyse and apply leadership theories and better understand their own leadership style	O1,PO2,PO	C,A	2,7	8	18%			0	0	8	18%	1
							45	100%			0	0	45	100%	
	Development of Cardiovascular system	CO1	This course will provide overall information of the structural development of the cardiovascular system.	PO1,PO3, PO4,PO8,	C,A	2,3,4,5,6,7,	35	78%	0	0	0	0	35	78%	3

Semester 4	Cardiovascular system. Fetal and Nonetal BCCT 117 L	CO2	•To encourage student to apply this knowledge to understand developmental anomalies in Cardiovascular System.	PO1,PO3, PO4,PO8,	C,A	5,6,7,8	10	22%			0	0	10	22%	1
							45	100%			0	0	45	100%	
	Cardiovascular diseases pertaining to CCT BCCT 118 L	CO1	This course will cover common Cardiovascular Diseases, their related pathology and microbiology.	PO1 ,PO3,PO4, PO8	C,A	3,4,5,6,7,8,	25	56%	0	0	0	0	25	56%	3
		CO2	•Along with outline of clinical presentation and management of these conditions it also includes Medical and Surgical interventions.	PO1,PO3, PO4,PO8	C,A	3,4,5,6,7,8,	20	44%			0	0	20	44%	2
							45	100%					45	100%	
	Medical Instrumentation relevant to Cardiac Care BCCT 119 L	CO1	The course is designed to make the student acquire an adequate knowledge of the physiological systems of the human body and relate them to the parameters that have clinical importance.	PO1,PO2, PO3,PO4, PO8	C,A,P	1' -5	20	67%	10	17%	10	17%	30	33%	2
		CO2	• The fundamental principles of equipment that are actually in use at the present day are introduced.	O2,PO3,PO	C,A,P	2	5	17%	10	17%	10	17%	15	17%	1
		CO3	The course is designed to make	O2,PO3,PO	C,A,P	4, 5	5	17%	10	17%	10	17%	15	17%	1
							30	100%	30	50%	30	50%	90	100%	
	Computer and applications AEC 003 L	CO1	Discuss about health informatics and different IT applications in allied health care.	PO1,PO8	C,A	11,12	30	67%			0	0	30	29%	1
		CO2	• Explain the function of Hospital Information Systems	PO1,PO8	C,A	9	5	11%			0	0	5	5%	1
		CO3	• Analyze medical standards	PO1,PO8	C,A	10,12	10	22%			0	0	10	10%	1
							45	100%					45	100%	
		CO1	To understand the importance & Methodology for research	L,PO3,PO4,P	C,A	4,5	20	44%			0	0	20	19%	1

	Biostatistics and Research Methodology AEC 004 L	CO2	<ul style="list-style-type: none"> To learn in detail about sampling, probability and sampling distribution, significance tests correlation and regression, sample size determination, study design and multivariate analysis. 	L,PO3,PO4,P	C,A	6,7,8	25	55%			0	0	25	24%	1
							45	100%			0	0	45	100%	
Semester 5	Advanced Electrocardiography BCCT 121 L	CO1	To develop an understanding regarding Echocardiography.	PO1,PO2, PO3,PO4, PO8	C,A,P	1,2	8	27%	7.5	13%	7.5	13%	15.5	17%	1
		CO2	<ul style="list-style-type: none"> To train students to perform Electrocardiography examinations by explaining the position of leads. 	PO1,PO2, PO3,PO4, PO8	C,A,P	2,3	8	27%	7.5	13%	7.5	13%	15.5	17%	1
		CO3	<ul style="list-style-type: none"> To make students aware of recent advances in Electrocardiography. 	PO1,PO2, PO3,PO4, PO8	C,A,P	3,4	8	27%	7.5	13%	7.5	13%	15.5	17%	1
		CO4	<ul style="list-style-type: none"> To understand the role of Cardiac Care technician while assisting the Cardiologist as well as when performing individually. 	PO1,PO2, PO3,PO4, PO8	C,A,P	5	6	20%	7.5	13%	7.5	13%	13.5	15%	1
							30	100%	30	50%	30	50%	90	100%	
	Advanced Echocardiography BCCT 121 L	CO1	To develop an understanding regarding Echocardiography.	PO1,PO2, PO3,PO4, PO8	C,A,P	1,2	7	20%	7.5	13%	7.5	13%	19	21%	1
		CO2	<ul style="list-style-type: none"> To train students to perform Echocardiography examinations by explaining the position of transducers. 	PO1,PO2, PO3,PO4, PO8	C,A,P	2,3	8	20%	7.5	13%	7.5	13%	18	20%	1
		CO3	<ul style="list-style-type: none"> To make students aware of recent advances in Echocardiography. 	PO1,PO2, PO3,PO4, PO8	C,A,P	3,4	7	20%	7.5	13%	7.5	13%	19	21%	1
		CO4	<ul style="list-style-type: none"> To understand the role of Cardiac Care technician while assisting the Cardiologist as well as when performing individually. 	PO1,PO2, PO3,PO4, PO8	C,A,P	4,5	8	20%	7.5	13%	7.5	13%	18	20%	1

							30	100%	30	50%	30	50%	90	100%	
	Invasive Cardiology BCCT 122 L	CO1	To enable students to not only be a helping hand to those just starting out in the specialty but also to serve as a reference for those who have been working in Invasive field for some time	PO1,PO2, PO3,PO4, PO8	C,A	1-10.	8	18%					8	18%	1
								45	100%					45	100%
	Basics of Clinical Skill Learning CEC 005 L	CO1	After successful accomplishment of the course, the students would be able to Measure Vital Signs, do basic physical Examination of the patients, NG tube basics, Administration of Medicines..	O1,PO2,PO	C,A	1,2,3	23	51%					23	51%	3
		CO2	•The students will learn about Asepsis, and the Cleanliness related to asepsis and on mobility of the patients	O1,PO2,PO	C,A	4,5,6	22	49%					22	48%	2
							45	100%					45	100%	
	Hospital Operation Management CEC 006 L	CO1	Understand and apply resource management concepts (personnel, finance, and material resources) and the processes and strategies needed in specific hospital sectors.	L,PO2,PO3,P	C,A	1,2	11	24%			0	0	11	10%	1
		CO2	•Communicate effectively and develop their leadership and teambuilding abilities	L,PO2,PO3,P	C,A	2,3	11	24%			0	0	11	10%	1
		CO3	•Apply modern change management and innovation management concepts to optimize structures	L,PO2,PO3,P	C,A	4,5	11	24%			0	0	11	10%	1

Semester 6		CO4	•Analyze existing hospital service policies and enhance their alignment within the local and national context	L,PO2,PO3,P	C,A	1,5	12	27%			0	0	12	11%	1
							45	100%			0	0	45	43%	
	Cardiac Catheterization BCCT 124 L	CO1	The students will gain knowledge about chances of a successful procedure.	L,PO2,PO3,P	C,A,P	1,2	10	33%	10	17%	10	17%	30	33%	2
		CO2	•To enable students, understand about benefit/risk to the patient if the procedure is successful/unsuccessful	L,PO2,PO3,P	C,A,P	2,3	10	33%	10	17%	10	17%	30	33%	2
		CO3	•The occurrence and management of various complications.	L,PO2,PO3,P	C,A,P	3,4	10	33%	10	17%	10	17%	30	33%	2
							30	100%	30	50%	30	50%	90	100%	
	Pediatric interventions BCCT 125 L	CO1	The students will gain knowledge through proper assessment and integration of the history, physical examination, electrocardiogram, and chest X-ray, the type of problem can be diagnosed correctly in many patients, and the severity and hemodynamics correctly estimated. •The occurrence and management of various complications in Pediatric cardiology interventions S	O2,PO3,PO	C,A,P	1,2,3	15	50%	15	25%	15	25%	45	50%	2
		CO2	•The occurrence and management of various complications in Pediatric cardiology interventions	O2,PO3,PO	C,A,P	4,5,6	15	50%	15	25%	15	25%	45	50%	2
							30	100%	30	50%	30	50%	90	100	

CO PO MAPPING (Matrix)												
Programe - B.Sc Dialysis Care Technology												
Semester - Smester III, IV, V & VI												
PO1 – Knowledge & Skill Development- An ability to apply knowledge of healthcare technology (including clinical subjects, investigations/ Procedures, handling instruments)												
PO2 – Critical Thinking – To apply professional judgment and rational thinking in decision-making												
PO3 - Problem solving – Correlation of professional knowledge applied to current clinical or healthcare practices.												
PO4 -Professional ethics – To adopt and apply code of ethics prescribed by professional bodies in professional and social context. Maintain appropriate boundaries with patients and care givers and maintain confidentiality												
PO5 – Communication skills – To communicate effectively with the patients, care givers and other healthcare professional for addressing patient related issues and to deliver and information												
PO6 – Individual / Team work - ability to function on multi-disciplinary teams												
PO 7- Holistic development: Development of intellectual mental, Physical, Emotional & Social abilities, so as to be capable of facing the demands & challenges of every day life.												
PO8 – Lifelong learning - To develop continuous learning attitude in context of research, advances in clinical practices and to inculcate professionalism and evidence based practices												
PO Mapping same with correlation level 3,2,1 The notation of 1 - low, 2 - moderate , 3 - high												
				Knowledge & Skill Development	Critical Thinking	Problem solving	Professional ethics	Communication skills	Individual / Team work	Holistic development	Lifelong learning	Average
Semester	Course / Course Code	Course Outcome	Details	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	
	Introduction To Dialysis MDT 112 L	CO1	Practice personal safety & standard precautions.	3.0	3.0	3.0	1.0	1.0	1.0	1.0	2.0	1.9
		CO2	Handling complications during dialysis procedures.	3.0	3.0	3.0	1.0	1.0	1.0	1.0	2.0	1.9
		CO3	Understand Infectious diseases, mode of transmission, prevention & care of the patient in a Dialysis Unit.	3.0	3.0	3.0	1.0	1.0	1.0	1.0	2.0	1.9
	Average			3.0	3.0	3.0	1.0	1.0	1.0	1.0	2.0	1.9
	Fundamentals of Dialysis BMDT 113 L	CO1	Practice personal safety & standard precautions.	3.0	3.0	3.0	1.0	1.0	1.0	1.0	2.0	1.9
		CO2	Handling complications during dialysis procedures.	3.0	3.0	3.0	1.0	1.0	1.0	1.0	2.0	1.9
		CO3	Understand Infectious diseases, mode of transmission, prevention & care of the patient in a Dialysis Unit.	3.0	3.0	3.0	1.0	1.0	1.0	1.0	2.0	1.9
	Average			3.0	3.0	3.0	1.0	0.0	0.0	1.0	3.0	1.8
	Pharmacology in Dialysis BMDT	CO1	Understand the basic concepts of pharmacology	3.0	3.0	3.0	2.0	3.0	2.0	2.0	3.0	2.6

	Organizational Behavior GEC 002 L	CO1	Describe and apply motivation theories to team and organizational scenarios in order achieve a team's or an organization's goals and objectives	1.0	2.0	1.0	1.0	1.0	3.0	1.0	3.0	1.6
		CO2	Explain the effect of personality, attitudes, perceptions and attributions on their own and other's behaviors in team and organizational settings.	1.0	2.0	2.0	1.0	3.0	3.0	1.0	3.0	2.0
		CO3	Explain types of teams and apply team development, team effectiveness, and group decision making models and techniques. Analyze and apply leadership theories and better understand their own leadership style.	1.0	2.0	2.0	1.0	2.0	3.0	1.0	3.0	1.9
	Average			2.0	2.0	1.7	1.0	2.0	3.0	1.0	3.0	1.8
Semesterv IV	Concept of Renal Disease & Disorders BMDT 116 L	CO1	To develop understanding regarding different disorder and its management.	3.0	3.0	3.0	3.0	2.0	3.0	3.0	3.0	2.9
		CO2	To develop knowledge in childhood anomalies' and it's significance.	3.0	3.0	3.0	3.0	2.0	3.0	3.0	3.0	2.9
	Average			3.0	3.0	0.0	0.0	2.0	0.0	0.0	1.0	1.1
	Nutrition in Dialysis BMDT 117 L	CO1	To describe basic nutrient and their role in growth, development, health maintained and restoration.	3.0	3.0	3.0	3.0	2.0	3.0	3.0	3.0	2.9
		CO2	To identify and interpret appropriate dietary plan for dialysis patient.	3.0	3.0	3.0	3.0	2.0	3.0	3.0	3.0	2.9
	Average			3.0	3.0	3.0	3.0	2.0	3.0	3.0	3.0	2.9
	Computers and	CO1	Discuss about health informatics and different IT applications in allied health care.	2.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.8

	Computers and Applications AEC 003 L	CO2	Explain the function of Hospital Information Systems Analyze medical standards	2.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.8
		CO3	Analyze medical standards	2.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	
	Average			2.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.8
	Biostatistics and Research Methodology AEC 004 L	CO1	To understand the importance & Methodology for research	2.0	2.0	1.0	1.0	1.0	0.0	0.0	2.0	1.1
		CO2	To learn in detail about sampling, probability and sampling distribution, significance tests correlation and regression, sample size determination, study design and multivariate analysis.	2.0	2.0	1.0	1.0	1.0	0.0	0.0	2.0	1.1
	Average			2.0	2.0	1.0	1.0	1.0	0.0	0.0	2.0	1.1
	Applied Dialysis Technology – I BMDT 120 L	CO1	Know the History Describes the anatomy and Physiology Performs Physiological principles of Dialysis Demonstrated Procedures as Venepuncture, Cannulisation and maintenance of Sterilization of Equipment's and Dialysis Unit Demonstrate maintenance of Records and Reports	3.0	3.0	3.0	3.0	1.0	0.0	1.0	3.0	2.1
		CO2		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
		CO3		3.0	3.0	3.0	3.0	1.0	0.0	1.0	3.0	2.1
		CO4		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
		CO5		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
	Average			3.0	3.0	3.0	3.0	2.0	1.5	2.0	3.0	2.6
	Advance Dialysis Technology – I BMDT 121 L	CO1	Practice and perform independently the water maintenance for the Hemodialysis room	3.0	3.0	3.0	3.0	3.0	3.0	2.0	3.0	2.9
		CO2	•Independently maintain the Hemodialysis machine with respect to disinfection and priming	3.0	3.0	3.0	3.0	3.0	3.0	2.0	3.0	2.9
	Average			3.0	3.0	3.0	3.0	3.0	3.0	2.0	3.0	2.9

Semester V	Basics of Clinical Skill Learning CEC 005 L	CO1	After successful accomplishment of the course, the students would be able to Measure Vital Signs, do basic physical Examination of the patients, NG tube basics, Administration of Medicines	3.0	3.0	3.0	3.0	2.0	3.0	3.0	3.0	2.9
		CO2	The students will learn about Asepsis, and the Cleanliness related to asepsis and on mobility of the patients	3.0	3.0	3.0	3.0	2.0	3.0	3.0	3.0	2.9
		Average		3.0	3.0	3.0	3.0	2.0	3.0	3.0	3.0	2.9
	Hospital Operation Management CEC 006 L	CO1	Understand and apply resource management concepts (personnel, finance, and material resources) and the processes and strategies needed in specific hospital sectors.	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
		CO2	Communicate effectively and develop their leadership and teambuilding abilities	2.0	2.0	2.0	2.0	3.0	1.0	2.0	2.0	2.0
		CO3	Apply modern change management and innovation management concepts to optimize structures	2.0	2.0	2.0	2.0	2.0	1.0	2.0	2.0	1.9
		CO4	Analyze existing hospital service policies and enhance their alignment within the local and national context	2.0	2.0	2.0	2.0	1.0	1.0	2.0	2.0	1.8
		Average		2.0	2.0	2.0	2.0	2.0	1.3	2.0	2.0	1.9
	Applied Dialysis Technology II BMDT 123 L	CO1	Train patients in performing peritoneal dialysis, and personal care.	3.0	3.0	3.0	3.0	2.0	3.0	2.0	2.0	2.6
		CO2	Practice personal safety & standard precautions	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
		CO3	Handling complications during dialysis procedures	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
		CO4	Maintain quality and safety	3.0	3.0	3.0	3.0	2.0	3.0	2.0	2.0	2.6
		Average		3.0	3.0	3.0	3.0	2.7	3.0	2.7	2.7	2.9

Semester VI	Advance Dialysis Technology II BMDT 124 L	CO1	Demonstrate Knowledge about Advancements in Renal Dialysis and in renal therapies	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
		CO2	Demonstrate peritoneal dialysis, and its self care	3.0	3.0	3.0	3.0	2.0	3.0	3.0	2.0	2.8
		CO3	Involves family centered approach while providing patient care	3.0	3.0	3.0	3.0	2.0	3.0	3.0	2.0	2.8
		CO4	Handling complications during dialysis procedures.	3.0	3.0	3.0	3.0	2.0	3.0	3.0	2.0	2.8
	Average			3.0	3.0	3.0	3.0	2.3	3.0	3.0	2.3	2.8

MAPPING AVERAGE										
Program - B.Sc Dialysis Care Technology										
Semester	Subject	PO1	P02	PO3	PO4	PO5	PO6	PO7	PO8	Average
Semester 3	Introduction To Dialysis	3.0	3.0	3.0	1.0	1.0	1.0	1.0	2.0	1.9
	Fundamentals of Dialysis	3.0	3.0	3.0	1.0	0.0	0.0	1.0	3.0	1.8
	Pharmacology in Dialysis	3.0	3.0	3.0	2.0	3.0	2.0	2.0	3.0	2.0
	Pursuit of Inner Self Excellence (POIS)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
	Organizational Behavior	2.0	2.0	1.7	1.0	2.0	3.0	1.0	3.0	1.8
Semester 4	Concept of Renal Disease & Disorders	3.0	3.0	0.0	0.0	2.0	0.0	0.0	1.0	1.1
	Nutrition in Dialysis	3.0	3.0	3.0	3.0	2.0	3.0	3.0	3.0	2.9
	Computer and Applications	2.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0
	Biostatistics and Research Methodology	2.0	2.0	1.0	1.0	1.0	0.0	0.0	2.0	1.1
	Applied Dialysis Technology – I	3.0	3.0	3.0	3.0	0.5	0.0	0.0	2.0	1.6
Semester 5	Advance Dialysis Technology – I	3.0	3.0	3.0	3.0	3.0	3.0	2.0	3.0	2.9
	Basics of Clinical Skills Learning	3.0	3.0	3.0	3.0	2.0	3.0	3.0	3.0	2.2

Semester III	Pursuit of Inner Self Excellence (POIS) GEC 001 L	CO3	Enhanced communication skills, public speaking & improved Presentation ability.	1,5,	C.A								0	0	
		CO4	Students will be able to explore their inner potential and inner ability to become a successful researcher or technician & hence become more focused.	1,5	A								0	0	
		CO5	Students will observe significant reduction in stress level.	7	A								0	0	
		CO6	With the development of personal attributes like Empathy, Compassion, Service, Love & brotherhood, students will serve the society and industry in better way with teamwork and thus grow professionally.	7	C.A								0	0	
		Average											0	0	
	Organizational Behavior GEC 002 L	CO1	Describe and apply motivation theories to team and organizational scenarios in order achieve a team's or an organization's goals and objectives.	4,6	A	1,5	12	27	0	0	0	0	12	20	1
		CO2	Explain the effect of personality, attitudes, perceptions and attributions on their own and other's behaviors in team and organizational settings.	4	C.A	2,3,4	20	44	0	0	0	0	20	33	2
		CO3	Explain types of teams and apply team development, team effectiveness, and group decision making models and techniques.	6	C.A	6,7	13	29	0	0	0	0	13	22	1
		Average					45	100	0	0	0	0	45	75	
	Concept of Renal Disease &	CO1	To develop understanding regarding	1,2,3,4,5	CAP	1,2,3,4,5	30	50	7	47	7	47	44	49	3
		CO2	To develop knowledge in child	6,7,8	CAP	6,7,8,9	30	50	8	53	8	53	46	51	
	Average						60	100	15	50	15	50	90	100	

Semesterv IV	Nutrition in Dialysis BMDT 117 L	CO1	To describe basic nutrient and their role in growth, development, health maintained and restoration.	1,2,3,5,6	C	1,2,3	25	56	0	0	0	0	25	56	3
		CO2	To identify and interpret appropriate dietary plan for dialysis patient.	7,8,9	C	4,5,6	20	44	0	0	0	0	20	44	
		Average					45	100	0	0	0	0	45	100	
	Computers and Applications AEC 003 L	CO1	Discuss about health informatics and different IT applications in allied health care.	1,8	C	1,2,3,4,5,6,7,8	31	69	0	0	0	0	31	52	3
		CO2	Explain the function of Hospital Information Systems Analyze medical standards	4,6	C	9,10,11,12	14	31	0	0	0	0	14	23	1
		Average					45	100	0	0	0	0	45	75	
	Biostatistics and Research Methodology AEC 004 L	CO1	To understand the importance & Methodology for research	1,4,8	C	1,2,3,4	20	44	0	0	0	0	20	33	2
		CO2	To learn in detail about sampling, probability and sampling distribution, significance tests correlation and regression, sample size determination, study design and multivariate analysis.	1	C	5,6,7,8,9	25	56	0	0	0	0	25	42	2
		Average					45	100	0	0	0	0	45	75	
	Applied Dialysis Technology – I BMDT 120 L	CO1	Know the History	1,2,6,8	C.A.P	1	10	17	6	10	6	10	22	18	3
		CO2	Describes the anatomy and Ph	1,2,3,5,6	C.A.P	2	8	13	6	10	6	10	20	17	3
		CO3	Performs Physiological principl	1,3,5,7	CAP	3	8	13	6	10	6	10	20	17	
		CO4	Demonstrated Procedures as Venepuncture, Cannulisation and maintenance of Sterilization of Equipment's and Dialysis Unit	2,4,6,8	CAP	4,5	26	43	6	10	6	10	38	32	
		CO5	Demonstrate maintenance of F	1,2,3,5,8	CAP	6,7	8	13	6	10	6	10	20	17	
		Average					60	100	30	50	30	50	120	100	
	Advance Dialysis Technology – I	CO1	Practice and perform independently the water maintenance for the Hemodialysis room	1,2,3,5,6	C.A.P	1,2,3	32	53	15	25	15	25	62	52	3

Semester V	Technology – I BMDT 121 L	CO2	Independently maintain the Hemodialysis machine with respect to disinfection and priming	7,8	CAP	4,5,6	28	47	15	25	15	25	58	48	
	Average						60	100	30	50	30	50	120	100	
	Basics of Clinical Skill Learning CEC 005 L	CO1	After successful accomplishment of the course, the students would be able to Measure Vital Signs, do basic physical Examination of the patients, NG tube basics, Administration of Medicines	1,3,5,6,8	C.A.P	1,2,3,4		78	0	0	0	0		0	3
		CO2	The students will learn about Asepsis, and the Cleanliness related to asepsis and on mobility of the patients	1	C.P	5,6	10	22	0	0	0	0	10	17	1
	Average						45	100	0	0	0	0	45	75	
	Hospital Operation Management CEC 006 L	CO1	Understand and apply resource management concepts (personnel, finance, and material resources) and the processes and strategies needed in specific hospital sectors.	4,6	C.P	2	10	22	0	0	0	0	10	17	1
		CO2	Communicate effectively and develop their leadership and teambuilding abilities	6	C.P	1	5	11	0	0	0	0	5	8	1
		CO3	Apply modern change management and innovation management concepts to optimize structures	4	C	4,5	20	44	0	0	0	0	20	33	2
		CO4	Analyze existing hospital service policies and enhance their alignment within the local and national context	4,6	C	3	10	22	0	0	0	0	10	17	1
	Average						45	100	0	0	0	0	45	75	
	Applied Dialysis Technology II BMDT 123 L	CO1	Train patients in performing pe	1,2,3,5,6,7,8	C.A.P	1,2	16	27	7	12	8	13	31	26	2
		CO2	Practice personal safety & stan	1,2,3,5,6	C.A.P	3,4	14	23	8	13	7	12	29	24	3
		CO3	Handling complications during	2,3,5,6	C.A.P	5,6	20	33	7	12	8	13	35	29	3
		CO4	Maintain quality and safety	2,4,6,8	C.A.P	7	10	17	8	13	7	12	25	21	
	Average						60	100	30	50	30	50	120	100	

Semester VI	Advance Dialysis Technology II BMDT 124 L	CO1	Demonstrate Knowledge about Advancements in Renal Dialysis and in renal therapies	1,3,5,6	C.A.P	1	10	17	7	12	8	13	25	21	2
		CO2	Demonstrate peritoneal dialysis, and its self care	2,3,4,5,7	C.A.P	2	15	25	8	13	7	12	30	25	1
		CO3	Involves family centered approach while providing patient care	4,7	C.A.P	3	10	17	7	12	8	13	25	21	1
		CO4	Handling complications during dialysis procedures.	7,8	C.A.P	4,5	25	42	8	13	7	12	40	33	
	Average						60	100	30	50	30	50	120	100	