Total Credits = 21

SEMESTER 1st		Contact Hrs.			Marks			Credits
Subject Code	**Subject Name**	**L**	**T**	**P**	**Int.**	**Ext.**	**Total**	
BRCTS1-101	Human Anatomy & Physiology-I	3	1	0	40	60	100	4
BRCTS1-102	Applied Biochemistry	3	1	0	40	60	100	4
BRCTS1-103	Quality Management, Patient Safety & Disaster Management	1	1	0	40	60	100	2
BRCTS1-104	Drug Abuse: Problem, Management and Prevention	3	0	0	40	60	100	3
BRCTS1-105	Communication Skills	2	0	0	40	60	100	2
BRCTS1-106	Human Anatomy & Physiology Laboratory	0	0	4	60	40	100	2
BRCTS1-107	Applied Biochemistry Laboratory	0	0	4	60	40	100	2
BRCTS1-108	Communication Skills Laboratory	0	0	4	60	40	100	2
	Total	**-**	**-**	**-**	**380**	**420**	**800**	**21**

Total Credits = 23

SEMESTER 2nd		Contact Hrs.			Marks			Credits
Subject Code	**Subject Name**	**L**	**T**	**P**	**Int.**	**Ext.**	**Total**	
BRCTS1-201	Human Anatomy & Physiology- II	3	1	0	40	60	100	4
BRCTS1-202	Microbiology	3	1	0	40	60	100	4
BRCTS1-203	Pharmacology	3	1	0	40	60	100	4
BRCTS1-204	Computer Application and Information Sciences	2	0	0	40	60	100	2
BRCTS1-205	Environmental Studies	2	0	0	40	60	100	2
BRCTS1-206	Human Anatomy & Physiology- II Laboratory	0	0	4	60	40	100	2
BRCTS1-207	Microbiology Laboratory	0	0	4	60	40	100	2
BRCTS1-208	Pharmacology Laboratory	0	0	4	60	40	100	2
BRCTS1-209	Computer Application and Information Sciences Laboratory	0	0	2	60	40	100	1
	Total	**-**	**-**	**-**	**440**	**460**	**900**	**23**

Total Credits = 24

SEMESTER 3rd		Contact Hrs.			Marks			Credits
Subject Code	**Subject Name**	**L**	**T**	**P**	**Int.**	**Ext.**	**Total**	
BRCTS1-301	Applied Pathology	3	1	0	40	60	100	4
BRCTS1-302	Applied Microbiology	3	1	0	40	60	100	4
BRCTS1-303	Introduction to Respiratory Care Technology	3	1	0	40	60	100	4
BRCTS1-304	Basic Principles of Hospital Management	3	1	0	40	60	100	4
BRCTS1-305	Environment Science and Health	2	0	0	40	60	100	2
BRCTS1-306	Applied Pathology Laboratory	0	0	4	60	40	100	2
BRCTS1-307	Applied Microbiology Laboratory	0	0	4	60	40	100	2
BRCTS1-308	Introduction to Respiratory Care Technology Laboratory	0	0	4	60	40	100	2
	Total	**-**	**-**	**-**	**380**	**420**	**800**	**24**

Total Credits = 24

SEMESTER 4th		Contact Hrs.			Marks			Credits
Subject Code	**Subject Name**	**L**	**T**	**P**	**Int.**	**Ext.**	**Total**	
BRCTS1-401	Patient care and Basic Nursing	3	1	0	40	60	100	4
BRCTS1-402	Basic Respiratory Care Technology	3	1	0	40	60	100	4
BRCTS1-403	Basics of Medical Disorders	3	1	0	40	60	100	4
BRCTS1-404	Basic Principles of Hospital Management	2	0	0	40	60	100	2
BRCTS1-405	Biostatistics and Research Methodology	2	0	0	40	60	100	2
BRCTS1-406	Constitution of India	2	0	0	40	60	100	2
BRCTS1-407	Patient care and Basic Nursing Laboratory	0	0	4	60	40	100	2
BRCTS1-408	Basic Respiratory Care Technology Laboratory	0	0	4	60	40	100	2
BRCTS1-409	Basics of Medical Disorders Laboratory	0	0	4	60	40	100	2
	Total	**-**	**-**	**-**	**420**	**480**	**900**	**24**

Total Credits = 26

SEMESTER 5th		Contact Hrs.			Marks			Credits
Subject Code	**Subject Name**	**L**	**T**	**P**	**Int.**	**Ext.**	**Total**	
BRCTS1-501	Basic Respiratory Therapeutics and Monitoring	3	1	0	40	60	100	4
BRCTS1-502	Chest Physical Therapy and Pulmonary Rehabilitation	3	1	0	40	60	100	4
BRCTS1-503	Basics of Medical Disorders	3	1	0	40	60	100	4
BRCTS1-504	Clinical Respiratory Care Technology	3	1	0	40	60	100	4
BRCTS1-505	Pulmonary Function Testing	2	0	0	40	60	100	2
BRCTS1-506	Medical Ethics	2	0	0	40	60	100	2
BRCTS1-507	Basic Respiratory Therapeutics and Monitoring Laboratory	0	0	4	60	40	100	2
BRCTS1-508	Chest Physical Therapy and Pulmonary Rehabilitation Laboratory	0	0	4	60	40	100	2
BRCTS1-509	Basics of Medical Disorders Laboratory	0	0	4	60	40	100	2
	Total	**-**	**-**	**-**	**420**	**480**	**900**	**26**

Total Credits = 22

SEMESTER 6th		Contact Hrs.			Marks			Credits
Subject Code	**Subject Name**	**L**	**T**	**P**	**Int.**	**Ext.**	**Total**	
BRCTS1-601	Applied Respiratory Care Technology	3	1	0	40	60	100	4
BRCTS1-602	Advanced Respiratory Care Technology	3	1	0	40	60	100	4
BRCTS1-603	Basic Intensive Care	3	1	0	40	60	100	4
BRCTS1-604	Polysomnography	2	0	0	40	60	100	2
BRCTS1-605	Echocardiography	2	0	0	40	60	100	2
BRCTS1-606	Applied Respiratory Care Technology Laboratory	0	0	4	60	40	100	2
BRCTS1-607	Advanced Respiratory Care Technology Laboratory	0	0	4	60	40	100	2
BRCTS1-608	Basic Intensive Care Laboratory	0	0	4	60	40	100	2
	Total	**-**	**-**	**-**	**380**	**420**	**800**	**22**

Total Credits = 20

SEMESTER 7th		Contact Hrs.			Marks			Credits
Subject Code	**Subject Name**	**L**	**T**	**P**	**Int.**	**Ext.**	**Total**	
BRCTS1-701	Hospital Training & Report	0	0	40	80	120	200	20
	Total	**0**	**0**	**40**	**80**	**120**	**200**	**20**

The candidates will be supervise by the concern faculty & and the project report will be submitted following competitions. The Viva-Voce examination shall be conducted by external expert.

Total Credits = 20

SEMESTER 8th		Contact Hrs.			Marks			Credits
Subject Code	**Subject Name**	**L**	**T**	**P**	**Int.**	**Ext.**	**Total**	
BRCTS1-801	Internship and Dissertation	0	0	40	80	120	200	20
	Total	**0**	**0**	**40**	**80**	**120**	**200**	**20**

The candidate shall undergo internship in relevant departments. The internship report shall be submitted at the end and Viva-Voce examination shall be conducted by external expert.

Overall Marks / Credits

Semester	Marks	Credits
1st	800	21
2nd	900	23
3rd	800	24
4th	900	24
5th	900	26
6th	800	22
7th	200	20
8th	200	20
Total	**5500**	**180**

HUMAN ANATOMY & PHYSIOLOGY- I

Subject Code:**BRCTS1-101** | **L T P C** | **60 Hours**
3 1 0 4

COURSE OBJECTIVES:

- The objective of this course is to develop a basic. Understanding about the structure and functions of the human body and body organs.

COURSE SYLLABUS

UNIT I **12 Hours**

- Introduction to human body: Definition and scope of anatomy and physiology, levels of structural organization and body systems, basic life processes, homeostasis, basic anatomical terminology.

UNIT II **12 Hours**

- Cellular level of organization: Structure and functions of cell, transport across cell membrane, cell division, cell junctions. General principles of cell communication, intracellular signaling pathway activation by extracellular signal molecule, Forms of intracellular signaling: a) Contact-dependent b) Paracrine c) Synaptic d) Endocrine
- Tissue level of organization: Classification of tissues, structure, location and functions of epithelial, muscular and nervous and connective tissues.

UNIT III **12 Hours**

- Integumentary system: Structure and functions of skin
- Skeletal system: Divisions of skeletal system, types of bone, salient features and functions of bones of axial and appendicular skeletal system. Organization of skeletal muscle, physiology of muscle contraction, neuromuscular junction.
- Joints: Structural and functional classification, types of joints movements and its articulation.

UNIT IV **12 Hours**

- Nervous system: Organization of nervous system, neuron, neuroglia, classification and properties of nerve fiber, electrophysiology, action potential, nerve impulse, receptors, synapse, neurotransmitters.
- Central nervous system: Meninges, ventricles of brain and cerebrospinal fluid, structure and functions of brain (cerebrum, brain stem and cerebellum), spinal cord (gross structure, functions of afferent and efferent nerve tracts, reflex activity)

- Peripheral nervous system: Classification of peripheral nervous system: Structure and functions of sympathetic and parasympathetic nervous system. Origin and functions of spinal and cranial nerves.

UNIT V **12 Hours**

- Special senses: Structure and functions of eye, ear, nose and tongue and their disorders.
- Endocrine system : Classification of hormones, mechanism of hormone action, structure and functions of pituitary gland, thyroid gland, parathyroid gland, adrenal gland, pancreas, pineal gland, thymus and their disorders**.**

Suggestive Readings

Text Books:

- Anatomy and Physiology in Health and Illness by Kathleen J.W. Wilson Churchill Livingstone, New York
- Text book of Medical Physiology by Arthur C, Guytonand John.E Hall. Miamisburg, OH, U.S.A

Reference Books:

- Essentials of Medical Physiology by K. Sembulingam and P. Sembulingam, Jaypee brother's medical publishers, New Delhi
- Principles of Anatomy and Physiology by Tortora Grabowsk, Palmetto, GA, U.S.A

HUMAN ANATOMY & PHYSIOLOGY LABORATORY -I

Subject Code:**BRCTS1-106** | **L T P C** | **4 Hours /week**
0 0 4 2

COURSE OBJECTIVES:

- This course emphasizes the importance of identification of the human body organs.

COURSE SYLLABUS

- **LIST OF PRACTICALS**

1) Identification of Various Organs in the human Body:
    a) Liver
    b) Heart
    c) Kidney
    d) Nephron
    e) Lungs
    f) Neuron
    g) Ovary
2) Demonstration of various parts of body
3) Estimation of blood pressure, cardiac cycle and respiration.
4) Identification of blood cells and different counts.
5) The compound Microscope.
6) Hemoglobin percentage and color index.
7) Blood groups
8) Artificial respiration and C.P.R.
9) Pulse rate, Heart rate and measurement of Blood Pressure.
10) Demonstrate the skills of Assessment of Breath Sounds, Respiratory Rate and Pulmonary Function Tests.

Suggestive Readings
Text Books:

- Basic Anatomy and Physiology by N Murgesh, Sathya.
- Anatomy and Physiology by Anne Waugh and Kathleen JW Wilson; Churchill LivingStone; London, Ross and Wilson.

Reference Books:

- Anatomy and Physiology by Pears, JP Brothers
- Anatomy and Physiology by Sears, ELBS

APPLIED BIOCHEMISTRY

Subject Code:BRCTS1-102 | **L T P C** | **60 Hours**
3 1 0 4

COURSE OBJECTIVES:

- In this course the student will be provided comprehensive knowledge of the Human Biochemistry and metabolism to give a basis for understanding the clinical correlation & diagnosis of biochemical disorders.

COURSE SYLLABUS

Unit I **12 Hours**

Chemistry of Cell & Chemistry of Carbohydrates, Proteins, Lipids &Nucleotides-

- Cell- Structure & Function of Cell Membrane, Subcellular Organelles and their Functions.
- Carbohydrates- Definition, Classification & Biological importance of carbohydrates, Derivatives of Monosaccharides.
- Proteins- Definition & Classification of amino acids & Proteins, Biologically important peptides Plasma proteins, Immunoglobulins.
- Lipids- Definition, Classification & Biological importance and Functions of Lipids. Structure and functions of Cholesterol, types and functions of Lipoproteins.
- Nucleotides- Structure and Functions of DNA & RNA. Biologically important nucleotides.

Unit II **12 Hours**

Enzymes & Acid base balance

- Enzymes- Definition and Classification. Factors affecting enzyme activity. Coenzymes and Cofactors. Enzyme inhibition & Regulation of enzyme activity Acid Base balance- Acids, Bases & Body Buffers, Regulation of pH, Acid base disorders.

Unit III **12 Hours**

Vitamins & Minerals

- Vitamins-Classification, Sources, RDA, Functions(in brief), deficiency manifestations and hypervitaminosis.
- Minerals- Classification, Sources, RDA, Functions (in Brief), deficiency manifestations of the following: calcium, phosphorous, iron, copper, iodine, zinc, fluoride, magnesium, selenium, sodium, potassium and chloride.

Unit IV **12 Hours**

Nutrition, Blood chemistry & Urine Chemistry

- Nutrition- Nutrients, Calorific value of food, BMR, SDA, respiratory quotient and its applications, Balanced diet based on age, sex and activity, biological value of proteins, nitrogen balance, Protein energy malnutrition, Total parenteral nutrition, dietary fibers.
- Blood chemistry- Biochemical components & their reference ranges in normal & diseased states.

- Urine chemistry- Biochemical components & their reference ranges in normal & diseased states.

Unit V **12 Hours**

Clinical Biochemistry

- Specimen Collection- Blood,Urine and Body fluids. Preanalytical, analytical and postanalytical errors. Clinical Biochemistry- Parameters to diagnose Diabetes & Cardiovascular diseases. Diagnostic enzymology, Assessment of arterial Blood gas status and electrolyte balance, Point of Care Testing. Renal Function tests(in brief), Liver function tests(in brief), Biomedical Waste Management.

Suggestive Readings

Text Books:

- Biochemistry by U. Satyanarayan and U.Chakrapani, Elsevier
- Text book of Medical Biochemistry by M N Chaterjee and R. Shinde, Jaypee Brothers Medical Publishers (P) Ltd.
- Textbook of Biochemistry -D.M.Vasudevan
- Biochemistry -Pankaja Naik
- Clinical Biochemistry-Principles and Practice-Praful.B.Godkar
- Textbook of Biochemistry-Chatterjea and Shinde
- Textbook of Clinical Chemistry-Norbert W Teitz

Reference Books:

- Principal of Biochemistry by A.Lehninger, WH Freeman Publisher & Co.
- CBS Quick Reviewing Biochemistry by Ahuja,Lakshmi; CBS, New Delhi, 1999
- Fundamentals of Biochemistry by Deb, A.C.; CBA, Calcutta
- Harpers Biochemistry
- Clinical Biochemistry-Michael L.Bishop
- Textbook of Biochemistry-Rafi M.D
- Lippincott's Illustrated review of Biochemistry
- Practical Clinical Biochemistry-Harold Varley

APPLIED BIOCHEMISTRY LABORATORY

Subject Code:BRCTS1-107	L	T	P	C	4 Hours /Week
	0	0	4	2	

COURSE OBJECTIVES:

In this course the student will be provided comprehensive knowledge of the Human Biochemistry and metabolism to give a basis for understanding the clinical correlation & diagnosis of biochemical disorders.

COURSE SYLLABUS

- To visit Clinical biochemistry laboratory observe and learn about various tests are being performed in clinical biochemistry laboratory.
- To practice Blood sample collection as per sample draw pattern.
- Basics of various routine laboratory tests performed e.g. determination of blood sugar levels, Liver function tests, renal function tests, and Urine sugar and protein level.
- To understand briefly the interpretation of various tests report to know about critical alerts.
- To visit Blood Gas Analysis laboratory and learn to analyse blood gases.

Suggestive Readings

Text Books:

- Biochemistry by U. Satyanarayan and U.Chakrapani, Elsevier
- Text book of Medical Biochemistry by M N Chaterjee and R. Shinde, Jaypee Brothers Medical Publishers (P) Ltd.
- Textbook of Biochemistry -D.M.Vasudevan
- Biochemistry -Pankaja Naik
- Clinical Biochemistry-Principles and Practice-Praful.B.Godkar
- Textbook of Biochemistry-Chatterjea and Shinde
- Textbook of Clinical Chemistry-Norbert W Teitz

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- Fundamentals of Biochemistry by Deb, A.C.; CBA, Calcutta
- Harpers Biochemistry
- Clinical Biochemistry-Michael L.Bishop
- Textbook of Biochemistry-Rafi M.D
- Lippincott's Illustrated review of Biochemistry

COMMUNICATIONS SKILLS

Subject Code:**BRCTS1-105** | **L T P C** | **30 Hours**
2 0 0 2

COURSE OBJECTIVES:

- The students will be able to appreciate communication skills as these are important to everyone - those are how we give and receive information and convey our ideas and opinions with those around us.
- The topic shall also include the 'Soft skills' which is a term often associated with a person's "EQ" (Emotional Intelligence Quotient) which is an important part of their individual contribution to the success of an organization.

COURSE SYLLABUS

UNIT-1 **7 Hours**

- Basic Language Skills: Grammar and Usage. Business Communication Skills with focus on speaking - Conversations, discussions, dialogues, short presentations, pronunciation.

UNIT-II **7 Hours**

- Teaching the different methods of writing like letters, E-mails, report, case study, collecting the patient data etc. Basic compositions, journals, with a focus on paragraph form and organization. Basic concepts & principles of good communication

UNIT-III **8 Hours**

- Special characteristics of health communication. Types & process of communication. Barriers of communication & how to overcome.

UNIT-IV **8 Hours**

- Soft Skills - with important sub-elements: Communication Styles, Team work, Leadership Skills Effective & Excellent Customer Service, Decision Making & Problem Solving, Managing Time and Pressures, Self-Management & Attitude.

Recommended Text Books / Reference Books:

- Effective Communication and Soft Skills by Nitin Bhatnagar Pearson Education India, 2011
- Communication N Soft Skills Paperback – 2013 by Niraj Kumar, Chetan Srivastava

COMMUNICATION SKILLS LABORATORY

Subject Code: **BRCTS1-108**

L	T	P	C	
0	0	4	2	**2 Hours /Week**

COURSE OBJECTIVES:

- The students will be able to appreciate communication skills as these are important to everyone - those are how we give and receive information and convey our ideas and opinions with those around us.
- The topic shall also include the 'Soft skills' which is a term often associated with a person's "EQ" (Emotional Intelligence Quotient) which is an important part of their individual contribution to the success of an organization.

COURSE SYLLABUS:

1. Précis writing and simple passage from a prescribed text books. Atleast100 words should be chosen and few questions from the passage may be said to answer.
2. Speaking skill testing: Giving as small topic and to speak for at least two minutes on it.
3. Group discussion on profession related topics
4. To practice all forms communication i.e. drafting report, agenda notes, précis writing, E. mail drafting, circular, representations, press release, telephonic communication, practice of writing resume and Writing application of employment.
5. Organising a mock interview.
6. Locate a specified book in the library Find out some words in the dictionary Pronunciation, stress and intonation Give abbreviations of particular words and vice-versa Give meaning of some words Spell some words Practice of handling some communication system like telephone and noting down and conveying message.

DRUG ABUSE: PROBLEM, MANAGEMENT AND PREVENTION

Subject Code: BRCTS1-104 **L T P C** **45 Hours**
3 0 0 3

COURSE OBJECTIVES:

- To make students understand the concept of drug abuse and their impact on public health.
- To make students understand the types of drugs.
- To make them aware of the impact of drugs addiction on families and peers.
- To make students understand the management and prevention of drug abuse.

COURSE SYLLABUS

UNIT-I **15 Hours**

- **Problem of Drug Abuse:** Concept and Overview; Types of Drug Often Abused
- **Concept and Overview**
  What are drugs and what constitutes Drug Abuse?
  Prevalence of menace of Drug Abuse
  How drug Abuse is different from Drug Dependence and Drug Addiction?
  Physical and psychological dependence- concepts of drug tolerance
- **Introduction to drugs of abuse: Short Term, Long term effects & withdrawal symptoms**
- **Stimulants**: Amphetamines, Cocaine, Nicotine
- **Depressants**: Alcohol, Barbiturates- Nembutal, Seconal, Phenobarbital Benzodiazepines Diazepam, Alprazolam, Flunitrazepam
- **Narcotics:** Opium, morphine, heroin
- **Hallucinogens:** Cannabis & derivatives (marijuana, hashish, hash oil), Steroids and inhalants.

UNIT-II **10 Hours**

- **Nature of the Problem:** Vulnerable Age Groups, Signs and symptoms of Drug Abuse
  Physical indicators.
  Academic indicators.
  Behavioral and Psychological indicators.

UNIT-III **10Hours**

- **Causes and Consequences of Drug Abuse**
- **Causes**

(a) Physiological

(b) Psychological
(c) Sociological

Consequences of Drug Abuse

(a) For individuals
(b) For families
(c) For society & Nation

UNIT-IV **10 Hours**

- **Management & Prevention of Drug Abuse**
  Management of Drug Abuse
  Prevention of Drug Abuse
  Role of Family, School, Media, Legislation & Deaddiction Centers

Recommended Text Books / Reference Books:

1. Kapoor. T., Drug Epidemic among Indian Youth, Mittal Pub, New Delhi, 1985.
2. Modi, Ishwar and Modi, Shalini, Drugs: Addiction and Prevention, Rawat Publication, Jaipur,1997.
3. Ahuja, Ram, Social Problems in India, Rawat Publications, Jaipur, 2003.
4. National Household Survey of Alcohol and Drug Abuse. New Delhi, Clinical Epidemiological Unit, All India Institute of Medical Sciences, 2004.
5. World Drug Report , United Nations Office of Drug and Crime,2011
6. World Drug Report, United nations Office of Drug and Crime, 2010.
7. Extent, Pattern and Trend of Drug Use in India, Ministry of Social Justice and Empowerment, Government of India, 2004.
8. The Narcotic Drugs and Psychotropic Substances Act, 1985, New Delhi: Universal, 2012.

QUALITY MANAGEMENT, PATIENT SAFETY AND DISASTER MANAGEMENT

Subject Code: **BRCTS1-103** **L T P C** **30 Hours**
1 1 0 2

Course Objective:

- The course will help students to understand the basic concepts of quality health Care and develop skills to implement sustainable quality assurance, Quality control and Quality improvement program in the healthcare system particularly in Operation theatre services.
- They shall be prepared to work in healthcare system primarily taking care of patient safety.

COURSE SYLLABUS:

Unit -I **10 Hours**

Quality management system (QMS): Understanding Quality and components of QMS i.e. Quality assurance, Quality control and Quality improvement, the basic concepts of quality in health Care, Standards and Norms, Quality Improvement Tools, Introduction to NABH guidelines, Implementation of QMS in Operation theatres.

Unit -II **5 Hours**

Basics of emergency care and life support skills: Vital signs and primary assessment, Basic emergency care – first aid and triage, Basic life support (BLS) following cardiac arrest.

Unit -III **5 Hours**

Fundamental aspects of BLS: immediate recognition of sudden cardiac arrest (SCA) and activation of the emergency response system, Initial recognition and response to heart attack and stroke, ventilations including use of bag-valve-masks (BVMs) d. Choking, rescue breathing methods e. One- and Two-rescuer CPR.

Unit -IV **10 Hours**

Fundamental aspects of BLS: Early cardiopulmonary resuscitation (CPR), and rapid defibrillation with an automated external defibrillator (AED), Managing an emergency including moving a patient, Testing student's skills with focus on airways management and chest compressions.

Recommended Text Books / Reference Books:

- Hospital emergency management dr robbert d.mullar
- Gis in hospital and healthcare emergency management edited by ricskinner
- Handbook of disaster & emergency management aarim khoram & mahesh