SRI BALAJI VIDYAPEETH

(Deemed to be University Declared u/s 3 of UGC act 1956)

Accredited by NAAC with "A++" Grade

Pondicherry – 607402. www.sbvu.ac.in

MAHATMA GANDHI MEDICAL COLLEGE & RESEARCH INSTITUTE, PONDICHERRY

SCHOOL OF ALLIED HEALTH SCIENCES

B.Sc. DIABETIC CARE TECHNOLOGY

2022 -2022 ONWARDS

CHOICE BASED CREDIT SYSTEM (CBCS)

(As approved in the Academic Council Meeting Held on 18.07.2022)

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FOREWORD

In recent years, several innovative and need based undergraduate courses in the realms of Faculty of Allied Health Sciences have been promulgated. These courses are primarily oriented towards augmenting the Core academic courses in the Health Care sector.

Although, Allied Health Science courses are in place at several institutes' county wide, mention must be made of the fact that only a few Health Science Universities offer courses in Allied Health Sciences under a holistic umbrella. It is in the fitness of things that Allied Health Science courses are being offered in Nodal and Thrust areas at Sri Balaji Vidyapeeth starting from Certificate Programme through Doctoral studies.

The Undergraduate programme of Allied Health Science courses leading to B.Sc degree has been very carefully planned taking all the three components into due consideration, namely academics, patient care and research. Competency assumes great importance as the graduates coming out of these programmes would either directly or indirectly assist the Clinicians in day-to-day activities.

With this in view, the thrust has been laid on a common syllabus for all B.Sc programmes during the first year of study. These subjects offered in the first year are oriented Basic Medical Sciences, besides English as a mode of communication which is vital for affording Global Placements to our successful candidates. Furthermore, all programmes are designed in Choice Based Credit System (CBCS) made to suit the convenience of the students. The proficiency and competence of the Undergraduates is fortified by the promulgation of a unique internship cum research programme.

I wish all students success in their studies and career.

Prof. N. Ananthakrishnan

Dean – Faculty, SBV

POLICY ON COURSES OFFERED UNDER FACULTY OF ALLIED HEALTH SCIENCES

PREAMBLE

Sri Balaji Vidyapeeth, deemed to be University, established under Section 3 of UGC Act, 1956, Accredited by NAAC with A Grade offers various courses under the Faculty of Medicine, Faculty of Dentistry, Faculty of Nursing Sciences and Faculty of Allied Health Sciences.

"Allied Health Professions are a distinct group of health professionals who apply their expertise to prevent disease transmission, diagnose, treat and rehabilitate people of all ages and all specialties. Together with a range of technical and support staff they may deliver direct patient care, rehabilitation, treatment, diagnostics and health improvement interventions to restore and maintain optimal physical, sensory, psychological, cognitive and social functions." - Organization of International Chief Health Professions Officers (ICHPO).

In March 2011, the Ministry of Health and Family Welfare nominated the Public Health Foundation of India (PHFI) as its technical partner and constituted the National Initiative for Allied Health Sciences (NIAHS) secretariat with a mandate to develop a framework to improve allied health training, education and regulation in the country. (Yet to be notified by Government of India).

Sri Balaji Vidyapeeth has introduced several innovative need-based courses under the Faculty of Allied Health Sciences at Undergraduate and Postgraduate levels keeping in mind the initiative of Ministry of Health & Family Welfare, Government of India. In an era marked by expanding global job opportunities, these courses are bound to create an awareness among the students to suit themselves in the Health Care Team. Curricula have been designed in an objective manner and are aimed at cognitive, affective and psychomotor domains of learning. Furthermore, all courses are designed in Choice Based Credit System (CBCS) made to suit the convenience of the students.

The Undergraduate courses mainly concentrate in creating professionals who form the part of the Health Care Team. The role of these professional is to ably assist the doctor in treatment as well as prognosis and in many a times form the core professional of the team. The proficiency and competence of the Undergraduates is fortified by the promulgation of a unique internship cum research programme.

The Postgraduate courses mainly aim at shaping a graduate into a full professional. Also, these postgraduate courses help the graduates as well as the postgraduates to acquire specific skills on various adjunct therapies and techniques.

SUPPLY AND DEMAND

The starting of the new courses will entirely depend on

a. Demand for the course as seen by the enrolment at other institutes.
b. Employability after the qualification.

At present, the shortage of quality human resources is one of the major challenges faced by the public health domain in India. To redress the imbalance in human resources, the Working Group on Medical Education Training and Manpower Training of the Planning Commission (1984) prioritized training of para-professional and auxiliary personnel as follows:

- Training and development of auxiliary health professionals
- Training and development of para-health professionals
- Basic and pre-service/induction training in health care and health management
- Continuing education in health profession education.

Many new health occupations (Physician 's Assistant, Optometrists, Medical Imaging Technologists, and Laboratory Technologists etc.) have access over several common features in Allied Health Sciences including Basic Medical Sciences which are being effectively addressed. These processes have received support from administrators who are constantly searching for economic qualified and quality labor.

Service users are becoming more empowered through the consumerism of health, which has resulted in better access to information and user-consultation in service development and delivery. Each of these factors has the potential to influence the roles of existing professional groups and presents a challenge to workforce planners. In India, students are not aware of all the allied health courses available in the medical education system. Their career choices are generally influenced by their parents and peer groups, who themselves are unaware of the prospects in this area. By understanding that an entry-level position is just a first step, youth can realistically plan for their future and have a better understanding of what is needed for long-term success. This approach also benefits employers who need a steady inflow of workers at all levels of their organization.

POLICY ON ELIGIBILITY, ADMISSION, & COURSE DURATION OF UG DEGREE COURSES

At Sri Balaji Vidyapeeth, we empower the departments of all the constituent colleges to contribute to the development of innovative, need, value based and job-oriented courses taking into considerations the interests of the stakeholders.

The Undergraduate Degree courses (B.Sc.) are presently being offered under the Choice Based Credit System (CBCS) mode as per the Guidelines of UGC. The duration of the course will be Three years with a compulsory internship of 1 year (non-Stipendiary) in any of the tertiary health care institute of the University/ Trust. The proficiency and competence of the Undergraduates is fortified by the promulgation mandatory for appearing at the University Examinations. The maximum time limit for completion of the course will be Six years. However, the Dean / Principal, AHS has the discretionary powers to extend the course duration on valid grounds (Health, Maternity, Natural Disaster, etc.).

The First year of B.Sc. (AHS) courses will be common for all the disciplines. Though the disciplines will be provisionally allotted at the time of admission itself, upon

successful completion of the First year the candidates may opt for a change in the discipline or the college which will be permitted depending on the vacancy and on merit based on the First-year marks.

Fourth year – Internship Programme

One-year compulsory internship in various intensive care units, outpatient departments, research center under Sri Balaji Vidyapeeth during which the students get to hone the skills and knowledge acquired in the three years of study. This year ensures their readiness to approach a patient in any setting. The students should also complete a short duration project (in their areas of interest) and also maintain and submit a log book. The degree will be awarded only upon the successful completion of the course including the internship period. The one-year compulsory internship includes postings at the respective department.

Eligibility for Admission

A candidate seeking admission in the B.Sc. Allied Health Sciences courses shall be completing the age of 17 years as on December of the admission year. The candidate shall have passed the Higher Secondary Examinations conducted by the State Board or the Central Board or its equivalent. The candidate should have studied English as one of the papers and passed the same. The candidate should have had Biology, Physics & Chemistry and have passed the same in their qualifying Examinations. Mathematics as a subject is mandatory for B.Sc. Optometry, Medical Imaging Technology and Clinical Research.

The candidate should have secured 50 percent as aggregate in the subjects of English, Biology, Physics and Chemistry at the Higher Secondary Examinations. A relaxation of 5 percent in the minimum required (50%) shall be awarded to the candidates belonging to SC/ ST communities and physically challenged candidates (Disability more than 40%). The candidates seeking relaxation should necessarily submit the relevant certificates issued by the concerned Government authorities while applying for the course and mention about the same in their application.

Lateral Entry

Candidates who have Diploma of Two years in the concerned subject from a recognized University can seek Lateral Entry to the second year of the concerned courses provided that they have studied Anatomy, Biochemistry, Physiology, Microbiology and Pathology as individual papers during their Diploma Course.

Note: The candidates who have completed their Diploma Course through Distance Education modes are not eligible to seek admission through Lateral Entry mode.

Shorter intrinsic training programmes of duration few weeks to a month or so will be conducted by the departments under the Supervision of the concerned HOD / Dean / Principal.

POLICY ON CHANGE OF NAME/DATE OF BIRTH

The name and date of birth of candidates will be registered in the records of the University as given in their H.S.C. Mark Statement/Transfer Certificate only. No request will be considered later, to correct the spelling of the name of the candidates.

The parents and candidates are requested to verify and confirm these entries in the H.S.C. Mark Statement / Transfer Certificate at the time of receipt of the same. Once admitted to a course of study in the University, date of birth as furnished in the HSC/School record of student and submitted to the University at the time of admission, shall be taken as final proof and no subsequent request for change of date of birth will be entertained by the University at any time under any circumstance, either during the course of study or after the completion of such study. The student should take utmost care while entering their details in SBV GARUDA portal at the time of their registration. They are responsible for any data mismatch at later stage.

Every student shall give an undertaking to this effect duly counter signed by his/her parent or guardian at the time of admission.

PAYMENT OF TUITION AND OTHER FEES

Every student shall pay tuition fee and other fee, as prescribed by the University, within the due date notified. The fees are subject to revision as per rules of the University. All fees, once paid to the University, will not be refunded, or adjusted for any other purpose under any circumstance.

RULES FOR DISCONTINUANCE FROM COURSE OF STUDY

Where any student applies for discontinuance, or without any application discontinues on his/her own, from the course to which he/she has been admitted to, for any reason, either after the cut-off date prescribed by the statutory authorities/ University for admission to the first year of the course concerned or where the seat is rendered vacant without having any chance of being filled up with any other candidate from waiting list etc., such students will have to remit the tuition fee and other applicable fees for the **'Entire/Remaining Course Period'**. Unless and until payment of all the prescribed fees for the entire/remaining course period is made to the University account, such student shall not be entitled to any certificate including transfer certificate, mark sheets etc., to be issued by the College/ University and to get back his/her original certificates deposited with the University at the time of admission. All students and parent will be required to furnish a declaration agreeing to the above said conditions at the time of admission.

POLICY ON RAGGING

Ragging is strictly prohibited in the University Campus. Sri Balaji Vidyapeeth strictly enforces anti-ragging measures and the campus is free from any form of ragging. Any violation will be dealt with according to the law in force and as per directives of the Supreme Court of India. The University has adopted the ―Medical Council of India (Prevention and Prohibition of ragging in Medical College / Institutions) Regulations, 2009‖ and ―UGC Regulations on curbing the menace of Ragging in Higher Educational

Institutions, 2009‖ and these Regulations shall be applicable to all students. These Regulations are available in the University Website.

IMPORTANT NOTE

All admissions are subject to fulfillment of all the prescribed eligibility conditions by the candidate. If it is found either at the time of admission or at a later stage, that the candidate has given false information/forged certificates or concealed material information, his/her admission shall be cancelled and the student shall be dismissed from the college immediately.

The University reserves the right to change the curriculum, course structure and the rules relating to admission, examinations, fee structure, refunds, etc.

All disputes arising in the interpretation and implementation of the provisions will be referred to the Vice-Chancellor of Sri Balaji Vidyapeeth and Vice-Chancellor 's decision shall be final and binding.

In respect of matters relating to or arising out of this prospectus the jurisdiction shall lie in Puducherry alone.

FUTURE PLANS

It is planned to conduct an informal market survey and start AHS Certificate & M.Sc. courses.

OUTLINE OF THE CHOICE BASED CREDIT SYSTEM (CBCS) FOR UNDERGRADUATE DEGREE PROGRAMME

Credit System Credit System (CBCS): The CBCS provides choice for students to select from the prescribed courses (core, elective or minor or soft skill courses).This is to enhance the quality and mobility of the students within and between the Universities in the country and abroad.

Credit hours
16 Theory classes = 1 credit
32 Practical/Tutorial/Clinical training/Research project = 1 credit

Subjects	Credits
Each core subjects	6 Credits
Ability Enhancement Compulsory course (AECC)	2 Credits
Skill Enhancement course (SEC)	2 Credits
Generic Elective course (GE)	4 Credits
Discipline Electives (DE)	4 Credits

Core course: A Hard-core course may be a Theory, Practical (lab), clinical rotation/field work or Research Project Work which are compulsory component studied by candidate to complete the requirement of their programme.

Discipline Elective (DE) Course: An elective course which is supportive or related to the discipline/subject (i.e. supportive to core course) is called a Discipline Elective (DSE) Course.

Generic Elective (GE) Course: An elective course which is unrelated to the discipline/subject (i.e. unrelated to core course) to expand their knowledge chosen by a candidate is called a Generic Elective.

Skill Enhancement Courses (SEC): This course chosen by candidate which provides additional value-based and skill-based knowledge to increase their employability.
NPTEL/ SWAYAM / MOOC/ Other value-added online courses

COLLEGES	PROGRAMMES WHICH INVOLVE CREDIT TRANSFER
Mahatma Gandhi Medical College and Research Institute & Shri Sathya Sai Medical College and Research Institute	B. Sc. (AHS)

Each Undergraduate student of B. Sc (AHS) is recommended to earn a minimum of **EIGHT credits** from the online courses offered through SWAYAM - NPTEL – MOOCs platform during their Course period. It is to be noted that the student earns the credit prior to the starting of their internship.

PROGRAMME	DESIRABLE CREDITS	NUMBER OF COURSES
B.Sc. (AHS)	Minimum - 8 credits	Minimum - 4 Maximum - 6

It is required of the Undergraduate students (B.Sc – AHS) that in addition to their curricular requirement of the programme, it is recommended for enhancing job opportunities for the student to earn minimum of prescribed credits from the online courses offered through SWAYAN - NPTEL – MOOCs platform that will be transferred into the students' Statement of Marks, issued during the final year of their study. This has to be completed prior to the starting of their internship programme and students have to be informed that **those who do not earn the minimum credits prescribed by SBV, it will be mentioned NIL for the details on credits transferred from ONLINE courses in their FINAL year statement of marks issued by SBV.**

Credit points during Internship

For the 16 UG Internship programmes, there is a Minimum of 40 Credit points to a maximum of 45 Credit points which the students have to obtain. Credit points will be assessed based on the student's satisfactory attendance, performance in the Clinical /Camp postings / Seminars /Presentation of the logbook & Research project.

CRITERIA FOR UNIVERSITY EXAMINATIONS

Eligibility / Maximum Duration for the Award of the Degree

a) The candidates shall be eligible for the bachelor degree when they have undergone the prescribed course of study for a period of not less than four years (3 Years + 1 Year Internship) in an institution approved by the university and have passed the prescribed examination in all subjects.

b) A student who does not meet the minimum attendance requirement in a year must compensate the inadequacies before appearing examination.

To reaffirm the passing minimum in the University Examinations for all the Undergraduate courses offered under the Faculty of Allied Health Sciences.

- A candidate shall secure a minimum of 50% aggregate in University Core theory/ Elective theory Exams and Internal Assessment put together.
- A candidate shall secure a minimum of 50% aggregate in University Practical and Internal Assessment put together.
- For Skill based electives, a candidate shall secure a minimum of 50% aggregate in University Practical cum Viva Exams and Internal Assessment put together.

Retotaling / Revaluation and Grace Mark

Retotaling / Revaluation for the AHS programme will be applicable only for those students who have failed in theory part, but have cleared the practical part in the University Examinations.

Grace marks up to a maximum of five marks may be awarded at the discretion of the university to a student who has failed and shall be distributed among the failed subjects.

SCHEME OF EXAMINATION

1) **Attendance Requirements**: 80% hours of learning in each Core Subjects / Electives / Practical's /Postings for appearing for the university exams.
2) **Minimum marks required to be eligible for University Examination**: 35% marks in the internal assessment (Theory / Practical) are required for the candidate to be eligible to appear in the University Examinations.
3) **Passing Minimum**: 50% aggregate both in theory and practical's including internal assessment marks is required for a candidate to pass in the University Examinations.
4) **Submission of Record Note Books for practical examinations**

   Candidates appearing for practical examinations should submit bonafide Record Note Books prescribed for practical examinations, otherwise the candidates shall not be permitted to appear for the practical examinations.

GRADING

Marks obtained by candidate	Equivalent grade letter	Grade descriptor	Grade point
85 % & above	O	Outstanding	10
75-84	A+	Excellent	9
65-74	A	Very good	8
60-64	B+	Good	7
55-59	B	Above average	6
50-54	C	Average pass	5
49 & below	F	Reappear	0
	AB	Absent	0

A student obtaining **Grade F** shall be considered failed and will be required to reappear in the examination.

Conversion formula for Percentage to CGPA
Percentage divided by 9.5 = CGPA

Award of Class

Class division will be based on CGPA grade

≥ 7.8 grade point = Distinction Division
≥ 6.8 and < 7.7 grade point = First class Division
≥ 6.3 and < 6.7 grade point = Second class Division
≥ 5.2 and < 6.2 grade point = Third class Division
< 5.2 and below – Fail

Computation of SGPA and CGPA will be in accordance with the UGC Guidelines & Recommendations. It is a measure of overall cumulative performance of a student over all exams. The CGPA is the ratio of total credit points secured by a student in various courses in all exams and the sum of the total credits of all courses in all the University exams. It is expressed up to two decimal places.

Cumulative Grade Point Average (CGPA): It is a measure of overall cumulative performance of a student over all exams. The CGPA is the ratio of total credit points secured by a student in various courses in all exams and the sum of the total credits of all courses in all the University exams. It is expressed up to two decimal places.

Grade Point: It is a numerical weight allotted to each letter grade on a 10-point scale.

Transcript: Based on the credits earned, a transcript shall be issued to all the registered students after the completion of the program indicating the hours of study and structure of the curriculum delivery as prescribed in his/her curriculum and completed by the student. The transcript will display the course details, including course code, title, and number of credits, hours and type of contact hours in a semester.

INTERNAL ASSESSMENT

1. Continuous Internal Assessment (CIA) for all AHS programs with a minimum of 4 Assessments per year.
2. Internal Assessment will be done in each subject according to the scheme of examinations. The IA marks will be on the basis of performance in the assignment, class tests and practical test in the clinical areas.

Evaluation of Clinical Rotation

Lab, Clinical cum Community postings - To conduct practical ‘s or viva based on the Heads of the concerned department‘s decision and the total 100 marks to be sent to COE through proper channel to find a place in the transcript.

Question Paper Pattern

The following question paper patterns shall be followed for CBCS pattern syllabi for the candidates admitted from the academic year 2019-20 onwards.

CORE SUBJECTS

For **UG NON-SEMESTER COURSES -** Each Core Subjects University Exam carries -100 marks of 80(Theory) + 20 (IA marks) which consists of

		Theory – 80 marks	
I	Essay-type questions of either / or type -(like 1.a (or) 1.b)	2 (of either / or type)	2 x 10=20
II	Short answer questions	6 (*1 choice)	5 x 6=30
II	Very Short answer questions	12 (*2 choice)	10 x 3=30

The University duration of 80 marks – 3 Hours For courses having Section A & Section B Subjects

For **Section A & Section B** Subjects University Exam carries - 50 marks for each Section consisting of 40 (Theory marks) + 10 (IA marks)

		Theory – 40 marks	
I	Essay-type questions of either / or type -(like 1.a (or) 1.b)	1 (of either / or type)	1 x 10 = 10
II	Short answer questions	5 (*2 choice)	3 x 6= 18
II	Very Short answer questions	5 (*1 choice)	4 x 3 = 12

ELECTIVE SUBJECTS

For all UG NON-SEMESTER **COMPULSORY, GENERIC & DISCIPLINE** Elective University Exam papers carries- 50 marks of 40 (Theory)+10 (IA marks) which consists of

Theory – 40 marks			
I	Short answer questions	5 (*3 choice)	5 x 6=30
II	Very Short answer questions	5 (*2 choice)	5 x 2=10

*** Number of choices given**

- For **SKILL BASED ELECTIVES** from 2019-20 batch onwards all UG AHS courses will have 40 marks as university Practical cum Viva examination & 10 marks as Internal Assessment = 50 marks.
- 50 marks of the **COMPULSORY, GENERIC, DISCIPLINE & SKILL BASED ELECITIVES** which will be converted to 100 marks in the transcript.

CONDONATION FOR SHORTAGE OF ATTENDANCE

Condonation of shortage of attendance in aggregate up to 10% in each Year may be granted by the college Academic Committee and as per regulations of university.

I YEAR

SCHOOL OF ALLIED HEALTH SCIENCES

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COMMON SYLLABUS FOR ALL FIRST YEAR B.Sc. ALLIED HEALTH SCIENCES

CORE SUBJECTS

1. Anatomy
2. Physiology
3. Biochemistry
4. Pathology &Microbiology

ELECTIVES

Ability Enhancement compulsory course (AECC)

1. English

Skill enhancement course (SEC) – Choose any TWO

1. Culinary Skills for optimal nutrition
2. Enhancing soft skill &personality
3. Basics of Yoga &Practice
4. Speaking effectively

Generic Elective Course (GEC) – Choose any ONE

1. Basics of Hospital Administration
2. Counseling and Guidance
3. Lifestyle Disorders

SCHEME OF CREDIT BASED ACADEMIC CURRICULUM

Faculty Code	Category	Course Title	HOURS				CREDITS			
AHS	Core theory DCT	Subjects	Theory	Practical	Tutorials	Total hours	Lecture (L)	Practical	Tutorials	Credits
AHS	DCT-1	Anatomy	75		30	105	5		1	6
AHS	DCT-2	Physiology	75		30	105	5		1	6
AHS	DCT-3	Biochemistry	75		30	105	5		1	6
AHS	DCT-4	Pathology	75		30	105	5		1	6
AHS	DCT-5	Microbiology	75		30	105	5		1	6
AHS	AECC	English	15		30	45	1		1	2
AHS	SEC – 1-3	Student ‘s choice	15	30		45	1	1		2
AHS	SEC – 1-3	Student ‘s choice	15	30		45	1	1		2
AHS	GEC 1-3	Student ‘s choice	60			60	4			4
TOTAL			**480**	**60**	**180**	**720**	**32**	**2**	**6**	**40**

SCHEME OF EXAMINATION AHS - I YEAR BASIC SCIENCES

Papers	Subject	Theory		Grand Total (900)	Min marks to pass % (450)
		UE	IA		
DCT-1	Anatomy	80	20	100	50
DCT-2	Physiology	80	20	100	50
DCT-3	Biochemistry	80	20	100	50
DCT-4	Pathology	80	20	100	50
DCT-5	Microbiology	80	20	100	50
AECC	Ability Enhancement Compulsory Course-English	80	20	100	50
SEC	Skill Enhancement Course	80	20	100	50
SEC	Skill Enhancement Course	80	20	100	50
GEC	Generic elective	80	20	100	50

***UIA – University Internal Assessment only for Lab Trainings (No Final University Examination).**

Passing criteria -50 % aggregate both in theory and practical ‘s including internal assessment marks

For all elective course, 40 marks for university theory and Practical cum Viva examination & 10 marks as Internal Assessment = 50 marks which will be converted to 100 marks in the transcript

ANATOMY

SYLLABUS FOR I YEAR
B.Sc. ALLIED HEALTH SCIENCES – ANATOMY

NAME OF THE SUBJECT PAPER	**: ANATOMY**
DURATION OF THEORY CLASSES	**: 75 Hrs**
DURATION OF TUTORIAL SESSIONS	**: 30 Hrs**
EXAMINATION	**: 100 Marks (80 U + 20IA)**
NO UNIVERSITY PRACTICAL EXAMINATION	
DURATION OF THEORY EXAMINATION	**: 3 Hrs**
YEAR IN WHICH THE SUBJECT PAPER IS TAUGHT	**: I YEAR**

COURSE DESCRIPTION

The course is designed to assist students to acquire knowledge of the normal structure of human body and its functions. To ensure that the students understand the alteration in anatomical structure and function in disease in the practice of accident and emergency care technology.

OBJECTIVES

At the end of the course, the student will be able to

1. Describe the anatomical terms, organization of human body and structure of cell, tissue, membranes and glands.
2. Describe the structure and functions of bones and joints.
3. Describe the structure and functions of systems in body. Have knowledge about Applied Anatomy

COURSE OUTCOMES FOR ANATOMY

At the end of the course, students will be able to...

AN-AHS-CO1: Explains the Gross and Microscopic structure of human body.

AN-AHS-CO2: Explains the normal structure and integration of the functions of the organs and systems on basis of the structure of Human body.

AN-AHS-CO3: Explains the clinical correlation of the organs and structures involved and interprets the anatomical basis of the disease presentations.

AN-AHS-CO4: Knows about the General development of human body.

AN-AHS-CO5: Outlines the knowing of the hard & soft structures of the body.

UNIT	TITLE	THEORY + TUTORIALS (80 + 32) HOURS
I	**(a) INTRODUCTION TO HUMAN BODY AS A WHOLE** • Terms of location, positions, and planes • Cell and its organelles • Epithelium – Definition, classification, description with examples and functions. • Glands–Classification, description of Serous and Mucous glands with examples. • Basic tissues – Classification with examples. **(b) LOCOMOTION ANDSUPPORT** •Cartilage – Different types with examples and Histology. •Bone – Classification, Names of bone cells, parts of long bone, Microscopy of Compact bone, Names of all bones, Vertebral column, Intervertebral disc, Fontanelles of Fetal Skull. •Joints–Classification of Joints with examples, Synovial Joints (in detail for Medical Imaging Technology students) •Muscular system: Classification of Muscular tissue and histology. •Names of the muscles of the body.	20 + 8
II	**UNIT (a) CARDIO VASCULAR SYSTEM** • Heart Size, Location, Chambers – Exterior & Interior – conducting System and Valves • Blood supply of heart • Systemic & Pulmonary circulation • Branches of Aorta, Common Carotid artery, Subclavian artery, Axillary artery, Brachial artery, Superficial Palmar arch, Femoral artery and Internal Iliac artery. • Peripheral pulse • Inferior Venacava, Portal vein and Porto systemic anastomosis. • Great Saphenous vein • Dural Venous Sinuses • Lymphatic System – Cisterna Chyli and Thoracic duct. • Names of regionally mphatics, axillary and inguinal mph nodes in brief. **(b) RESPIRATORYSYSTEM** • Parts of Respiratory System, Nose, Nasal Cavity, Larynx, Trachea, Lungs, Broncho pulmonary segments • Histology of Trachea, Lung and Pleura • Names of Para nasal air sinuses	20 + 5
III	**(a) GASTRO- INTESTINAL SYSTEM – (10 +5hrs)** • Parts of GIT, Oral cavity (Tongue, Tonsil, Dentition, Pharynx, Salivary glands, Waldeyer‘s ring) • Oesophagus, Stomach, Small & Large Intestine, Liver, Gall Bladder, Pancreas **(b) URINARY SYSTEM - - (5hrs)** • Kidney, Ureter, Urinary bladder, Male & Female Urethra	10 + 5

IV	**(a) REPRODUCTIVE SYSTEM – (10 +2hrs)** • Parts of Male Reproductive system, Testis, Vas deferens, Epididymis, Prostate • Parts of Female Reproductive System, Uterus, Fallopian tubes, Ovary • Mammary gland **(b) ENDOCRINE GLANDS - (5hrs)** • Names of all Endocrine glands in detail on Pituitary Gland, Thyroid Gland, Parathyroid gland and Suprarenal Gland.	10 + 5
V	**NERVOUS SYSTEM – (15 +2 hrs)** • Cerebrum, Cerebellum, Mid brain, Pons, Medulla Oblongata, Spinal cord with spinal nerve • Meninges, Ventricles and Cerebrospinal fluid • Names of Basal nuclei • Blood Supply of Brain • Cranial Nerves	10 + 5
VI	**(a) EMBRYOLOGY** • Spermatogenesis and Oogenesis • Ovulation, Fertilization • Fetal Circulation • Placenta **(b) COURSE SPECIFICTOPICS** • Skin • Eye • Arterial System and Venous Drainage System in detail	10 + 4

TUTORIALS (30 hrs)

- Histology of Types of Epithelium
- Histology of Serous, Mucous and Mixed Salivary gland
- Histology of the types of Cartilage
- Demo of all bones showing parts, radiographs of normal bones &Joints
- Histology of Skeletal (TS & LS), Smooth and Cardiac muscle
- Demonstration of Heart and Vessels of the body
- Histology of Large artery, Medium sized artery and vein, Large Vein
- Microscopic appearance of Large and Medium sized Artery and Vein, Large Vein
- Demonstration of all muscles of the body
- Pericardium
- Histology of Lymph node, Spleen, Tonsil and Thymus
- Demonstration of parts of Respiratory system
- Normal Chest radiograph showing Heart shadows
- Histology of Lung and Trachea
- Normal Angiograms
- Histology of Lymphatic tissues
- Radiographs of Abdomen – IVP, Retrograde cystogram
- Demonstration of parts of the Urinary system and Histology of Kidney, Ureter and Urinary bladder

- Demonstration of Male and Female Pelvis with organs in situ.
- Histology of Male and Female Reproductive organs
- Histology of Pituitary, Thyroid, parathyroid and Suprarenal glands
- Histology of peripheral nerve and optic nerve.
- Demo of all parts of brain

METHODS OF TEACHING

- Lecture cum discussion
- Demonstration
- Lab visit
- Practical work record

METHODS OF EVALUATION

- Written Test
- Laboratory observation Book
- Assignments
- Oral Presentations

REFERENCE BOOKS

- Cohen, Memmler: Structure & Function of Human Body, Lippincott Williams & Wilkins; Tenth edition(2012)
- Waugh: Ross & Wilson Anatomy & Physiology in health and illness Penguin Books Ltd(2010)
- Tortora: Anatomy & Physiology, John Wiley & Sons(2012)

B.Sc. ALLIED HEALTH SCIENCES – ANATOMY - BLUE PRINT

Unit No.	Unit	Weightage	Marks Allotted	Knowledge / Recall			Understanding			Application		
				LAQ	SAQ	VSAQ	LAQ	SAQ	VSAQ	LAQ	SAQ	VSAQ
1	I	14 %	12	…	1	1	---	---	1	---	---	---
2	II	20 %	16	1		1	1*		----	---	---	1
3	III	20 %	15	1*	1	1	--	1	----	---	---	1*
4	IV	20 %	16	--	--	1	1	1*	1*	---	----	1
5	V	14 %	12	---	1	---	---	--	1	---	---	1
6	VI	12 %	9	---	1	---	---	--	1	---	---	--

LONG ANSWER QUESTIONS

S. No	Unit wise	Type of Question	Question has to ask
1	CVS / Respiratory System / GIT	Knowledge / Understanding	2
2	Urinary system / Reproductive system / Endocrine system	Knowledge / Understanding	2

SHORT ANSWER QUESTIONS

S. No	Unit wise	Type of Question	Question has to ask
1	Unit - I	Recall	1
2	Unit - II	Understanding	-
3	Unit – III	Understanding + Recall	2
4	Unit – IV	Understanding / Recall	1
5	Unit – V	Understanding	1
6	Unit – VI	Understanding / Recall	1

VERY SHORT ANSWER QUESTIONS

S.No	Unit wise	Type of Question	Question has to ask
1	Unit – I	Understanding / Recall	2
2	Unit – II	Understanding + Recall	2
3	Unit – III	Understanding + Recall + Application	2
4	Unit – IV	Understanding + Recall + Application	3
5	Unit – V	Understanding + Application	2
6	Unit – VI	Understanding / Application	1

The duration of Examination (University) is Three (3) hours.

The total marks for the University Examination will be 100 marks.

Long Answer Questions : 2 X 10 = 20 marks (Choice 2 out of4)

Short Answer Questions : 5 X 6 = 30 marks (Choice 5 out of 6)

Very Short Answer Questions : 10 X3 = 30 marks (Choice 10 out of 12)

TOTAL = Theory 80 + IA 20 = 100marks

MODEL QUESTION PAPER
FIRST YEAR B.Sc. ALLIED HEALTH SCIENCES ANATOMY

Time:3 Hours Maximum Marks:80

Illustrate your answers with suitable diagrams where ever necessary.

LONG ANSWER QUESTIONS - (**Write any Two**) (**2 X 10 =20**)

1. (A) Explain the Gross features of Right atrium. **(OR)**
   (B) Explain the Gross features of Stomach.
2. (A) Explain the Gross features of Kidney. **(OR)**
   (B) Explain the Gross features of Thyroid gland.

SHORT ANSWER QUESTIONS - (Write any Five) (5 x 6=30)

1. Discuss the Classification of joints with its examples.
2. Discuss the boundaries and contents of superior Mediastinum.
3. Discuss the gross features of Right lung.
4. Discuss the external & internal features of 2nd part of Duodenum.
5. Discuss the location, external features of urinary bladder.
6. Discuss the supports of uterus.

VERY SHORT ANSWER QUESTIONS - (Write any Ten) (10 x3 =30)

1. Write a note on Sesamoid bone.
2. Trace the conducting system of Heart.
3. List out the paranasal air sinuses.
4. Write a note on Pancreatic duct.
5. List out the parts & functions of extra hepatic biliary apparatus.
6. Write a note on Trigone of urinary bladder.
7. Enumerate the Ovarian follicles.
8. Enumerate the hormones of Adrenal gland.
9. Enumerate the layers of Scrotum.
10. List out the meningeal layers & its modifications.
11. Structure of thin skin.
12. Write a note on Fertilization

PHYSIOLOGY

SYLLABUS FOR I YEAR
B.Sc. ALLIED HEALTH SCIENCES – PHYSIOLOGY

NAME OF THE SUBJECT PAPER	**: PHYSIOLOGY**
DURATION OF THEORY CLASSES	**: 75 Hrs**
DURATION OF TUTORIAL SESSIONS	**: 30 Hrs**
THEORY EXAMINATION	**: 100 Marks (80 U + 20IA)**
UNIVERSITY PRACTICAL EXAMINATION	**: NIL**
DURATION OF THEORY EXAMINATION	**: 3 Hrs**
YEAR IN WHICH THE SUBJECT PAPER IS TAUGHT	**: I YEAR**

COURSE DESCRIPTION

The course is designed to assist students to acquire the knowledge of the normal physiology of various human body systems and understand the alternation in physiology in disease and practice of accident and emergency care technology

COURSE OBJECTIVES

At the end of the course, the student will be able to

- Describe the physiology of cell, tissues, membranes and glands.
- Describe the physiology of blood and functions of heart.
- Demonstrate blood cell count, coagulation, grouping, Hb; BP and Pulse monitoring
- Describe the physiology and mechanism of respiration.
- Demonstrate Spirometry
- Describe the physiology of Excretory system

COURSE OUTCOMES FOR PHYSIOLOGY

At the end of the course, students will be able to...

PHY-AHS-CO1: Understand normal structure and functioning of the organs and organ systems of the body

PHY-AHS-CO2: Understand the regulatory mechanisms in normal and physiological variations. **PHY-AHS-CO3:** Understand age-related physiological changes in the organ functions that reflect normal growth and development.

PHY-AHS-CO 4: Understand the physiological basis of diseases.

PHY-AHS- CO 5: Interpret laboratory data pertaining to normal function of organ and organ system.

UNIT	TITLE	THEORY + TUTORIALS (75) HOURS
I	**a. General physiology (5)** • Structure and functions of cell and cell organelles • Transport across cell membrane • Homeostasis: definition and feedback mechanisms **b. Hematology (10)** • Composition and function of blood and body fluids • Plasma proteins and their functions • RBC: morphology, production, functions and fate • Anemia: etiological & morphological classification • Immunity: Types, mechanism of immune response • Hemostasis and anticoagulants • Blood groups: Types, cross matching, and clinical importance	15
II	**Cardiovascular physiology (10 hrs.** • Functional anatomy • Conductive system of heart: origin, spread of cardiac impulse • Properties of cardiac muscle • ECG: leads, principles of normal recording. Normal waves and interpretations • Cardiac cycle • Heart sounds, Physiological basis of murmur • Cardiac output: definition, factors affecting, factors regulating and its measurement • Blood pressure: total pressure, lateral pressure, importance of different pressure, measurements, factors controlling BP • Shock: definition &types.	10
III	**Respiratory physiology (10 hrs)** • Functional anatomy • Mechanism of respiration • Lung volumes and capacities: definition, normalvalues, measurements and clinical importance • Transport of gases: oxygen and carbon dioxide • Control of respiration: neural and chemical regulation. • Dyspnoea, Asphyxia, cyanosis, periodic breathing • Hypoxia : definition and types	10
IV	**a. Gastro-intestinal physiology (5 hrs)** Functional anatomy of GIT,Functional organization of enteric • Nervous system. Basal Electrical Rhythm, Migratory MotorComplex • Mouth – Salivary secretion (composition & function), deglutition–phases. • Esophagus – primary & secondary peristalsis, cause of Gastroesophageal reflex disease &Achalasia cardia • Stomach – gastric secretion (composition and mech of HCl secretion), gastric motility, ulcer –physiological basis • Liver and gallbladder–functions, jaundice–def and types. • Exocrine Pancreases–secretion (composition & function) • Small intestine –small intestinal movements • Large intestine, rectum –movements	15

	b. Renal physiology (10 hrs) • Functional anatomy of kidneys, Nephron – structure, types and function.Juxtaglomerul arapparatus • Glomerular filtration rate–definition,normal values, • determinants,factors affecting,regulation and measurement • Tubular function – (overview) site of reabsorption and secretion of ions (Na+, Glucose,water, H+) • Counter current mechanisms – counter current multiplier and exchanger • Micturition – functional anatomy of urinary bladder, micturition reflex • Renal dialysis – indication, types, composition of dialyzing fluid	
V	**a. Endocrine physiology (10hrs)** • Hypothalamus – name the hormones produced and list their function • Pituitary gland- name the hormones produced and list their function,cause and clinical features of acromegaly,gigantism • And dwarfism • Thyroid gland–name of the hormones produced,list their • functions, cause and clinical features of hyper and hypothyroidism • Parathyroid gland - name of the hormones produced, list their functions,cause and clinical features of hypoparathyroidism • Endocrine Pancrease- name of the hormones produced, list their functions, cause and clinical features of Diabetes mellitus. • Adrenal cortex-name of the hormones produced,list their • functions,cause and clinical features of Cushing's syndrome • Adrenal medulla-name of the hormones produced **b. Reproductive physiology (5)** • Male reproductive system – stages of spermatogenesis, functions of testosterone • Female reproductive system – stages of oogenesis, menstrual cycle • Contraception–types and mechanism of action • Fertilization – Definition, site of implantation. Pregnancy–cause, duration • Placenta–functions and hormones secreted	15
VI	**Nerve Muscle physiology-PNS-CNS (6 hrs)** • Organization of nervous system – CNS (Neurons, neuro glial cell–types and functions, CSF),PNS–motoneuron. • Events in NMJ transmission and Synapse • Types of muscles: • Skeletal muscle - structure, muscle proteins, steps of contraction and relaxation, types of contraction Cardiac muscle–Structure, function • Smooth muscle-Structure, function Ascending & Descending tracts –Name and functions • Functions of cerebellum, Basalganglia and hypothalamus **Special senses(4hrs)** • Vision: Errors of refraction, visual pathway and effects of lesion ▪ Hearing functions of middle ear, conductive and sensor neural deafness	10

	• Hypothalamus: functions **c. Special senses (5 hrs.)** • Vision: Errors of refraction, visual pathway, and effects of lesion • Hearing: functions of middle ear, Conductive deafness, and nerve deafness. • Smell and taste: receptors and pathways	

TUTORIALS (30 hrs.)

- Hemoglobinometry
- White Blood Cell Count
- Red Blood Cell Count
- Determination of Blood Groups
- Leishman's Staining and Differential WBC Count
- Determination of Packed Cell Volume
- Erythrocyte Sedimentation Rate(ESR)
- Determination of Clotting Time, Bleeding Time
- Recording of Blood pleasure
- Auscultation for Heart sounds
- Artificial Respiration
- Determination of Vital capacity.

METHODS OF TEACHING

- Lecture cum discussion
- Demonstration
- Lab visit
- Practical work record

METHODS OF EVALUATION

- Written Test
- Laboratory observation Book
- Assignments
- Oral Presentations

REFERENCE BOOKS

1. Basics of Medical Physiology D.Venkatesh /H.H.Sudhakar Wolters Kluwer Third Edition.
2. Waugh: Ross & Wilson Anatomy & Physiology in health and illness Penguin Books Ltd (2010).
3. Principles of Physiology, Singh (H).

PHYSIOLOGY - BLUEPRINT

Unit	Systems	Marks	Weightage (%)	Question type		
				LAQ (2 out of 4)	SAQ (5 out of 6)	VSAQ (10 out of 12)
I	General physiology	15	19%			2+1*
	Hematology			1*	1	1
II	Cardiovascular physiology	16	20%	1	1	
III	Respiratory physiology	16	20%	1	1	
IV	Gastro-intestinal physiology	12	15%		1	1+1*
	Renal physiology			1*		1
V	Endocrine physiology	12	15%		1	1
	Reproductive physiology					1
VI	Nerve-Muscle physiology	09	11%			1
	Central nervous system				1*	1
	Special senses					1
Note: * represents question of choice						

- The duration of Examination (University) is Three (3) hours.
- The total marks for the University Examination will be 100marks.

  Long Answer Questions : 2 X 10 = 20 marks (Choice 2 out of4)

  Short Answer Questions : 5 X 6 = 30 marks (Choice 5 out of 6)

  Very Short Answer Questions : 10 X3 = 30 marks (Choice 10 out of 12)

  TOTAL = Theory 80 + IA 20 = 100mark

MODEL QUESTION PAPER
FIRST YEAR B.Sc. ALLIED HEALTH SCIENCES
PHYSIOLOGY

Total marks: 80 **Duration: 3hours**

LONG QUESTION ANSWER **(2 X 10 =20)**

1. a) Define Erythropoiesis? Describe its stages. Mention the factors influencing it. **(OR)**
   b) Define blood pressure. Write its normal range. Briefly explain short term regulation mechanism of blood pressure.
2. a) Explain how oxygen is transported in blood. Explain oxygen dissociation curve. List the factors shifting this curve to right&left.**(OR)**
   b) Define Glomerular filtration rate (GFR). Write its normal value. Explain the factors affecting it.

SHORT QUESTION ANSWER – Answer any 5 **(5 X 6 =30)**

1. Define hemostasis. Briefly explain blood clotting mechanism.
2. Define cardiac output. Give its normal value. Describe the factors regulating it
3. Draw normal spirogram indicating static lung volumes and capacities.
4. Briefly explain the mechanism of HCl secretion in stomach.
5. Name the anterior pituitary hormones. Briefly explain functions of growth hormones.
6. Briefly describe stages of Spermatogenesis.

VERY SHORT ANSWER – Answer any 10 **(10 X 3=30)**

1. Write the functions of Golgi apparatus
2. Briefly explain osmosis
3. Briefly describe the function of Na^+ K^+ ATPase pump
4. What are anticoagulants? Name any two.
5. Write any 3 functions of saliva
6. Name any two GI hormones. Write any one function of them.
7. Name the cells of Juxta glomerular apparatus & mention their function
8. List the 3 functions of thyroid hormone
9. Name natural contraceptive methods
10. Classify muscle proteins
11. Classify glial cell. Write any two functions of it.
12. What is myopia? How it is corrected

BIOCHEMISTRY

SYLLABUS FOR I YEAR
B.Sc. ALLIED HEALTH SCIENCES – BIOCHEMISTRY

NAME OF THESUBJECTPAPER	**: BIOCHEMISTRY**
DURATION OF THEORY CLASSES	**: 75hrs**
DURATION OF TUTORIAL SESSIONS	**: 30hrs**
THEORY EXAMINATION	**: 100 marks (80 U + 20IA)**
UNIVERSITY PRACTICAL EXAMINATION	**: Nil**
DURATION OF THEORY EXAMINATION	**: 3 hrs**
YEAR IN WHICH THE SUBJECT PAPER IS TAUGHT	**: IYEAR**

COURSE DESCRIPTION

The course is designed to assist students to acquire the knowledge of the normal biochemical functioning of human body and alterations.

OBJECTIVES

At the end of the course, the student will be able to

1. Identify the basic principles of biochemistry.
2. Synthesize the knowledge of these principles in various situations.

COURSE OUTCOMES FOR BIOCHEMISTRY

At the end of the course, students will be able to...

BIO-AHS-CO1: Correlate the integration of various aspects of biomolecules and its lab diagnosis

BIO-AHS-CO2: Explain biochemical basis and rationale of clinical laboratory tests for inborn errors of metabolism, and interpret the results.

BIO-AHS-CO3: Correlate the results of these investigations with the primary disorders of each human body system.

BIO-AHS-CO4 Follow good clinical laboratory practice as well as to handle the biological samples collected

BIO-AHS-CO5: Learn how to collect the samples and to process it for diagnostic purposes

UNIT	TITLE	THEORY + TUTORIALS (75) HOURS
I	**(i) INTRODUCTION TO BIOCHEMISTRY** • Biophysical aspects of Biochemistry: Theory of acids and bases, Ionization of acids, Dissociation of water, Hydrogen ion concentration and concept of pH, Dissociation of acids and bases, Basic concepts in Acidosis and Alkalosis (Respiratory and Metabolic) • Concept of buffering, Definition of buffers and Buffering Capacity, Chemical and Physiological buffers, Henderson Hassel Balch equation and pH – pK relationship, • Glass electrode and determination of pH, Acid Base titration. **ii) PROTEINS** • Proteins: Chemistry, Classification, properties and biomedical importance of Proteins. • Hydrolytic products of proteins • Classification of Amino acids and important properties **iii) ENZYMES** • Definitions of Catalyst, Enzymes, Apo enzyme, Coenzyme, Holoenzyme, Cofactors and prosthetic group • Active site • Systematic classification of Enzymes • Factors influencing Enzyme kinetics • Enzyme Inhibition	13
II	**i) CARBOHYDRATES** • Carbohydrates: Chemistry, Classification, properties and biomedical importance of carbohydrates. **ii) NUCLEOPROTEINS** • Nucleic Acid: Chemistry, Structure, Types and biological significant of Nucleic acids.	15
III	**LIPIDS** • Definition of Fats and Oils • Classification of Lipids • Saturated and Unsaturated Fatty acids • Properties of Lipids • Biomedical importance of Lipids with special reference to Phospho Lipids, Glycolipids and Cholesterol.	15
IV	**ENGERY METABOLISM AND NUTRITIONAL BIOCHEMISTRY** • Calorific value, Respiratory Quotient, Resting Metabolic expenditure, Specific dynamic action • Energy requirements • Complex Carbohydrates and Role of Dietary fiber • Essential Fatty acids • Essential amino acids	20

	• Positive and Negative Nitrogen balance • Protein Energy Malnutrition • Vitamins and Minerals: Sources, RDA, Biochemical function and Deficiency manifestation.	
V	**(i) CLINICAL CHEMISTRY** • Serum Osmolality: Significance and measurement • Electrophoresis: Principles, Methodology and Diagnostic significance • Principles and applications of Paper Chromatography • Simple tests to identify Carbohydrates, Lipids and Proteins in biological fluids **(ii) ENVIRONMENTALCHEMISTRY** • Definition of Pollutants • Impact of Terrestrial, Water and air pollutants • Plastics and its impacts on Society • Biomedical Waste and its management	12

TUTORIALS (30 hrs)

- Simple Color reactions of Carbohydrates and Proteins
- Qualitative estimations of Glucose, Urea, Creatinine, Total Protein and Cholesterol
- Normal constituents of Urine
- Abnormal(pathological)Urine
- Glucose Tolerance Test and its significance
- Demonstration of Electrophoresis and Interpretation of important clinical conditions based on Electrophoresis appearance
- Demonstration of Paper Chromatography and its utility in the diagnosis of inborn errors of metabolism

METHODS OF TEACHING

1. Lecture cum discussion
2. Demonstration
3. Lab visit
4. Practical work record

METHODS OF EVALUATION

1. Written Test
2. Laboratory observation Book
3. Assignments
4. Oral Presentations

REFERENCE BOOK

1. Essential of Biochemistry for B.Sc. Nursing Students Harbanslal, first edition.
2. Biochemistry U.Sathya Narayana, U.Chakrapani, fifth edition

B.Sc. ALLIED HEALTH SCIENCES – BIOCHEMISTRY (I Year) BLUE PRINT

Unit No.	Weightage	Marks Allotted	Knowledge/ Recall			Understanding			Application		
			LAQ (10)	SAQ (6)	VSAQ (3)	LAQ (10)	SAQ (6)	VSAQ (3)	LAQ (10)	SAQ (6)	VSAQ (3)
I	30 %	25		1	1	1	1				
II	20%	19	1		2			1			
III	15%	12	1*	1	2						
IV	15 %	9	1*	1*	2			1			
V	20%	15		1	1 + 1*		1	1*			

The duration of Examination (University) is Three (3) hours.
The total marks for the University Examination will be 80 marks.

Long Answer Questions : 2X 10 marks = 20 marks (Choice 2 out of 4)

Short Answer Questions : 5X 6 marks = 30 marks (Choice 5 out of 6)

Very Short Answer Questions : 10 X 3 marks = 30 marks (Choice 10 out of12)

TOTAL = Theory 80 + IA 20 =100marks

MODEL QUESTION PAPER
FIRST YEAR B.Sc. ALLIED HEALTH SCIENCES
BIOCHEMISTRY

TIME: 3 HOURS MAXIMUM MARKS:80

A. Long answer question (2 X10=20)

1. a) Write in detail about the Hetero polysaccharides and mention its importance.

   (Or)

b) How is acid base balance maintained in the body?

2. a) Define and classify Lipids with suitable examples.

   (Or)

   b) Write in detail about the RDA, dietary sources, and biochemical role and deficiency manifestations of folic acid.

B. Short answer questions -Answer any 5 questions (5X 6=30)

1. Mention dietary sources and functions of cholesterol
2. Define Chromatography & write any 4 applications
3. Classify Carbohydrates with a suitable example
4. Classify Enzymes systematically by providing one example under each class.
5. Define carcinogen and name any three agents that cause carcinogenesis.
6. List down the sources, regulation and functions of Calcium

C. Very Short answer questions –Answer any10 questions (10 x 3=30)

1. Define Respiratory quotient
2. Define buffer
3. List any two functions of trace elements.
4. List any two impacts of plastics on society
5. Mention the essential fatty acids and its importance
6. List any 2 functions of phospholipids
7. Name one test to identify plasma proteins and urea.
8. Define osmolality
9. Mention any one cardiac glycoside with its function
10. Draw a neat labeled diagram of DNA
11. Define mutarotation
12. List any two functions of Fat-soluble vitamin

GENERAL PATHOLOGY

SYLLABUS FOR I YEAR
B.Sc. ALLIED HEALTH SCIENCES – GENERAL PATHOLOGY

NAME OF THE SUBJECT PAPER : GENERAL PATHOLOGY

DURATION OF THEORY CLASSES : 75hrs

DURATION OF TUTORIAL SESSIONS : 30hrs

EXAMINATION : 100 marks (80 U + 20IA)

UNIVERSITY PRACTICAL EXAMINATION :Nil

DURATION OF THEORY EXAMINATION : 3 hrs

YEAR IN WHICH THE SUBJECT PAPER IS TAUGHT : IYEAR

COURSE DESCRIPTION

To make the student to understand pathology laboratory reports, the normal ranges of investigations, severity and specificity of disease conditions which will help him perform International Classification of diseases to clinical pertinence.

COURSE OBJECTIVES

On completion of this subject, the student will be able to:

- Differentiate between symptoms and diseases
- Understand the needs of mandatory diagnostic procedures
- Demonstrate an understanding of the pathology of common diseases
- Understand various pathology laboratory reports
- Know about the possibilities and consequences of nosocomical infections, needle prick injuries etc., in a health care facility

COURSE OUTCOMES FOR GENERAL PATHOLOGY

At the end of the course, students will be able to...

PAT-AHS-CO1: Learns the pathophysiology of disease and its causes and progression

PAT-AHS-CO2: Learns the etiologies, the pathogenesis, and the host response specific to a particular organ system

PAT-AHS-CO3: Learn about lab investigations and techniques in Hematology.

PAT-AHS-CO4: Learns to perform cross matching, coombs test, blood grouping and TTI

PAT-AHS-CO5: Learns the diagnosis of disease based on the laboratory analysis of bodily fluids

UNIT	TITLE	THEORY + TUTORIALS (75) HOURS
I	**GENERAL PATHOLOGY (12 +3 HOURS)** Basic Concepts in Cellular Adaptions • Cell injury and Cell death • Over view of Cellular adaption Basic Principles in Inflammatory Process • General features of acute and Chronic inflammation repair. • NEOPLASIA • Definition of Neoplasia • Differences between Benign and Malignant tumors • Nomenclature	15
II	**HAEMATOLOGY** **Structure and functions of Blood cells** • Objective use of anticoagulants • Mechanisms of Haemostasis • Tests to monitor Coagulation • Blood Grouping and Blood Bank (Basic aspects on Blood Components) • Basic concepts in Anemia • Basic Concepts of Leukemia	15
III	**BIOMEDICAL WASTE MANAGEMENT AND ENVIRONMENTAL PATHOLOGY** • Biomedical waste management from perspectives of Pathology • Environment and Disease – Smoking hazards, Asbestosis and Silicosis Occupational Exposure	15
IV	**CLINICAL PATHOLOGY** • Collection, transport, preservation and processing of Clinical Specimen • Clinical Pathology of specialized Body Fluids(CSF), Synovial fluid, Pleural Fluid • Urine Examination(Urinalysis)	15
V	**OVERVIEW OF SYSTEMIC PATHOLOGY** • Rheumatic Heart Disease ineffective endocarditic, atherosclerosis, IHD – Basic Concepts. • Lungs : Pneumonia, COPD, Asthma, ARDS – Basic Concepts • Gastrointestinal tract – Peptic Ulcer, Carcinoma Stomach, Carcinoma Colon –Basic Concepts. • Liver: Hepatitis, Cirrhosis, Gall Bladder –basic	15

	Concepts. • Brain Tumor. • Kidney – Renal Calculi, Hydronephrosis, renal Tumor – Basic Concepts. • FGT – Leiomyoma, Endometrial hyperplasia, Endometrial Cancer, Cervical Cancer –Basic Concepts. • FGT – Ovarian Tumor classifications – Basic Concepts. • Breast – Benign and Malignant tumors – Basic Concepts • Bone Tumors – Basic Concepts	

TUTORIALS (30 hrs.)

1. Blood Grouping and Rh typing
2. Urine Routine
3. Hb, TLC,DLC
4. Gross Specimens
5. Slides

METHODS OF TEACHING

1. Lecture cum discussion
2. Demonstration
3. Lab visit
4. Practical work record

METHODS OF EVALUATION

1. Written Test
2. Laboratory observation Book
3. Assignments
4. Oral Presentations

REFERENCE BOOK

1. Culling Histopathology techniques
2. Bancroft Histopathology techniques
3. Todd & Sanford Clinical Diagnosis by laboratory method
4. Dacie & Lewis – Practical Haematology
5. Ramanic Sood, Laboratory Technology (Methods and interpretation) 4thEd.

B.Sc. ALLIED HEALTH SCIENCES – PATHOLOGY (I Year)-BLUE PRINT

Unit No.	Unit	Weightage	Marks Allotted	Knowledge/ Recall			Understanding			Application		
				LAQ (10)	SAQ (6)	VSAQ (3)	LAQ (10)	SAQ (6)	VSAQ (3)	LAQ (10)	SAQ (6)	VSAQ (3)
I	a) BASIC CONCEPTS IN CELLULAR ADAPTIONS b) BASIC PRINCIPLES IN INFLAMATORY PROCESS c) NEOPLASIA	35%	28	2 *	2	1	-	1*	2 *	-	-	-
II	HAEMATOLOGY	26.2%	21	-	2	2	1*	-	1	-	-	-
III	BIOMEDICAL WASTE MANAGEMENT AND ENVIRONMENTAL PATHOLOGY	7.5%	6	-	-	-	-	-	2	-	-	-
IV	CLINICAL PATHOLOGY	11.3%	9	-	1	1	-	-	-	-	-	-
V	OVERVIEW OF SYSTEMIC PATHOLOGY	20%	16	1	-	-	-	-	3*	-	-	-

The Duration of Examination (University) is One and Half hours (3) hours.

The total marks for the University Examination will be 80 marks.

Long Answer Questions: 10 X2 marks = 20 marks (Choice 2 out of 4)

Short Answer Questions : 5 X 6 marks = 30 marks (Choice 5 out of 6)

Very Short Answer Questions : 10 X 3 marks = 30 marks (Choice 10 out of 12)

TOTAL = 80 marks

MODEL QUESTION PAPER
FIRST YEAR B.Sc. ALLIED HEALTH SCIENCES
GENERAL PATHOLOGY

Time: 3 Hour **Maximum Marks:80**

Illustrate your answers with suitable diagrams wherever necessary.

I. Long Answer Questions (2X10=20)

1. a.Mention the types of necrosis withexamples

(Or)

b. Describe about Myocardialinfarction

2. a.Mention the types of cellular adaptations with one example each.(or)

b. Classify leukemia.Mention general features of acute leukemia.

II. Short Answer Question (5X6 = 30)

Answer any FIVE of the following

1. Tabulate the difference between Benign and Malignanttumors
2. Define anemia. Mention types of anemia, on the basis ofEtiology.
3. Explain the mode of spread of tumors inbrief.
4. Explain granulomatous inflammation with a neat labeleddiagram
5. Describe the method of collection, transport and preservation ofCSF
6. Define Gangrene.Mention the types of gangrenes with one example each.

III. Very Short Answer Questions (10X3 = 30)

Answer any TEN of the following

1. DefineApoptosis.
2. Enumerate two colors coding for various biomedical waste disposal withexamples.
3. Define crossmatching
4. Mention two types ofNecrosis.
5. DefinePneumonia.
6. Define chronic inflammation and give 2 examples.
7. Mention three causes of Eosinophilia.
8. Mention the normal platelet count and function of platelets.
9. Mention any three adverse effects of smoking.
10. Classify bone tumors.
11. Mention 4 preservative of urine ad its indication.
12. Define hydronephrosis.

GENERAL MICROBIOLOGY

SYLLABUS FOR I YEAR
B.Sc. ALLIED HEALTH SCIENCES – GENERAL MICROBIOLOGY

NAME OF THE SUBJECT PAPER : GENERAL MICROBIOLOGY

DURATION OF THEORY CLASSES : 75 hrs

DURATION OF TUTORIAL SESSIONS : 30 hrs

UNIVERSITY EXAMINATION : 100 marks (80 U+20 IA)

UNIVERSITY PRACTICAL EXAMINATION : Nil

DURATION OF THEORY EXAMINATION : 3 hrs YEAR

IN WHICH THE SUBJECT PAPER IS TAUGHT : I YEAR

COURSE DESCRIPTION

The course is designed to assist students to acquire understanding of fundamentals of microbiology and identification of microorganisms. It also provides opportunities for practicing infection control measures in hospital setting.

COURSE OBJECTIVES

At the end of the course, the student will be able to:

1. Identify common disease producing microorganisms
2. Explain the basic principles of microbiology and their significance in health and disease. Demonstrate skill in handling specimens.
3. Explain various methods of disinfection and sterilization
4. Identify the role of the nurse in hospital infection control system.

COURSE OUTCOMES FOR GENERAL MICROBIOLOGY

At the end of the course, students will be able to...

MIC-AHS-CO1: Sterilize the articles with physical and chemical methods

MIC-AHS-CO2: Perform with suitable culture media, methods for growth of the bacteria and perform staining techniques for identification of bacteria

MIC-AHS-CO3: Learn the structure, function of immune system and immunity by its antigen- antibody reactions

MIC-AHS-CO4: Learn the how to collect & process the specimen for the diagnostic purposes **MIC-AHS-CO5**: Learn about the identification of fungal infections from clinical specimens and various antifungal agents used for the fungal infections.

MIC-AHS-CO6: Learn the laboratory diagnosis of Parasitic and Viral infections

MIC-AHS-CO7: Learn about the treatment and post exposure prophylaxis (PPE) of viral infections

UNIT	TITLE	THEORY + TUTORIALS (75 hours) HOURS
I	**GENERAL BACTERIOLOGY** • Historical introduction Classification of Microorganisms based on size, shape and structure • Anatomy & Physiology of Bacteria: Nutrition, Growth Microscopy, staining techniques & Culture media, culture methods • Sterilization (physical & chemical methods) Infection	10
II	**IMMUNOLOGY** • Immune response Immunity • Hyper sensitivity, Autoimmunity • Complement • Antigen antibody reactions	15
III	**SYSTEMATIC BACTERIOLOGY** • Introduction: Collection transport & processing of bacteriological clinical specimen in general Pyogenic cocci • Spore baring bacilli Clostridium +Bacillus Enterobacteriaceae- E. coli, Klebsiella, Salmonella, Shigella Vibrio, Pseudomonas **MYCOLOGY** • Introduction, classification of fungi, laboratory diagnosis in general • Fungi of medical importance-Opportunistic fungi	15
IV	**BASICS OF PARASITOLOGY** • Introduction to Parasitology, Classification, Protozoa-I – Entamoeba histolytica • Protozoa-II, Plasmodium spp. • Cestodes: general, T. solium & T. saginata, E. granulosus Nematodes: Introduction & Classification • Intestinal -Ascaris, Ancylostoma, Strongyloidiasis • Tissue-W. bancrofti	15
V	**VIROLOGY** • Classification & General properties of Viruses, Virus Host interactions & Lab diagnosis in general • DNA Viruses : Pox viruses & Adenoviruses, Herpes viruses Hepatitis virus, HIV • Rabies , Polio, Arbo viruses common in India – Dengue, • Chickenkuniya , Japanese encephalitis, KFD	15
VI	**HOSPITAL INFECTION AND CONTROL** • Causative agents and methods of transmission Systematic investigation of hospital infection Prevention and control of Hospital infections • Environmental Hazards resulting from biomedical waste and preventive measures. • Recent advances in Diagnostic Microbiology	5

Tutorials (30 hrs.)

- Introduction & visit to microbiology lab + Morphology of bacteria + Identification of bacteria (Culture plates & Basic biochemical reactions)
- Gram stain, Acid fast Stain
- Spotters , Instruments, Culture media inoculated &un inoculated
- Applied Immunology(Bacterial)
- Serological tests – CRP, ASO, RPR, Widal Applied Immunology (Virology) Serological tests: HIV, HBsAg(Rapid Tests)
- Stool Examination for eggs + Parasitology specimens

METHODS OF TEACHING

1. Lecture cum discussion
2. Demonstration
3. Lab visit
4. Practical work record

METHODS OF EVALUATION

1. Written Test
2. Laboratory Observation Book
3. Assignments
4. Oral Presentations

REFERENCE BOOKS

1. Ananthnarayan R: Textbook of Microbiology. (2017)
2. Pommerville J. C: Fundamentals of Microbiology. Jones and Bartlett learning (2013)
3. Apurba Sastry, Sandhya Bhat. Essentials of Microbiology.
4. Text book of Concise Microbiology by C.P.Baveja, Latest edition
5. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7127505/

BLUE PRINT - B.Sc ALLIED HEALTH SCIENCES –GENERAL MICROBIOLOGY (I Year)

Unit No.	Unit	Weightage (%)	Marks Allotted	Knowledge/ Recall			Understanding			Application		
				LAQ (10)	SAQ (6)	VSA Q (3)	LAQ (10)	SAQ (6)	VSAQ (3)	LAQ (10)	SAQ (6)	VSAQ (3)
I	GENERAL BACTERIOLOGY	15	12	1*		1		1				1
II	BASICS OF IMMUNOLOGY	20	16	1		1*		1	1*			
III	SYSTEMATIC BACTERIOLOGY	27.5	22			1	1		1		1	
IV	BASICS OF PARASITOLOGY& MYCOLOGY	15	12			1		1				1
V	VIROLOGY	15	12		1		1*		1			1
VI	HOSPITAL INFECTION AND CONTROL	7.5	6		1*				1			1
	TOTAL	100	80									

The duration of Examination (University) is One and Half (3)hours.

The total marks for the University Examination will be 80marks.

LongAnswerQuestions : 2 X10mark = 20 marks (Choice 2 out of 4)

ShortAnswerQuestions : 5 X 6marks = 30 marks (Choice 5 out of 6)

Very ShortAnswer Questions : 10 X3 marks = 30marks (Choice 10 out of 12)

TOTAL = 80marks

MODEL QUESTION PAPER

FIRST YEAR B.Sc ALLIED HEALTH SCIENCES

CT-05 GENERAL MICROBIOLOGY

Time: 3 Hours **Maximum Marks: 80**

Illustrate your answers with suitable diagrams wherever necessary,

A. Long answer questions (2 X 10 =20)

1. a)Describethecommonlyusedchemicaldisinfectantsandtheirapplicationsinthe hospital. (OR)
   b) Classify Mycobacterium.Give an account on pathogenesis and laboratorydiagnosis of pulmonary tuberculosis. Add a note on BCGvaccine.
2. a)What is hypersensitivity? Classify hypersensitivity reactions? Describe in detail about type I reactions.(OR)
   b) Describe the laboratory diagnosis and prophylaxis of poliomyelitis.

II. Short answer questions -Answer any 5 questions marks (5 X 6=30)

1. Define immunity. Describe acquiredimmunity.
2. Types of HAI & mention the causative agents.
3. Name the UTI cause bacteria. How to collect urine & laboratory diagnosis of*E.coli*.
4. Lifecycle of malaria parasite inhuman.
5. Write about Modes of transmission ofHIV.
6. What are culture media? Classify and discuss them in brief

III.Very Short answer questions -Answer any10 questions (10 x3 =30)

1. Mention different color coded bags for biological waste management used in hospital with the viruses.
2. Prophylaxis of hepatitisB.
3. List FOUR bacteria causing woundinfection.
4. Name the opportunistic fungi.
5. Name four arboviral diseases common inIndia.
6. Write four functions of bacterial cell wall
7. What is an agar? write its role in preparation of media.
8. Define autoimmunity.
9. Write two uses of ELISA.
10. Non –gonococcal urethritis (NGU).
11. Black water fever.
12. What is germ tube test.

I YEAR ELECTIVE COURSES

SYLLABUS FOR I YEAR
B.Sc. ALLIED HEALTH SCIENCES
ABILITY ENHANCEMENT COMPULSORY COURSE (AECC) - ENGLISH

NAME OF THE SUBJECT PAPER	**: ENGLISH**
DURATION OF THEORY CLASSES	**: 15hrs**
DURATION OF PRACTICAL SESSIONS	**: 30hrs**
EXAMINATION	**: 100 marks (80 U + 20 IA)**
NO UNIVERSITY PRACTICAL EXAMINATION	
DURATION OF THEORY EXAMINATION	**: 1 ½ hrs**
YEAR IN WHICH THE SUBJECT PAPER IS TAUGHT	**: I YEAR**

COURSE OUTCOMES FORENGLISH

ENG-CO1: Speak and write grammatically correct sentences in English

ENG-CO2: Develop effective writing skills needed for clinical task

ENG-CO3: Build fluency in English needed for clinical tasks

SYLLABUS
(THEORY& PRACTICALS = 16 +34 Hours)

COURSE DESCRIPTION

This course is designed to build spoken and written English competency of the students needed to function effectively in academic setup.

OBJECTIVES

On completion of this subject, the student will be able to:

1. Speak and write grammatically correct sentences in English.
2. Develop effective writing skills.
3. Build fluency in English

UNIT: I GRAMMAR

1. Remedial Grammar : Parts of speech; Types of sentences, question tags
2. Modal verbs;
3. Tenses
4. Concordance

UNIT: II VOCABULARY

1. Word formation – prefixes and suffixes
2. Medical terminology
3. Words often misused or confused
4. Idioms and phrases

UNIT: III WRITING SKILLS

1. Letter writing - permission, leave and other official letters
2. Note making methods
3. Jumbled sentences -cohesion
4. Paragraph Writing

UNIT: IV SPOKEN COMMUNICATION

1. Pronunciation of commonly mispronounced words
2. Day today conversation
3. Telephonic conversations
4. Group Discussions

UNIT: V LISTENING AND READING SKILLS

1. General Listening and reading comprehension

Textbook Recommended

1. Effective English Communication by Krishna Mohan and Meenakshi Raman, Tata McGraw – Hill Publishing Company Limited, New Delhi.
2. English for Colleges and Competitive Exams by Dr. R. Dyvadatham, Emerald Publishers.

SYLLABUS FOR I YEAR
B.Sc. ALLIED HEALTH SCIENCES
SKILL BASED ELECTIVE COURSE (SBEC) – CULINARY SKILLS FOR OPTIMAL NUTRITION

NAME OF THE SUBJECT PAPER : CULINARY SKILLS FOR OPTIMAL NUTRITION

DURATION OF THEORY CLASSES : 15 Hrs

DURATION OF PRACTICAL SESSIONS : 30 Hrs

PRACTICAL EXAMINATION : 50 Marks (40 U + 10 IA)

NO UNIVERSITY THEORY EXAMINATION

DURATION OF EXAMINATION : 1 ½ Hrs

YEAR IN WHICH THE SUBJECT PAPER IS TAUGHT: I YEAR

COURSE OUTCOMES

NUTRI-CO1: Understand the basic food groups, their nutrient composition and function for balanced healthy diet for people of all ages & patients on dietary management for healthy life.

THEORY & PRACTICALS (DURATION 16 + 32 Hours)

UNIT-I INTRODUCTION TO FOODS AND NUTRITION

- Food-Definition of foods, nutrition and nutrients characteristics of good health
- Relation of nutrition to good health-optimal nutrition, malnutrition and over nutrition
- Classification of foods based on major nutrient content
- Food selection-factor responsible for food selection

UNIT-II FOODS GROUPS

- Basic four and five food groups-cereals, millets pulses, fruits and vegetables, fats and oils, sugar and jaggery.
- Foods and nutrients, Functions of food- energy yielding, body building and protective foods, balanced diet, vegetarian and non-vegetarian foods
- Functional Foods-Dietary supplements
- Food Adulterations-Common adulterants and method of identification, nutrition labeling and food standards

UNIT-III METHODS OF COOKING, PRESERVATION AND SENSORY EVALUATION

- Principles and techniques of sensory evaluation, Interpretation tools
- Cooking methods-moist heat, dry heat advantages and disadvantages, changes during cooking, nutrient preservation while cooking
- Preservation techniques advantages and disadvantages

UNIT-IV NUTRITIONAL REQUIREMENTS AND MEAL PLANNING

- Basic nutritional requirements through different stages of life cycle, basic principles of meal planning, revisiting concept of balanced diet.

PRACTICALS

- Introduction to cutlery and crockery
- Introduction to weights and measures
- Art of table setting
- Market survey on food labeling
- Preparation of few commonly consumed cereal preparation
- Preparation of few commonly consumed pulse dishes
- Vegetable cooking without nutrient loss
- Preparation and display of fruits salads
- A day‘s menu for an adult sedentary worker
- A day‘s menu for an 8-month old infant
- Nutritious snacks for pre schooler
- Nutritious lunch for school going boys and girl
- Consistency modified menu for an 80-year-old
- Simple test to identify food adulteration
- Sensory evaluation of prepared items

METHODS OF TEACHING

1. Lecture cum discussion
2. Demonstration
3. Lab visit
4. Practical work record

METHODS OF EVALUATION

1. Written Test
2. Laboratory observation Book
3. Assignments
4. Oral Presentations

Reference book

1. Srilaksmi.B. : Food science; seventh edition(2012)
2. Jacqueline B .Marcus :Culinary Nutrition: The science and practice of healthy cooking:(2014)

SYLLABUS FOR I YEAR
B.Sc. ALLIED HEALTH SCIENCES
SKILL BASED ELECTIVE COURSE (SBEC) – ENHANCING SOFT SKILL & PERSONALITY

NAME OF THE SUBJECT PAPER : Enhancing soft skill & personality

DURATION OF THEORY CLASSES : 15Hrs

DURATION OF PRACTICAL SESSIONS : 30Hrs

PRACTICAL EXAMINATION : 50 Marks (40 U + 10 IA)

NO UNIVERSITY THEORY EXAMINATION

DURATION OF EXAMINATION : 1 ½ Hrs.

YEAR : I YEAR

COURSE OUTCOMES

ESSP-CO1: Foster healthy attitude and develop effective inter and intra personal skills to be an effective team worker in both academic and professional setup.

LEARNING OBJECTIVES

This course is designed to equip the students with essential soft skills needed for workplace and improve personality.

SYLLABUS

UNIT: I ASPECTS OF COMMUNICATION

1. Importance of communication, Process, Barriers
2. Nonverbal Communication

UNIT: II SPEAKING

1. Opening and Closing conversations
2. Introductions and Address Systems
3. Expressing Courtesy
4. Giving Compliments and replying to Compliments
5. Presentation Skills
6. Telephonic conversation and telephone etiquette

UNIT – III PRESCRIBED READING

1. White washing the Fence – Episode from Tom Sawyer by Mark Twain
2. Bacon's Essays: - Of Goodness and goodness of nature

UNIT – IV WRITING

1. Letter writing - Letter of Complaints, Inviting and Declining an invitation
2. Memos and Email
3. Editing- Grammar, Spelling & Punctuation, Use of Dictionary &Thesaurus.

UNIT – V SOFT SKILLS

1. Active Listening Skills
2. Assertive Skills
3. Negotiation and Persuasive Skills
4. Interview Skills

Reference Books

1. Communication Skills for Engineers and Scientists by Sangeeta Sharma and Binod Mishra, PHI Learning Private Limited, New Delhi.
2. English and soft skills by S.P. Dhanavel, Orient Black Swan
3. Effective English Communication by Krishna Mohan and Meenakshi Raman, Tata McGraw –Hill Publishing Company Limited.
4. Technical Communication – Principles and Practice, by Meenakshi Raman and Sangeetha Sharma, II edition, Oxford University Press.

Learning Outcome

This course is designed to help the students to

- Foster healthy attitude.
- Develop effective inter and intra personal skills to be an effective team worker.
- Communicate effectively in both academic and professional setup

SYLLABUS FOR I YEAR B.Sc. ALLIED HEALTH SCIENCES

SKILL BASED ELECTIVE COURSE (SBEC) – SPEAKING EFFECTIVELY

NAME OF THE SUBJECT PAPER : SPEAKING EFFECTIVELY

DURATION OF THEORY CLASSES : 15Hrs

DURATION OF PRACTICAL SESSIONS : 30Hrs

PRACTICAL EXAMINATION : 50 Marks (40 U +

10 IA) NO UNIVERSITY THEORY EXAMINATION

DURATION OF EXAMINATION : 1 ½ Hrs.

YEAR IN WHICH THE SUBJECT PAPER IS TAUGHT: I YEAR

COURSE OUTCOMES

SPEAK-CO1: Speak and write grammatically correct sentences in English and Build fluency in English needed for clinical tasks.

LEARNING OBJECTIVES

- Advance the students intellectual curiosity, competency and skills in preparation for employment
- Develop critical thinking, creativity and effective communication

SYLLABUS

1. Communication Skills

- Importance of Communication skills in public health; Communication process; Methods of communication; Types of communication: Verbal and Non-verbal; Impediments to effective communication; Feedback

2. Oral Presentation Skills

- Preparation and planning; Structure; Audio-visual aids; Creating interest and establishing a relationship with the audience; Body language; Voice and pronunciation; Review

3. Writing skills

- Writing a scientific paper; Writing a proposal; Structure of an article; References and literature review; Peer-review process-Publication bias; International guidelines for publication in journals; Professional Ethics

4. Leadership in Public health

- Leadership styles and trait; Motivation skills; Interpersonal communication skills; Problem solving skills; Decision making skills; Management skills; Communication Skills

5. **Manuscript writing**
    - Writing introduction, objectives, methodologies, major finding, discussion, conclusion and recommendation
6. **Seminar presentations**
    - Use of computers present data and information on recent topics

LEARNING OUTCOMES

At the completion of the course, the students will-

- Develop good written and oral communication abilities
- Develop an understanding of team building and leadership skills
- Develop knowledge regarding capacities needed to work independently within diverse work environments

TEXT BOOKS

1. Professional Writing Skills, A self-paced training Programme by Janis Fisher Chan and Diane Lutovich.
2. Speaking Your Mind: Oral Presentation and Seminar Skills By Rebecca Stott, Tory Young, Cordelia Bryan Contributor Rebecca Stott, Tory Young, Cordelia Bryan.

SYLLABUS FOR I YEAR
B.Sc. ALLIED HEALTH SCIENCES
SKILL BASED ELECTIVE COURSE (SBEC) – BASICS OF YOGA AND PRACTICE

NAME OF THE SUBJECT PAPER : BASICS OF YOGA AND PRACTICE

DURATION OF THEORY CLASSES : 15Hrs

DURATION OF PRACTICAL SESSIONS : 30Hrs

PRACTICAL EXAMINATION : 50 Marks (40 U + 10 IA)

NO UNIVERSITY THEORY EXAMINATION

DURATION OF EXAMINATION : 1 ½ Hrs

YEAR IN WHICH THE SUBJECT PAPER IS TAUGHT: I YEAR

SYLLABUS & COURSE OUTCOMES FOR BASICS OF YOGA & PRACTICE (YOGA)

YOGA CO1: Understand the respiratory system, types of breathing and benefits of meditation.

Unit	TIME(HRS)	CONTENT
1	1	Introduction to Yoga philosophy, psychology and lifestyle
2	1	A brief outline of the history of Yoga.
3	1	Cultivation of correct psychological attitudes
4	1	Asanas : Definition, Types, scope and limitations of Asanas
5	1	Pranayamas and their significance in Yogic curriculum, Types & phases of Pranayama.
6	1	Dharna and Dhyana as the keys to unlocking human potential.
7	1	Study of various aspects of Yoga: Kriyas, Bandhas, Mudras
8	1	Yoga defined as ―Integration‖ and ―Harmony‖
9	1	Meaning of the term ―Positive Health‖
10	1	Yoga, a tool to restore homeostasis
11	1	Integration of Yoga into Health Professions Education
12	1	Order of teaching the Yogic practices; Do‘s and Dont‘s of specific Yoga techniques.
13	2	Applied aspects of Yoga in various human activities like therapeutics, education and sports
14	2	Introduction to yogic concept of health and disease

Unit 15: Introduction to Yogic techniques: Methods and practices (32 hours)
Asanas (26 hrs):

- Aruna Surya Namaskar
- Ardha – Padmasana/Padmasana
- ArdhakatiChakrasana
- PadaHasta
- PavanaMuktasana
- Trikona
- Navasana
- Ardha –Shalabhasana
- Shalabhasana
- Makarasana
- Bhujangasana
- Dhanurasana
- Vakrasana
- Vrikshasana
- Ushtrasana
- Gomukasana
- Yoga Mudra.
- Natarajasana
- Chakra sana
- Sarvangasana
- Matsyasana
- Halasana
- Shavasana

Pranayama (6 hrs)

- Vibhaga Pranayama
- Pranava Pranayama
- Savitri Pranayama
- Chandra and SuryaNadi Pranayama
- Nadi–Shuddhi
- Sheetali and Sitkari

TEXT BOOKS

- Dayanidy G and Bhavanani AB. CYTER Practical Book. Pondicherry, India: Dhivyananda Creations;2016.
- A primer of Yoga Theory – Dr Ananda Balayogi Bhavanani, Dhivyananda Creations,Pondicherry-13
- Fundamentals of Yoga History- Compilation by Meena Ramanathan
- Basic Hatha Yoga lessons (Tamil) – Dr Ananda Balayogi and Meena Ramanathan, Puducherry

BOOKS RECOMMENDED FOR STUDIES AND REFERENCE

1. A yogic approach to stress-Dr Ananda Balayogi Bhavanani, Ananda Ashram, Pondicherry
2. Asana, Pranayama, Mudra and Bandha. Swami Satyananda, Bihar School of Yoga,Monger
3. ASANAS : WHY? AND HOW? – byShri. O.P. Tiwari.Kaivalyadhama,Lonavla.
4. Hatha Yoga practices of the Gitananda tradition by Dr Ananda Balayogi Bhavanani
5. Ramanathan Meena. Applied Yoga: Applications of Yoga in Different Fields of Human Activities. 3rdEd; Pondicherry, India: Sri BalajiVidyapeeth;2018
6. PRANAYAMA – by Swami Kuvalayananda. Kaivalyadhama, Lonavla.
7. Yoga and sports- Swami Gitananda and Meenakshi Devi, Ananda Ashram, Pondicherry.

SYLLABUS FOR I YEAR

B.Sc. ALLIED HEALTH SCIENCES

GENERIC ELECTIVE COURSE (GEC) – BASICS OF HOSPITAL ADMINISTRATION

NAME OF THE SUBJECT PAPER : BASICS OF HOSPITAL ADMINISTRATION

DURATION OF THEORY CLASSES : 60Hrs

THEORY EXAMINATION : 50 Marks (40 U + IA)

NO UNIVERSITY PRACTICAL EXAMINATION

DURATION OF THEORY EXAMINATION : 1 ½ HRS

YEAR IN WHICH THE SUBJECT PAPER IS TAUGHT : I YEAR

COURSE OUTCOMES

HSM CO1: To familiarizes students with the basics concepts, policies of hospital management regarding the occupational safety, organizational behavior & quality management.

COURSE OBJECTIVES

- To provide orientation about the hospital functions
- To familiarize students with the basics concepts of hospital management

THEORY (DURATION 64 Hours)

UNIT: I ORGANISATION OF A HOSPITAL AND ITS DEPARTMENTS

1. Organogram
2. Vision, Mission &Values, Logo
3. Patient Service Points – Clinical & Non-Clinical (OPD ‘s, A&E, MHC, Wards, ICU‘s, OT‘s, etc.)
4. Scope of Services (Medical &Supportive Services)

UNIT: II HOSPITAL POLICIES & PROCEDURES

1. Registration Process
2. OP/IP Billing
3. Admission Process
4. Discharge Process
5. Financial counseling
6. Visitors Policy
7. Feedback forms.

UNIT: III MEDICAL RECORS MANAGEMENT/LEGAL ASPECTS

1. Types of Medico legal cases
2. SOP ‘s for handling MLC

3. Medical Records -Forms, consents, registers used in hospitals

UNIT: IV QUALITY MANAGEMENT

1. Quality – Brief Introduction
2. Code of Conduct for health care professionals
3. Patient rights &responsibilities
4. Incident Reporting
5. Quality indicators
6. List of Licenses to be obtained to run a Hospital College
7. Accreditation–ISO/NABH/JCI

UNIT: VOCCUPATIONAL SAFETY

1. Biomedical Waste Management
2. Hospital Spill Management
3. Usage of PPE
4. Emergency Codes
5. Fire Safety Management
6. Hospital Infection Control

UNIT: VI ORGANISATIONAL BEHAVIOUR

1. Communication with patients/health care professionals
2. Grooming standards
3. Time Management
4. Grievance Handling, Interdisciplinary Committee
5. Leadership

LEARNING OUTCOMES

Students will have an overview of hospital functions, processes and patient management.

SYLLABUS FOR I YEAR B.Sc. ALLIED HEALTH SCIENCES

GENERIC ELECTIVE COURSE (GEC) – COUNSELING AND GUIDANCE

NAME OF THE SUBJECT PAPER : COUNSELING AND GUIDANCE

DURATION OF THEORY CLASSES : 60Hrs.

EXAMINATION : 50 Marks (40 U +10IA)

NO UNIVERSITY PRACTICAL EXAMINATION

DURATION OF THEORY EXAMINATION

: 1 ½ Hrs. YEAR IN WHICH THE SUBJECT PAPER IS

TAUGHT

: I YEAR

COURSE OUTCOMES

CG CO1: To assess a person's needs and understand their personal characteristics that will help in personal growth, wellbeing and improving their relationships with others.

LEARNING OBJECTIVES

- To understand theoretical foundations of counseling psychology
- To examine briefly the major perspectives of Counselling and to apply based on the client's needs
- To assess ones own needs and motivations and personal characteristics thatwill help in personal growth and wellbeing.
- To understand basic counseling skills as practiced by an effective counsellor.
- To discuss special settings and populations where Counselling could be effectively used.
- To explore ethical and legal issues for the practice of counseling profession.

UNIT I: Introduction and definition of Counselling and Guidance, Counsellor Preparation, Qualifications, Qualities, Legal and Professional ethics

UNIT- II: Different approaches to counselling, goals in counselling, role and functions of the counsellor.

UNIT- III:
Micro skills in Counselling- relationship building strategies and methods: Opening techniques, attending skills- verbal and non-verbal communication, listening skills: Open questions and closed questions, Encouragement, Paraphrasing, Reflection, Summarization, influencing skills-Reframing, genuineness, and Self-disclosure.

UNIT-IV:
Macro skills in Counselling, empathy, advanced empathy, Confrontation & challenging, Resistance, transference, and counter-transference.

UNIT-V: Counselling situations and Counselling across life-span.

Learning Outcome: At the end of this course, the students will be able to: Demonstrate basic knowledge in counseling (concepts, theories, ethical issues, basic skills, etc.)

SYLLABUS FOR I YEAR B.Sc. ALLIED HEALTH SCIENCES

GENERIC ELECTIVE COURSE (GEC) – LIFESTYLE DISORDERS

NAME OF THE SUBJECT PAPER : LIFESTYLE DISORDERS

DURATION OF THEORY CLASSES : 60Hrs

EXAMINATION : 50 Marks (40 U +10IA)

NO UNIVERSITY PRACTICAL EXAMINATION

DURATION OF THEORY EXAMINATION : 1

½ Hrs.

YEAR IN WHICH THE SUBJECT PAPER IS TAUGHT : I YEAR

COURSE OUTCOMES

LD CO1: To understand the relevance, significance, and implications of lifestyle disorders for the betterment of human life quality.

THEORY (64 Hours)

UNIT I Modern Life style disorders

Desk bound and sleeping habits, junk food, anxiety. Food poisoning, Acidity.

UNIT II Dietary disorders

Food groups and concept of a balanced diet, obesity, metabolic syndrome, hypertension- their causes and prevention through dietary and lifestyle modifications

UNIT III Social health problems

Smoking, alcoholism, drug dependence and Acquired Immune Deficiency Syndrome (AIDS).

UNIT IV Gastrointestinal disorders

Stomach disorders-Gastritis, Ulcer, Amoebiasis, Constipation, piles
Common ailment- cold, cough, fevers, diarrhea, constipation- their causes and dietary

LEARNING OUTCOMES

To understand the relevance, significance, and implications of lifestyle disorders for the betterment of human life quality

Text Books

1. Text book of Clinical Biochemistry-Carl.A. Burtis and EdwardR.Ashwood
2. Text Book of Medical Biochemistry–Dr.M.N.Chatterjee and Rane Shinde

Reference Books

1. P. Singh MD. Textbook of Nutrition and Health; First Ed; 2008; Academic Excellence Biochemistry with Clinical Correlation- Thomas M.Devl

II YEAR

B.Sc – DIABETIC CARE TECHNOLOGY
FACULTY OF ALLIED HEALTH SCIENCES
SRI BALAJI VIDYAPEETH
(Deemed to be University)
Accredited by NAAC with 'A++' Grade

II- YEAR

CORE SUBJECTS

1. Basic Sciences & Basics of Diabetes
2. Pathophysiology & Long Term Complications of Diabetes
3. Diabetic and Pre-diabetic patient treatment plan

ELECTIVES

Ability Enhancement compulsory course (AECC)

1. Environmental studies

Skill enhancement course (SEC) – Choose any TWO

1. Good Clinical Laboratory practice
2. Computer Applications
3. Library and E-resource
4. Public Health and Hygiene

Generic Elective Course (GEC) – Choose any ONE

1. Basic Psychology
2. Sociology
3. Entrepreneurship essentials

AHS Course Content Second year B.Sc. Diabetic Care Technology

Faculty code	Category	Course title		Hours				Credits				
AHS	Core theory MLT	Subjects	Theory	Practical	Tutorials	Clinical training	Total hours	Lecture	Practical	Tutorials	Clinical training	Total credits
AHS	DCT -6	Basic Sciences & Basics of Diabetes	75		30		105	5		1		6
AHS	DCT -7	Pathophysiology & Long-Term Complications of Diabetes	60	60			120	4	2			6
AHS	DCT -8	Diabetic and Pre-diabetic patient treatment plan	60	60			120	4	2			6
AHS	DCT-CT 1	Clinical Training MLT 5 to 7				360	360				12	12
AHS	AECC	Environmental Science	15	30			45	1	1			2
AHS	SEC – 1-3	Student ‘s choice	15	30			45	1	1			2
AHS	SEC – 1-3	Student ‘s choice	15	30			45	1	1			2
AHS	GEC - 1-3	Student ‘s choice	60				60	4				4
			300	**210**	**30**	**360**	**900**	**20**	**7**	**1**	**12**	**40**

SCHEME OF EXAMINATION

Papers	Subject	Theory		Practical		Theory	Practical	Grand Total 1000	Min Marks to Pass % (500)
		UE	IA	UE	IA	UIA*	UIA*		
DCT -6	Basic Sciences & Basics of Diabetes	80	20					100	50
DCT -7	Pathophysiology & Long Term Complications of Diabetes	80	20	80	20			200	100
DCT -8	Diabetic and Pre-diabetic patient treatment plan	80	20	80	20			200	100
DCT-CT 1	Clinical Training MLT 6 to 8						100	100	50
AECC	Ability enhancement Compulsory Course – Environmental Science	80	20					100	50
SEC	Skill enhancement Course	80	20					100	50
SEC	Skill enhancement Course	80	20					100	50
GEC	Generic elective	80	20					100	50

For all elective course, 40 marks for university theory and Practical cum Viva examination & 10 marks as Internal Assessment = 50 marks which will be converted to 100 marks in the transcript.

Basic Sciences & Basics of Diabetes

PAPER DCT -6: BASIC SCIENCE & BASICS OF DIABETICS

DURATION OF THEORY CLASSES : 75 HRS

DURATION OF TUTORIALS CLASSES : 30 HRS

UNIVERSITY THEORY EXAMINATION : 100 MARKS (80 U + 20 IA)

UNIVERSITY PRACTICAL EXAMINATION : NIL

DURATION OF THEORY EXAMINATION : 3 HRS

YEAR IN WHICH SUBJECT PAPER IS TAUGHT : II YEAR

COURSE OUTCOMES

- CO1: Thorough knowledge of different types of Diabetes and its complications
- CO2: Gets awareness of importance of prevention of diabetes complications
- CO2: Gets clear awareness of the symptoms of the disease COURSE CONTENT

UNIT	TITLE	THEORY 75 HOURS
I	**BASIC SCIENCES** **Role of educator** • To understand that educators are a part of a team, which includes the person with diabetes at its centre, and that their role is to work with other team members to improve people's self-care ability,health and quality of life.	10
II	**Team management** • To understand how the needs of people with diabetes can be met with an interdisciplinary care approach and the roles of the health professionals involved in providing diabetes care. To emphasize the blended and overlapping nature of roles in a fully integrated team. **Psychosocial and behavioral approaches** • To highlight the impact of diabetes, and the psychosocial needs of people with diabetes and their family. To provide knowledge and skills to enhance the psychological well-being and diabetes self-management of people with the condition using a patient-centered approach. To encompass behavioral approaches, and emotional support in self-management education.	20
III	**BASICS OF DIABETES** **History of Diabetes** • Introduction to diabetes Definition & Meaning Types of diabetes Statistics: International, National, State level, District level	15

IV	**Anatomy & Physiology of Pancreas** • Microscopic anatomy of pancreas Genetics Secretion of Insulin, Glucogen & Somatostatin Functions & Utilization of insulin, glucogen & somatostatin Normal metabolism of carbohydrates, fats, proteins Types of carbohydrates, fats, proteins, Biochemistry of carbohydrates, fats, proteins, Energy conversion, Storage in the body, End products	15
V	**Pathological changes** • Pathological changes in pancreas, beta cells, alpha cells Pathological changes in metabolism Path physiology of diabetes • Pathological Changes in Other System Eye, CVS, Neuropathy, Nephropathy & Micro vascular • Diagnosis and routine investigation Timely reviews Types & classification of DM	15

BLUE PRINT- Basic Science & Basics of Diabetics

Unit No.	Unit	Weightage (%)	Marks Allotted	LAQ (10)	SAQ (6)	VSA Q (3)
I	**BASIC SCIENCES** Role of educator	15	12	1*	1	2
II	Team management	16.25	13	1		1(1*)
	Psychosocial and behavioral approaches	15	12		1(1*)	2
III	**BASICS OF DIABETES** History of Diabetes	15	12		1	2
IV	Anatomy & Physiological changes	23.75	19	1	1	1(1*)
V	Pathological changes	15	12	1*	1	2
	TOTAL	**100**	**80**			

The duration of Examination (University) is One and Half (3 hours.

The total marks for the University Examination will be 80marks.

Long Answer Questions : 2 X10mark = 20 marks (Choice 2 out of 4)

Short Answer Question : 5 X 6marks= 30 marks (Choice 5 out of 6)

Very Short Answer Questions : 10 X3 marks = 30marks (Choice 10 out of 12)

TOTAL = 80marks

Pathophysiology & Long-Term Complications of Diabetes

PAPER DCT-7 Pathophysiology & Long-Term Complications of Diabetes

DURATION OF THEORY CLASSES : 60 HRS

DURATION OF PRACTICAL SESSIONS : 60 HRS

UNIVERSITY THEORY EXAMINATION : 100 MARKS (80 U + 20 IA)

UNIVERSITY PRACTICAL EXAMINATION : 100 Marks

DURATION OF THEORY EXAMINATION : 3 HRS YEAR

IN WHICH SUBJECT PAPER IS TAUGHT : II YEAR

COURSE OUTCOMES

At the end of the course, students will be able to...

- CO1: They will get an idea of the importance of the role of Diabetes Educator
- CO2: They will get an idea of the importance of team work for Diabetes management
- CO3: They will get a thorough knowledge on normal matabolism of Carbohydrates, Proteins and fats
- CO4: They will get an introudction about different types of carbohydrates, fats, proteins and biochemistry of the sameCOURSE CONTENT

UNIT	TITLE	THEORY 60 HOURS
I	**Introduction** Epidemiology: Definition, scope and uses of epidemiology, measuring disease frequency (prevalence, incidence rate),Epidemiology and prevention of chronic diseases, different levels of prevention (primodial, primary, secondary and tertiary) Typesof studies and study design (qualitative and quantitative designs), Biostatistics – basic concepts (Mean, Median and Mode, Normal distribution)	10
II	**Public Health Problems** Identifying individuals at high risk for type 2 Diabetes,Evidence for type 2 Diabetes prevention. The Community and health care facility.	20
III	**Quality of care** Health outcome include treatment of glycemic control, lipid levels, blood pressure, frequency of self-monitoring of blood glucose. Patients centered outcomes includes patient satisfaction, wellbeing and quality of life.	15
IV	**Pathophysiology of Diabetes** • Types and causes, Disease process, Diagnostic criteria, Screening for Diabetes – why, when and how? (Urine sugar and blood sugar), • Continuum of care (primary, secondary, tertiary, prevention)	15

V	**Long term complications** • Macro vascular complication: It includes coronary artery disease, cerebral vascular and peripheral vascular disease – type, risk factors and intervention strategies. • Micro vascular complication: Diabetes Eye disease, Neuropathy, Nephropathy – • Disease stage, diagnosis and treatment. Other complications (foot, skin, gastrointestinal disorders, endocrine disease, psychological factors, etc.)	15

METHODS OF TEACHING

1. Lecture cum discussion
2. Demonstration
3. Lab visit
4. Practical work record

METHODS OF EVALUATION

1. Written Test
2. Laboratory observation Book
3. Assignments
4. Oral Presentations

BLUE PRINT- Basic Science & Basics of Diabetics

Unit No.	Unit	Weightage (%)	Marks Allotted	LAQ (10)	SAQ (6)	VSA Q (3)
I	Introduction	16.25	13	1		1(1*)
II	Public Health Problems	15	12	1*	1	2
III	Quality of care	15	12		1	2
IV	Pathophysiology of Diabetes	15	12	1*	1	2
V	Long term complications	23.75	13	1	1	1(1*)
	TOTAL	**100**	**80**			

The duration of Examination (University) is One and Half (3 hours.

The total marks for the University Examination will be 80marks.

Long Answer Questions : 2 X10mark = 20 marks (Choice 2 out of 4)

Short Answer Question : 5 X 6marks= 30 marks (Choice 5 out of 6)

Very Short Answer Questions : 10 X3 marks = 30marks (Choice 10 out of 12)

TOTAL = 80marks

Diabetic and Pre-diabetic patient treatment plan

Paper- DCT-8: Diabetic and Pre-diabetic patient treatment plan

DURATION OF THEORY CLASSES : 60 HRS DURATION OF
PRACTICAL SESSIONS : 60 HRS
UNIVERSITY THEORY EXAMINATION : 100 MARKS (80 U + 20
IA) UNIVERSITY PRACTICAL EXAMINATION : 100 MARKS
DURATION OF THEORY EXAMINATION : 3 HRS
YEAR IN WHICH SUBJECT PAPER IS TAUGHT : II YEAR

COURSE OUTCOMES

CTO1: To understand normal pathophysiology and the defects that lead to abnormal glucose metabolism

CTO2: The knowledge of the different metabolic disorders of glucose metabolism, their pathogenesis, their clinical characteristics and diagnostic criteria

CTO3: To understand the different types of evaluation and when they are best used

CTO4: To discuss the concept of continuous quality improvement (CQI), how measures can be integrated into day-to-day practice and the benefits to be derived and various investigations methods for the diagnosis of diabetes

CTO5: To describe the importance of monitoring the fasting and post prandial blood sugar

COURSE CONTENT

UNIT	TITLE	THEORY 60 HOURS
I	**Diagnosis, classification and presentation of diabetes** ○ Diabetes mellitus and use of glucometer ○ Disorders of glycaemia: impaired glucose tolerance and impaired fasting glucose • Type-I, Type-II and other specific types of diabetes and difference between them in their clinical presentation d. Investigation used for diagnosis of various types of diabetes	10
II	**Blood glucose lowering agents, hypoglycemia and its management** ○ Types of blood glucose- lowering agents and their effect in Type-II diabetes ○ How and when to use different agents ○ Precautions and specific contraindications to the use of each type of agent ○ Define hypoglycemia, various signs and symptoms of hypoglycemia • Preventive management of hypoglycemia	10

III	**Self-management of diabetes** ○ Concept of nutrition, nutrients and calories ○ Barriers to self-care, including psychosocial concerns and issues • Evaluation of people's self-management skills and the outcomes of selfmanagement	**10**
IV	**Treatment plan for type-I diabetes** ○ Basic and advance diabetes self-management skills for treating Type-I diabetes ○ Side effects associated with the use of oral drugs ○ Importance of exercise and physical activities required in the management of Type-I diabetes • Importance of cold chain management to keep injectable insulin's, timely changes of needles for injections and right technique of injection	**10**
V	**Treatment plan for type-II diabetes** ○ Basic and advance diabetes self-management skills for treating Type-II diabetes ○ Drugs for treating Type-II diabetes ○ Importance of exercise and physical activities required in the management of Type-II diabetes • Importance of cold chain management to keep injectable insulin's, timely changes of needles for injections and right technique of injection	**10**
VI	**Treatment plan for gestational diabetes** • Definition of gestational diabetes and recognition of its diagnostic criteria • Pathophysiology of gestational diabetes • Basic and advanced diabetes self-management skills for treating gestational diabetes • Management plan according to specific conditions such as obstetrics, diabetes control and culture ▪ Nutrition and its role	**10**

METHODS OF TEACHING

1. Lecture cum discussion
2. Demonstration
3. Lab visit
4. Practical work record

METHODS OF EVALUATION

1. Written Test
2. Laboratory Observation Book
3. Assignments
4. Oral Presentations

BLUE PRINT- Diabetic and Pre-diabetic patient treatment plan

Unit No.	Unit	Weightage (%)	Marks Allotted	LAQ (10)	SAQ (6)	VSAQ (3)
I	Diagnosis, classification and presentation of diabetes	15	12	1*	1	2
II	Blood glucose lowering agents, hypoglycemia and its management	16.25	13	1	1*	1(1*)
III	Self-management of diabetes	15	12		1	2
IV	Treatment plan for type-I diabetes	23.75	19	1	1	1(1*)
V	Treatment plan for type-II diabetes	15	12	1*	1	2
VI	Treatment plan for gestational diabetes	15	12		1	2
	TOTAL	**100**	**80**			

The duration of Examination (University) is One and Half (3 hours.

The total marks for the University Examination will be 80marks.

Long Answer Questions : 2 X10mark = 20 marks (Choice 2 out of 4)

Short Answer Question : 5 X 6marks= 30 marks (Choice 5 out of 6)

Very Short Answer Questions : 10 X3 marks = 30marks (Choice 10 out of 12)

TOTAL = 80marks

II YEAR ELECTIVE COURSES

II YEAR ELECTIVE COURSE CONTENT
ABILITY ENHANCEMENT COMPULSORY COURSE (AECC)
ENVIRONMENTAL STUDIES

NAME OF THE SUBJECT PAPER : ENVIRONMENTAL STUDIES

DURATION OF THEORY CLASSES : 15 hrs

DURATION OF PRACTICAL SESSIONS : 30 hrs

EXAMINATION : 100 marks (80 U + 20

IA) NO UNIVERSITY PRACTICAL EXAMINATION

DURATION OF THEORY EXAMINATION : 1 ½

hrs YEAR IN WHICH THE SUBJECT PAPER IS TAUGHT : II

YEAR

SYLLABUS

UNIT-I (Renewable and Non — renewable resources**)**

The multidisciplinary nature of environmental studies — Definition, scope and importance — Need for public awareness.

1 Forest resources: Use and over-exploitation, deforestation, case studies.Timber extraction, mining, dams and their effects on forests and tribalpeople.
2 Water resources: Use and over-utilization of surface and ground water,floods, drought, conflicts over water, dams-benefits and problems.
3 Mineral resources: Use and exploitation, environmental effects ofextracting and using mineral resources, case studies.
4 Food resources: World food problems, changes caused by agriculture andovergrazing, effects of modern agriculture, fertilizer-pesticide problems,water logging, salinity, case studies.
5 Energy resources: Growing energy needs, renewable and non-renewableenergy resources, use of alternate energy sources, case studies.
6 Land resources: Land as a resource, land degradation, man induced Landslides, soil erosion and desertification.Role of an individual in conservation of natural resources.Equitable use of resources for sustainable lifestyles.

UNIT-II (Ecosystems)

Concept of an ecosystem - Structure and function of an ecosystem Producers, consumers and decomposers — Energy flow in the ecosystem-Ecological succession-Food chains, food webs and ecological pyramids —Introduction, types, characteristic features, structure and function of the following ecosystem:

- Forest ecosystem
- Grassland ecosystem
- Desert ecosystem
- Aquatic ecosystems (Ponds, streams, lakes, rivers, ocean estuaries)

UNIT-III (Biodiversity and its conservation)

Introduction — Definition: genetics, species and ecosystem diversity

- Biogeographically classification of India
- Value of Biodiversity: Consumptive use, productive use, social, ethicalaesthetic and option values

- Biodiversity at global, national and local levels
- India as a mega- diversity nation
- Hot-spots of biodiversity-Threats to biodiversity: habitat loss, poachingof wildlife, man wildlife conflicts
- Endangered and endemic species of India
- Conservation of biodiversity: In-situ and Ex-situ conservation ofbiodiversity

UNIT-IV (Environmental Pollution)

Definition- causes, effects and control measures of:

- Air pollution
- Water pollution
- Soil pollution
- Marine pollution
- Noise pollution
- Thermal pollution
- Nuclear pollution
- Solid waste Management: causes, effects and control measures of urbanand industrial wastes — role of an individual in prevention of pollution —Pollution case studies — Disaster management: floods, earthquake, cyclone and landslides.

UNIT-V

Social Issues and the Environment: From unsustainable to sustainable development — Urban problems and related to energy — Water conservation, rain water harvesting, watershed management —Resettlement and rehabilitation of people; its problems and concerns. Case studies - Environmental ethics: issues and possible solutions climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust.

- Wasteland reclamation — Consumerism and waste products — Environmental Protection Act — Air (Prevention and Control of Pollution) Act — Water (Prevention and control of Pollution) Act — Wildlife Protection Act — Forest Conservation Act - Issues involved in enforcement environmental legislation — Public awareness
- Human Population and the Environment: Population growth, variation among nations — Population explosion — Family welfare Programmes —Environment and human health- Human Rights - Value Education- HIV/ AIDS - Women and Child Welfare- Role of Information Technology in Environment and Human Health — Case Studies.

FIELD WORK

1. Visit to local area to document environmental assets- river/ forest/ grassland / hill / mountain
2. Visit to a local polluted site - Urban / Rural / Industrial / Agricultural
3. Study of common plants, insects, birds
4. Study of simple ecosystems- pond, river, hill slopes, etc.

TEXT BOOKS RECOMMENDED

1. Agarwal, K.C. Environmental Science, Nidi Publishers.
2. BharuchaErach, The Biodiversity of India, Mapin Publication.
3. Brunner RC, Hazardous waste incineration, McGraw Hill Publishers.
4. Iaclhav H, Environmental Protection and Laws, Himalaya Publication.
5. Odum EP, fundamentals of Ecology, WB Sannders Publication.

TEACHING LEARNING ACTIVITIES

The course content in Environmental Studies will be covered by:

1. Interactive Lectures
2. Group Discussions
3. Field Visits

SKILL- BASED ELECTIVE COURSES – II YEAR

GOOD CLINICAL LABORATORY PRACTICE

NAME OF THE SUBJECT PAPER : Good Clinical Laboratory practice

DURATION OF THEORY CLASSES : 15 Hrs

DURATION OF PRACTICAL SESSIONS : 30 Hrs

PRACTICAL EXAMINATION : 50 Marks (40 U + 10

IA) NO UNIVERSITY THEORY EXAMINATION

DURATION OF EXAMINATION :1 ½

Hrs YEAR IN WHICH THE SUBJECT PAPER IS TAUGHT : II

YEAR

THEORY & PRACTICALS (DURATION 16 + 32 Hours)

Learning Objective

- To understand the relevance, importance and basic concepts ofgood laboratory practices
- To apply the knowledge to become familiar with the basic laboratory skills

UNIT I: INTRODUCTION

Introduction to Bioethics and Biosafety.Biosafety Guidelines and Regulations.Legal and Socio-economic Impacts of Biotechnology.Use of Genetically Modified Organisms and their Release in theEnvironment. Hazardous Materials used in Biotechnologytheir Handling andDisposal.

UNIT II: GOOD LABORATORY PRACTICE PRINCIPLE

Test Facility Organization and Personnel: Management responsibility, Study director_s responsibility, safety measures and personal responsibility. Quality assurance program. Facilities: Test System Facilities, Facilities for Handling test and Reference Substances. Archive Facilities. Waste Disposal, Animal Care Facilities, Animal Supply Facilities.

UNIT III: STANDARDED OPERATING PROCEDURES

Definition, Initiation of SOP, Preparation of SOP, Administration, Distribution and Implementation. Maintenance of laboratory records.Formatting SOP, Reagent/materials certification, Certification of analysts,Certification of laboratory facilities, Documentation and maintenance of record.

UNIT IV: DATE REPORTING AND STORAGE

Performance of study, Study plan, Conduct of study, Reporting of results. Archival storage of records and reports.

Learning Outcome

- To understand the implications of good laboratory practices

SKILL- BASED ELECTIVE COURSES – II YEAR
COMPUTER APPLICATIONS

NAME OF THE SUBJECT PAPER : COMPUTER APPLICATIONS

DURATION OF THEORY CLASSES : 15 Hrs

DURATION OF PRACTICAL SESSIONS : 30 Hrs

PRACTICAL EXAMINATION : 50 Marks (40 U + 10

IA) NO UNIVERSITY THEORY EXAMINATION

DURATION OF EXAMINATION :1 ½

Hrs YEAR IN WHICH THE SUBJECT PAPER IS TAUGHT :

II YEAR

THEORY & PRACTICALS (DURATION 16 + 32 Hours)

UNIT - I - Introduction to Computers

- Concepts of Computers
- Hardware and software trends and technology
- Classification of computers
- Application of computers in Laboratories

UNIT - II - Operating System

- Introduction
- Types of operating systems
- Windows

UNIT - III -Multimedia

- Types and uses
- Computer aided teaching and testing

UNIT — IV -Internet

- Introduction to Internet
- Use of Internet and e- mail
- Statistical packages

LIST OF PRACTICAL EXERCISES

1. Computer operating systems like MS~DOS and WINDOWS
2. Study of software packages like Chem Draw, Tinker and Microsoft package. Unit - Typing text in MS word- manipulating text- formatting the text – using different font sizes, bold, italics, Bullets and numbering – pictures, file insertion – aligning the text and justify – choosing paper size – adjusting margins- header and footer, inserting page numbers in a document – printing a file with options – using spell check and grammar – find and replace mail merge – inserting tables in a document.

Creating table in MS - Excel – cell editing – using formulas and functions – manipulating data with excel – using sort function to sort numbers and alphabets – drawing graphs and charts using data in excel – auto formatting – inserting data from other worksheets Preparing new slides using MS- POWER POINT – inserting slides – slide transition and animation – using templates – different text and font sizes – slides with sounds – inserting clip arts, pictures, tables and graphs – presentation using wizards.

Internet- using search engine – Google search – Exploring the text Explorer and Navigator – uploading and downloading of files and images E mail ID creation – sending messages – attaching files in E- mail

TEACHING LEARNING ACTIVITIES

The course content in Computer Applications will be covered by:

1. Interactive Lectures
2. Lab

SKILL- BASED ELECTIVE COURSES – II YEAR
Library and E-resource

NAME OF THE SUBJECT PAPER : Library and E-resource

DURATION OF THEORY CLASSES : 15 Hrs

DURATION OF PRACTICAL SESSIONS : 30 Hrs

PRACTICAL EXAMINATION : 50 Marks (40 U + 10

IA) NO UNIVERSITY THEORY EXAMINATION

DURATION OF EXAMINATION : 1 ½

Hrs YEAR IN WHICH THE SUBJECT PAPER IS TAUGHT :

II YEAR

THEORY & PRACTICALS (DURATION 16 + 32 HOURS)

Course Objectives

- To enable the students to understand at different levels of information systems in the society
- and their functions.
- To enable the students apply their knowledge in various library practice.
- To enable the students to understand the basic concepts of the Health Sciences.

UNIT: 1

Evolution, growth and development of LIS in India-current trends.
Type of libraries: Academic, Public and special Libraries (Health Science Libraries).

UNIT: 2

Library concepts & amp; Legislation: Five laws of Library science, Professional ethics of librarian, Delivery of books and newspaper act/IntellectualProperty/Plagiarism.

UNIT: 3

Library Association and International Bodies: Library Association –ILA, IASCIC, ALA, IFLA and UNESCO, SALIS, MLAI (Medical Library Association of India).

UNIT: 4

Library Rules & amp; Regulation, Stock Verification, Annual Reports, Budgets, Library buildings, furniture, equipment ‘s.

SKILL- BASED ELECTIVE COURSES – II YEAR
PUBLIC HEALTH AND HYGIENE

NAME OF THE SUBJECT PAPER : Public Health and Hygiene

DURATION OF THEORY CLASSES : 15 Hrs

DURATION OF PRACTICAL SESSIONS : 30 Hrs

PRACTICAL EXAMINATION : 50 Marks (40 U + 10

IA) NO UNIVERSITY THEORY EXAMINATION

DURATION OF PRACTICAL EXAMINATION : 1 ½

Hrs YEAR IN WHICH THE SUBJECT PAPER IS TAUGHT :

II YEAR

THEORY & PRACTICALS (DURATION 16 + 32 Hours)

Learning objectives

- To understand the concepts, significance and relevance of public health and hygiene
- To understand the health hazards as associated with public health andhygiene

I Introduction

Definition and Concept of Public Health, historical aspects, public health system in India and in the rest of world

II Aspects of health

Indicators of health, Determinants of Health, (Social, Economic, Cultural, Environmental, Education, Genetics, Food and Nutrition).Burden and prevention of disease. Environmental health- sanitation, air, water pollution, waste management. Mental health.

III Epidemology

Introduction, principles and concepts, study design, analysis methods, presentation and interpretation of epidemiological data

IV Hygiene concepts

Definition, importance, personal hygiene, medical hygiene, food hygiene, industrial hygiene.

Learning outcomes

- To understand public health and hygiene issues, their relevance and significance as can be practiced in real-life situations.

Text Books

1. Introduction to Public Health, Raymond L. Goldsteen, Karen Goldsteen, David G. Graham, 2011, Springer publishing company
2. Introduction To Community Health Nursing, KasturiSundarRao, 4th edition, Bi Publications Pvt Ltd
3. Concepts of Epidemiology, Raj S Bhopal, 2002, Oxford University press

Reference Books

1. A Treatise On Hygiene And Public Health, BirendraNathGhosh, 9th edition, Calcutta Scientific Publishing Co
2. An Introduction to Public Health, Caryl Thomas, 1949, John Wright and Sons Ltd.,

GENERIC ELECTIVE COURSES –
II YEAR BASIC
PSYCHOLOGY

NAME OF THE SUBJECT PAPER : Basic Psychology

DURATION OF THEORY CLASSES : 60 Hrs

EXAMINATION : 50 Marks (40 U + 10 IA)

NO UNIVERSITY PRACTICAL EXAMINATION

DURATION OF THEORY EXAMINATION : 1 ½ Hrs YEAR

IN WHICH THE SUBJECT PAPER IS TAUGHT : II YEAR

THEORY (64 Hours)

LEARNING OBJECTIVES

After complete ting the course the student can able to

- To identify the emerging specialties
- To understand the behavior and mental processes
- How the theories and principles of psychology may be applied to individual, societal and global issue
- Explain the application of psychology in Allied Health Sciences

Unit I: Introduction

Introduction to applied Psychology, Scientific methods in Psychology, Application of Psychology: Psychology in Industry, community, family, education, health, self-development, Human relations. Scope of psychology with special relevance to Allied Health Sciences.

Unit II: various cognitive processes and their application

Factors affecting learning, Importance of studying Psychology of learning in relation to Allied Health Sciences

Memory and forgetting, Kinds of remembering, the nature of forgetting, improving memory, relevance to Allied Health Sciences

Intelligence, Normal distribution of intelligence levels, Intelligence Testing, Intelligence tests, Uses and abuses of intelligence tests, relevance of intelligence and aptitude for Allied Health Sciences

Unit-III: Life style, Health, Stress and Coping Behavior

Cultural evolution, Life style choices and consequences, Healthy and Unhealthy life styles.Nutrition, Physical fitness, Smoking and Drinking. Stress and Health, The biological basis of stress, Stress and Physical functioning, Coping with stress, Adjustment a lifelong process. Cognitive appraisal and Stress, Stressful life styles,

Coping with everyday stress, Sources of stress, Coping styles and Strategies, Stress inoculation training.

Unit IV: Psychology of Vulnerable Individuals

Psychology of the challenged, types of disability, effects of disability, psychology of women, women and health, dealing with alcoholics and their families, post-traumatic stress disorder, psychology of the sick and ill, how patients react to chronic illness, effects of illness and hospitalization

REFERENCE BOOKS

1. Clifford T. Morgan, Richard a. King, John R. Weis and John Schopler, ―Introduction to Psychology‖ – 7th Edition. Tata McGraw Hill Book Co. New Delhi, 1993.

2. Ernest R. Hillgard, Richard C. Atkinson, Rita L. Atkinson, ―Introduction to Psychology‖ 6th Edition, Oxford IBH publishing Co. Pvt. Ltd., New Delhi,1975.

3. Baron.A. Robert, Psychology, Pearson Education Vth Ed.,2002

4. Psychology –the science of behavior –fifth edition1982-Neil Carson-William Bulkist- Allyn and Bacon.

GENERIC ELECTIVE COURSES – II YEAR
SOCIOLOGY

NAME OF THE SUBJECT PAPER : SOCIOLOGY

DURATION OF THEORY CLASSES : 60 Hrs

EXAMINATION : 50 Marks (40 U + 10 IA)

NO UNIVERSITY PRACTICAL EXAMINATION

DURATION OF THEORY EXAMINATION : 1 ½ Hrs

YEAR IN WHICH THE SUBJECT PAPER IS TAUGHT : II YEAR

THEORY (64 Hours)

Unit 1: Sociology: Discipline and Perspective

- Thinking Sociologically
- Emergence of Sociology, Sociology as a science; Sociology and Common Sense
- Some Basic Concepts: Association; Aggregates: Community, Categories,Groups and its Forms; Status and Role; Norms and Values.
- Individual and Society; Socialization: Concept and Agencies; Culture – meaning and characteristics; Types of culture – popular, elitist, folk, and consumer cultures; Pluralism and Multiculturalism, Culture and Personality.

Unit 2: Sociology and Other Social Sciences

- Sociology and Social Anthropology
- Sociology & Psychology
- Sociology & History

Unit 3: Human Society

- Social Institutions and Social Processes
- Social control: meaning, agencies and mechanisms
- Conformity and Deviance.
- Social Change, definition, factors, Social Mobility Readings

1. Anthony Giddens: Sociology
2. G. Rocher: A General Introduction to Sociology
3. George Ritzer. Encyclopaedia of sociology
4. Harry M. Johnson Sociology

GENERIC ELECTIVE COURSES – II YEAR
ENTREPRENEURSHIP ESSENTIALS

NAME OF THE SUBJECT PAPER : Entrepreneurship essentials

DURATION OF THEORY CLASSES : 60 Hrs

EXAMINATION : 50 Marks (40 U + 10 IA)

NO UNIVERSITY PRACTICAL EXAMINATION

DURATION OF THEORY EXAMINATION : 1 ½ Hrs.

YEAR IN WHICH THE SUBJECT PAPER IS TAUGHT : II YEAR

THEORY (64 Hours)

LEARNING OBJECTIVES

- To understand the fit between you and your entrepreneurial ambitions
- To find a problem worth solving
- To identify your customers
- To develop a solution for your customers' problems and problem solution
- To build and demonstrate an MVP
- To structure a business model around the problem, customer, and solution and present your Business Model Canvas

UNIT – I ORIENTATION

What is entrepreneurship – myths about entrepreneurship – impact of an entrepreneur and social entrepreneurship – wealth building and making an impact

IDEA/PROBLEM

What is a business opportunity and how to identify it - Methods for finding and understanding problems - (Observation, Questioning, DT, Jobs to be done (JTBD) - Introduction to Design Thinking - Process and Examples - Generate ideas that are potential solutions to the problem identified.

UNIT - II CUSTOMER

The difference between a consumer and a customer (decision maker); Market Types, Segmentation and Targeting, Defining the personas; Understanding Early Adopters and Customer Adoption Patterns - Identify the innovators and early adopters for start-up - Basics of Lean Approach and Canvas; Types of Business Models (b2b; b2c)

UNIT – III

BUSINESS MODEL AND VALIDATION

Introduction to Risks; Identify and document your assumptions (Hypotheses); Identify the riskiest parts of Plan - Develop the Solution Demo - Sizing the Opportunity - Building an MVP (Minimum Viable Product)

UNIT – IV

MONEY AND TEAM

Revenue Streams: Basics of how companies make money - Understand income, costs, gross and net margins - Identify primary and secondary revenue streams - Pricing and Costs - Financing Your New Venture - Team Building: Role of a good team in a venture's success; What to look for in a team; How do you ensure there is a good fit? Defining clear roles and responsibilities

UNIT – V

MARKETING AND SALES

Positioning – channels and strategy – sales planning – Importance of project management to launch and track progress - Understanding time management, workflow, and delegation of tasks– Business regulation: Basics of business regulations of starting and operating a business - Importance of being compliant and keeping proper documentation

LEARNING OUTCOMES

- This course will give the students the foundational experience of the entire cycle of entrepreneurship, through a combination of theory and practice.
- Students will learn what it takes to be an entrepreneur, recognizing business opportunities and the basics to create launch and manage new businesses.
- The participating students will create a _campus venture‘ or a "real" venture of their own to practice the concepts taught during the program. The course is built in a modular fashion such that colleges can tailor their offerings to cover either the entire offering (idea to an MVP) or limit to building a business model.

III YEAR

B.Sc – DIABETIC CARE TECHNOLOGY
FACULTY OF ALLIED HEALTH SCIENCES
SRI BALAJI VIDYAPEETH
(Deemed to be University)
Accredited by NAAC with 'A++' Grade

III YEAR

CORE SUBJECTS

1. Medical Nutrition Therapy
2. Management of Diabetes and Diabetic Education
3. Basics of Podiatry

Discipline Elective Course (DEC) – Choose any TWO

1. Biomedical Waste Management
2. Biochemistry & Molecular Biology
3. Pharmacology
4. Hospital infection control

AHS COURSE CONTENT THIRD YEAR B.SC. MEDICAL LABORATORY TECHNOLOGY (MLT)

Faculty code	Category	Course title	Hours					Credits				
AHS	Core theory MLT	Subjects	Theory	Practical	Tutorials	Clinical training	Total hours	Lecture	Practical	Tutorials	Clinical training	Total credits
AHS	DCT -9	Medical Nutrition Therapy	60	60				4	2			6
AHS	DCT -10	Management of Diabetes and Diabetic Education	75		30			5		1		6
AHS	DCT -11	Basics of Podiatry	75		30			5		1		6
AHS	DCT-CT 2	Clinical Training DCT 9 to 11				448					14	14
AHS	DE 1-8	Student's choice	64					4				4
AHS	DE 1-8	Student's choice	64					4				4
			320	**192**	**0**	**448**	**944**	**20**	**6**	**0**	**14**	**40**

SCHEME OF EXAMINATION

Papers	Subject	Theory		Practical			Grand Total (700)	Min Pass Marks (350)
		UE	IA	UE	IA	UIA*		
DCT -9	Medical Nutrition Therapy	80	20	80	20		200	100
DCT -10	Management of Diabetes and Diabetic Education	80	20				100	50
DCT -11	Basics of Podiatry	80	20				100	50
DCT-CT 2	Clinical Training DCT 9 to 11					100	100	50
DEC	Discipline elective	80	20				100	50
DEC	Discipline elective	80	20				100	50

Medical Nutrition Therapy

PAPER- MLT-7: Medical Nutrition Therapy

Duration of Theory Classes	**: 60 Hrs**
Duration of Practical Sessions	**: 60 Hrs**
University Theory Examination	**: 100 Marks (80 U + 20 IA)**
University Practical Examination	**: 100 Marks**
Duration of Theory Examination	**: 3 Hrs Year**
in which Subject Paper is taught	**: III Year**

COURSE OUTCOMES

- CO1: They will get an idea of the importance of the role of Diabetes Educator
- CO2: They will get an idea of the importance of team work for Diabetes management
- Co3: They will get a thorough knowledge on normal metabolism of Carbohydrates, Proteins, and fats
- CO4: They will get an introduction about different types of carbohydrates, fats, proteins and biochemistry of the same

COURSE CONTENT

UNIT	TITLE	THEORY 60 HOURS
I	**Basics of Nutrition** • Digestion, absorption, transport, storage and excretion of nutrients • Energy, carbohydrates, fat and protein, vitamins, and minerals • Physiologic fuel value • Requirements • Methods of assessment • Factors affecting in physiologic stages • Nutritional significance • Metabolic functions • Recommended allowances • Sources • Effects of deficiency • Food Additives • Reading Food label • Healthy cooking	25

II	**Nutrition therapy** • Type 1 and Insulin-Requiring Type 2 Diabetes • Nutrition therapy for Adults with Type 2 Diabetes • Nutrition therapy for Youth with Diabetes • Nutrition therapy for Older Adults with Diabetes • Nutrition therapy for Gestational Diabetes • Nutrition therapy for the Hospitalized and Long-Term Care patient with Diabetes	20
III	**Dietary assessment** • Anthropometrics • Biochemical tests • Clinical observations • ▫ Dietary and personal history	15

METHODS OF TEACHING

1. Lecture cum discussion
2. Demonstration
3. Lab visit
4. Practical work record

METHODS OF EVALUATION

1. Written Test
2. Laboratory Observation Book
3. Assignments
4. Oral Presentations

BLUE PRINT- Medical Nutrition Therapy

Unit No.	Unit	Weightage (%)	Marks Allotted	LAQ (10)	SAQ (6)	VSA Q (3)
I	Basics of Nutrition	35	28	1	1(1*)	4
II	Nutrition therapy	38.75	31	1(1*)	2	3(1*)
III	Dietary assessment	26.25	21	1*	2	3(1*)
	TOTAL	**100**	**80**			

The duration of Examination (University) is One and Half (3 hours.

The total marks for the University Examination will be 80marks.

Long Answer Questions : 2 X10mark = 20 marks (Choice 2 out of 4)

Short Answer Question : 5 X 6marks= 30 marks (Choice 5 out of 6)

Very Short Answer Questions : 10 X3 marks = 30marks (Choice 10 out of 12)

TOTAL = 80marks

Management of Diabetes and Diabetic Education

PAPER-MLT -8: MANAGEMENT OF DIABETES AND DIABETIC EDUCATION

DURATION OF THEORY CLASSES	**: 75 HRS**
DURATION OF TUTORIAL SESSIONS	**: 30 HRS**
UNIVERSITY THEORY EXAMINATION	**: 100 MARKS (80 U + 20 IA)**
UNIVERSITY PRACTICAL EXAMINATION	**: NIL**
DURATION OF THEORY EXAMINATION	**: 3 HRS YEAR**
IN WHICH SUBJECT PAPER IS TAUGHT	**: III YEAR**

COURSE DESCRIPTION

At the end of the course the student will able to fix, process, and embed tissues and make sections for micro section studies. He/She will also be competent to make routine cytological preparation. The students will learn about various staining procedures for demonstration of different substances & various cytological investigations. This will include special staining procedures &handling & testing of various cytological specimens.

COURSE OBJECTIVES

At the end of the course, the student will be able to:

- Students will learn about various histo techniques, handling and processing of tissue specimens as well as staining procedures.
- Students would able to carry out tissue processing and general staining.
- Students would be able to perform collection, processing, staining and quality control in cytological diagnosis.

COURSE OUTCOMES

- Co1: Students will be able to initiate Insulin administration (both subcutaneous & intravenous insulin infusion) Co2: They will get thorough knowledge about different types of Insulin delivery devices, and other OAD-s
- Co3: They will be able to give an adviser to avoid and manage Hypo & Hyper glycemia, self-management strategies during special situations.
- Co4: Importance of educational and behavioral interventions in the management of diabetes
- Co5: They gets practical knowledge on CGMS & Insulin pump therapy
- Co6: Will get an introduction about Research projects on Diabetes
- Co7: Will be able to conduct a multidisciplinary team for the Diabetes awareness in the public

COURSE CONTENT

UNIT	TITLE	THEORY 75 HOURS
I	• **Management of Diabetes** – overview: Aims of treatment, the importance of overall metabolic control, internationally recognized standards of care. The evidence for good control, physical assessment and laboratory assessment.	10
II	**Practical management of Diabetes** • Dietary management, insulin and oral therapy, Avoiding and managing hypo and hyperglycemia, Self-management strategies during special situations (sick days, travel, hypoglycemic events, etc), Self monitoring (glycemic control & complications related to diabetes), Lifestyle issues, Newer trends in management. **Special considerations** • Diabetes in children and adolescents, Diabetes in pregnancy, Diabetes in the elderly, Diabetes & infection, Diabetes in people living in poverty, surgical considerations in Diabetes.	20
III	• Educational and behavioral interventions: Principles and practice of patient education, Measure and document patient outcomes, Problems and psychological evaluation in the diabetic patient, Strategies for behavioral changes, Managing stress.	15
IV	• Educational approaches for special situations: • Low literacy, Low income. Mentally or physically challenged individuals, Amputation. Diabetes Foot Care & Education Edema, Ulceration, Gangerne, Identifying foot at risk. • Diabetes & Dental Care: Definition, preventive measures for dental problems, important aspects of oral hygiene, nutritional modification and appropriate instruction for treating periodontal disease • Hypoglycemia & Hyperglycemia: Causes, Symptoms, Prevention & Treatment. • Developing an Individualized meal plan: Diet order, Menu setting, Supervising the diets. • Standardization of recipe: To plan, calculate, calculate the nutritive value and demonstrate	15
V	• **Diabetes Exercise Plan** • Designing an exercise regimen for diabetics taking into consideration factors such as age, weight, mobility, co-morbidities like hypertension, cardiac conditions, etc. Exercises like Yoga and other meditation techniques – role and utility. • **Managing a diabetes service:** The multidisciplinary team, Organizing the Diabetes clinic, Documenting and monitoring the quality of care, Assessing and reporting outcomes. Research Projects on Diabetes.	15

BLUE PRINT- Management of Diabetes and Diabetic Education

Unit No.	Unit	Weightage (%)	Marks Allotted	LAQ (10)	SAQ (6)	VSAQ (3)
I	Management of Diabetes	15	12	1*	1	2
II	Practical management of Diabetes	16.25	13	1	1(1*)	1(1*)
III	Educational and behavioral interventions	15	12		1	2
IV	Educational approaches for special situations	23.75	19	1	1	1(1*)
V	Diabetes Exercise Plan	15	12	1*	1	2
	TOTAL	**100**	**80**			

The duration of Examination (University) is One and Half (3 hours.

The total marks for the University Examination will be 80marks.

Long Answer Questions : 2 X10mark = 20 marks (Choice 2 out of 4)

Short Answer Question : 5 X 6marks= 30 marks (Choice 5 out of 6)

Very Short Answer Questions : 10 X3 marks = 30marks (Choice 10 out of 12)

TOTAL = 80marks

Basics of Podiatry

Paper- DCT-9: Basics of Podiatry

Duration of Theory Classes	**: 75 Hrs.**
Duration of Tutorial Sessions	**: 30 Hrs.**
University Theory Examination	**: 100 Marks (80 U + 20 IA)**
University Practical Examination	**: NIL**
Duration of Theory Examination	**: 3 Hrs.**
Year in which Subject Paper is taught	**: III Year**

COURSE OUTCOMES

At the end of the course, students will be able to...

- CO1: They will get knowledge on how diabetes affect foot
- CO2: Ability to perform various investigations.
- CO3: They will get an idea of different types of dressing materials and topical applications used for Diabetes foot ulcer management
- CO4: They will get idea of the different types of microorganisms as well as its sensitivity to antibiotics
- CO5: They can give foot wear and foot care advise for Diabetic foot patients

COURSE CONTENT

UNIT	TITLE	THEORY 75 HOURS
I	• Anatomy of foot • Biomechanics and GAIT • Foot Examination & Diabetes foot scan	10
II	• AB Index, • Biothesiometer, • TcPO2, • Pedopodogram, • Anodyne therapy • Description of ulcer & Wound healing • Dressing materials and topical applications	20
III	• Neuropathy- Clinical , Pathogenesis, Treatment • POVD • Atherosclerosis	15
IV	• Diabetic Vasculopathy • Aetiopathogenesis • Treatment	15
V	• **Infection** • Diabetic foot infection (Microbiology) & Treatment) • Infection of leg and foot	15

BLUE PRINT- Basics of Podiatry

Unit No.	Unit	Weightage (%)	Marks Allotted	LAQ (10)	SAQ (6)	VSAQ (3)
I	Anatomy of foot	15	12	1*	1	2
II	Therapy	16.25	13	1		1(1*)
	Wound healing	15	12		1(1*)	2
III	Neuropathy	15	12		1	2
IV	Diabetic Vasculopathy	23.75	19	1	1	1(1*)
V	Infection	15	12	1*	1	2
	TOTAL	**100**	**80**			

The duration of Examination (University) is One and Half (3 hours.

The total marks for the University Examination will be 80marks.

Long Answer Questions : 2 X10mark = 20 marks (Choice 2 out of 4)

Short Answer Question : 5 X 6marks= 30 marks (Choice 5 out of 6)

Very Short Answer Questions : 10 X3 marks = 30marks (Choice 10 out of 12)

TOTAL = 80marks

DISCIPLINE ELECTIVE – III YEAR

B.Sc. Diabetic Care Technology
Discipline Elective I - Biomedical Waste Management

NAME OF THE SUBJECT PAPER : Biomedical Waste Management

DURATION OF THEORY CLASSES : 60 Hrs.

THEORY EXAMINATION : 50 Marks (40 U + 10 IA)

PRACTICAL EXAMINATION : NIL

DURATION OF THEORY EXAMINATION : 1 1/2Hrs.

Course Description

The increasing number of Biomedical wastes (BMW) being generated is becoming a serious problem to hospitals and has significant adverse impacts on public health and occupational health if improperly handled. Biomedical waste requires utmost care in handling, collection, processing, and disposal due to inherent hazards of the waste. The basic goal of the course is to provide the fundamentals of and biomedical wastes and various aspects of their management right from generation through collection and disposal. Special emphasis will be given to the system approach to managing these wastes to meet regulatory requirements.

Learning Objectives

- To sensitize the students about health care waste and its impact on health and environment.
- Acquaint the students to existing legislation, knowledge, and practices regarding health care waste.

Learning Outcomes

At the end of the course the student will be able to

- Possess the knowledge on the sources of generation, of hazardous and non-hazardous waste in health care settings and research laboratories.
- Demonstrate understanding on the environmental and occupation hazards of improper BMW management.
- Understand the good practices for a systematic approach in the management of BMW

- Gain knowledge in various management strategies and technological solutions in BMW management, treatment, and disposal.
- Be familiar with the applicable legislations and regulations for treatment and disposal.

SYLLABUS

1. Introduction to Hospital Waste
- Definition Classification of hospital wastes
- Types and composition: Types of solids, liquids, sharps, blood and blood tissue, radioactive material, biological and chemical material
- Hospital effluents: Nature and composition, Levels of Generation in a small clinic, nursing home, small and large hospitals, Storage of hospital waste; Types of bags and containers used for storage

2. Biomedical Waste Management Guideline
- Requirement
- Documentation of Biomedical waste types and guidelines
- Bio-medical wastes (Management & Handling) Rules, 1998; and amendments

3. Principles of Biomedical Waste Management
- Segregation of biomedical waste
- Handling and transport of hospital waste: Authorization and accidental spilling
- Methods / treatments required for disposal of pathogens
- Waste disposal methods
- Techniques of waste management
- Protocols for HW management

4. Waste prevention
- Waste reduction activities
- Waste recycling

5. Biomedical Waste Treatment Facility
- Introduction, location, land requirements
- Coverage area, types of equipment
- Infrastructure requirements
- Record keeping
- Waste collection, transport and storage facilities
- Precautions required

Textbooks:

1. Sustainable Biomedical Waste Management, P. K. Behera, 2nd Edition. 2008
2. Biomedical Waste Management, R. Radhakrishnan, 1st Edition, 2005
3. The Environmental Protection Act, 1986.

DEC I – Biomedical Waste Management
Model Question Paper

TIME: 1 1/2 HOURS **MAXIMUM MARKS: 40**

(A) Short Answer (Answer any Five) **(5x6=30)**

1. Explain the different categories of biomedical waste.
2. Explain the different sources of health-care wastes and how the hospitals handle them.
3. What are the various guidelines given by WHO for safe health-care waste management?
4. Write the principles of hospital hazards management. Explain the various types of infections.
5. How does the color-coding help in medical waste management? Explain with examples.

(B) Very Short Answer (Any six) **(5x2=10)**

1. How will you classify healthcare waste?
2. What are waste sharps?
3. Who is at risk from health-care waste?
4. Write few rules governing the disposal of medical wastes?
5. Why is segregation important?
6. How sharps are disposed?
7. List some non-infectious wastes in hospital.
8. What is chemical disinfection?

DISCIPLINE ELECTIVE II -BIOCHEMISTRY AND MOLECULAR BIOLOGY

NAME OF THE SUBJECT PAPER : BIOCHEMISTRY AND MOLECULAR BIOLOGY

DURATION OF THEORY CLASSES : 60 Hrs.

THEORY EXAMINATION : 50 Marks (40 U + 10 IA)

PRACTICAL EXAMINATION : NIL

DURATION OF THEORY EXAMINATION : 1 1/2 Hrs.

SYLLABUS

UNIT-I: NUCLEO PROTEIN

- Purine and Pyrimidine bases, Ribose and Deoxy Ribose, Definition of Nucleosides and Nucleotides, Biologically significant Nucleotides
- Nucleic acids as genetic information carriers - experimental evidence e.g. action spectrum, genetic information, Hershey-chase experiment etc.
- Modes of replication, details of Meselson and Stahl experiment, semi conservative replication.

UNIT -II

- Genetic code - Evidence for a triplet code, properties of the code - sequential, ubiquitous, degenerative, wobble hypothesis, nonsense codon
- Mechanism of translation
- Mechanism of transcription, Regulation of transcription, Post translational processing
- Rates of eukaryotic and prokaryotic protein synthesis

UNIT-III: DEOXY RIBONUCLEIC ACID

- Physical properties of DNA - 5' - 3' direction, size range location, isolation, base composition, base equivalent, secondary structure, base pairing, Tertiary structures.
- DNA replication - properties of DNA dependent DNA polymerases I, II, III and their role in DNA replication
- DNA Repair systems

UNIT-IV: RIBONUCLEIC ACID

- Physical properties of RNA-classes of RNA-structure, methods of isolation and fractionation of RNA-primary, secondary and tertiary structures
- Rapid RNA sequencing techniques

UNIT-V

- Polymerase Chain Reaction (PCR)
- Recombinant DNA technology and its applications

Discipline Elective III - HOSPITAL INFECTION CONTROL

NAME OF THE SUBJECT PAPER : Hospital Infection Control

DURATION OF THEORY CLASSES : 60 Hrs.

THEORY EXAMINATION : 50 Marks (40 U + 10 IA)

PRACTICAL EXAMINATION : NIL

DURATION OF THEORY EXAMINATION : 1 1/2 Hrs.

Learning Objectives

At the end of the Course the student should be knowledgeable about

- How to prevent and control infections in hospitalized patients to ensure patient safety
- How to prevent infections in employees thus assuring employee safety within the organization
- How to prevent and control infections in the environment within the hospital and homes thus ensuring environmental safety
- How to plan and implement an infection prevention program.

Learning Outcome

At the end of the course the student shall understand the various principles and practices of an Infection Control Program and be able to identify potential health care related infections to implement prevention and control measures.

SYLLABUS

Unit 1: Overview of infectious diseases with special reference to communicable pathogens. Hand hygiene principles, practice, and audit. Handling of patients with communicable diseases and the principles of isolation policies. Reporting of communicable diseases to the governmental agencies. Biomedical waste management and the current regulations.

Unit 2:

Infection prevention in Operating rooms, Casualty, Dialysis , transplant units, Burns unit. Occupational exposure to infection and management, environmental surveillance protocols

Unit 3:

Infection control in Central Sterilization Services department, Laundry, Diet kitchen. Infection control in Intensive Care Units including prevention of Device Associated Infections.

Unit 4:

Monitoring of Antimicrobial use and audit.

Test Books

1. Handbook of Hospital Infection Control – Sanjay Singhal
2. Basics of Infection Control for Health Care Providers 2nd edition: Mike kennamar
3. APIC Text of Infection Control and Epidemiology, 4th ed.
4. Hospital Epidemiology and Infection Control – Glen Mayhall. 4th Edition. Lippincott
Williams
5. Hospital Clinical Waste, Hazards, Management,and Infection Control. Dr. Ashok Saini. Indian Society of Health Administrators. Yem Yes Printers
6. Hospital Acquired Infections – Prevention and Control, Purva Mathur, 1st Edition, Lippincott Williams

Discipline Elective IV - PHARMACOLOGY

NAME OF THE SUBJECT PAPER	**: PHARMACOLOGY**
DURATION OF THEORY CLASSES	**: 60 Hrs.**
THEORY EXAMINATION	**: 50 Marks (40 U + 10 IA)**
PRACTICAL EXAMINATION	**: NIL**
DURATION OF THEORY EXAMINATION	**: 1 1/2 Hrs.**

UNIT I

GENERAL PHARMACOLOGY

- Introduction of Pharmacology
- Routes of Administration
- Pharmacokinetics
- Pharmacodynamics
- Adverse Drug Reaction

Unit II

Fundamental System

- GI System
- Respiratory System
- CVS
- Blood
- Drugs affecting renal system
- Excretion of drugs in stool, bile and other body fluids

UNIT III

Chemotherapeutic Agents

- Antibiotics
- Anti-Viral
- Anti-Fungal
- Anti Protozoal Agents
- Anti Helminthic
- Anti Septic and disinfectants

UNIT IV

- Applied Pharmacology
- Applied Pharmacology for GIT
- Applied Pharmacology for Blood and renal system and Antibiotics.