

**Ordinance Governing
Bachelor of Dental Surgery,
(I. B. D.S.) Degree Course
(New DCI Regulation - 2007)**

2008



**K.L.E. University,
Belgaum**

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NOTIFICATION

THE EMBLEM



VISION STATEMENT

The KLE University, Belgaum, aims at steering academics in particular and endeavours education in general to the pinnacle of global standards.

This educational institution has been designed for instruction, examination and over all development of students in many branches of basic and advanced learning. This groove of academe not only aims for conferring degrees in various faculties but also wants to make this hall of learning open to all, may it be in health sciences, economics, law, music to name a few.

This University would strive for achievement of academic excellence imparting education in systematic and disciplined manner so as to inculcate in a student moral principles, good conduct and intellectual ability.

This alma – matar of education would promote :

- Development of scientific temper.
- Encourage social accountability not only in students but also in teachers and institutions.
- Support quality assurance for all educational programme.

SECTION 1

GOALS OF EDUCATION AND TRAINING IN DENTAL SCIENCES

The Dental curriculum shall be oriented towards educating students of B.D.S. Course to:

1. Take up the responsibilities of Dental surgeon and be capable of functioning independently in both urban and rural environment.
2. Provide educational experience that allows hands-on-experience both in hospital as well as in community setting.
3. Make maximum efforts to encourage integrated teaching and de-emphasize compartmentalisation of disciplines so as to achieve horizontal and vertical integration in different phases.
4. Offer educational experience that emphasizes health rather than only disease.
5. Teach common problems of health and disease and National programmes.
6. Use learner-oriented methods, which would encourage clarity of expression, independence of judgment, scientific habits, problem solving abilities, self initiated and self-directed learning.
7. Use of active methods of learning such as group discussions, seminars, role play, field visits, demonstrations, peer interactions etc., which would enable students to develop personality, communication skills and other qualities which are necessary.

Regular periodic assessment is done throughout the course. Examinations are designed with a view to assess not merely the knowledge but also practical and clinical skills, habits and values which are necessary for a graduate to carry out professional day to day work competently.

Towards achieving these goals, Institute of Dental Sciences should:

- ❖ Evolve institutional objectives, which would be in consonance with the National goals and health policy. The institutional objectives should describe the attributes of their product.
- ❖ Shift the role of Dental teachers from merely imparting knowledge to that of a facilitator and motivator of student learning.
- ❖ Establish a Dental Education Unit for faculty development, preparation of learning resource materials and for improving evaluation methods.

SECTION 2

AIMS AND OBJECTIVES OF BDS COURSE

AIMS :

The dental graduates during training in the institutions should acquire adequate knowledge, necessary skills and reasonable attitudes which are required for carrying out all activities appropriate to general dental practice involving the prevention, diagnosis and treatment of anomalies and diseases of the teeth, mouth, jaws and associated tissues. The graduate also should understand the concept of community oral health education and be able to participate in the rural health care delivery programmes existing in the country.

Objectives

The objectives are dealt under three headings (a) Knowledge and understanding (b)Skills and (c) Attitudes.

(a) Knowledge and understanding:

The graduate should acquire the following during the period of training :

1. Adequate knowledge of the scientific foundations on which Dentistry is based and good understanding of various relevant scientific methods, principles of biological functions and be able to evaluate and analyse scientifically various established facts and data.
2. Adequate knowledge of the development, structure and function of the teeth, mouth and jaws and associated tissues both in health and disease and their relationship and effect on general state of health and also bearing on physical and social well being of the patient.
3. Adequate knowledge of clinical disciplines and methods which provide a coherent picture of anomalies, lesions and diseases of the teeth, mouth and jaws and preventive diagnostic and therapeutic aspects of Dentistry.
4. Adequate clinical experience required for general dental practice.
5. Adequate knowledge of the constitution, biological function and behaviour of persons in health and sickness as well as the influence of the natural and social environment on the state of health in so far as it affects Dentistry.

(b) Skills:

A graduate should be able to demonstrate the following skills necessary for practice of Dentistry :

1. Able to diagnose and manage various common dental problems encountered in general Dental practice keeping in mind the expectations and the right of the society to receive the best treatment available wherever possible.

2. Acquire the skill to prevent and manage complications if encountered while carrying out various surgical and other procedures.
3. Possess skill to carry out certain investigative procedures and ability to interpret laboratory findings.
4. Promote oral health and help prevent oral diseases when ever possible.
5. Competent in the control of pain and anxiety during dental treatment.

(c) Attitudes:

A graduate should develop during the training period the following attitudes:

1. Willing to apply the current knowledge of Dentistry in the best interest of the patients and the community.
2. Maintain a high standard of professional ethics and conduct and apply these in all aspects of professional life.
3. Seek to improve awareness and provide possible solutions for oral health problems and needs of the community.
4. Willingness to participate in the Department of Dental Education (DDE) programmes to update the knowledge and professional skill from time to time.
5. To participate in the implementation of the National Oral Health Programmes.

SECTION 3

REGULATIONS RELATING TO B.D.S. COURSE

I. ELIGIBILITY FOR ADMISSION

Eligibility Requirements for admission to BDS Course: Only those candidates who would satisfy or are likely to satisfy the relevant eligibility requirements for admission to a course will be considered eligible to appear for the Under Graduate All India Entrance Test (UGAIET) & subsequently for admission to that course.

Qualifications:

- i. Requisite qualifications for admission to BDS Course: The candidate seeking admission to this course should have passed the Higher Secondary Certificate Examination PUC II / HSC or the Indian School Certificate Examination (ISCE) or any other examination equivalent to 10+2 / HSC examination of any recognized board / University from any school / college situated in India / abroad after 12 years of study.
- ii. For admission to BDS Course: The candidate should have passed in the subjects of Physics, Chemistry, Biology & English individually & must have obtained at least 50% marks in Physics, Chemistry & Biology taken together in the qualifying examinations i.e. PUC II / 10+2 / HSC or equivalent. The candidate should also have scored 50% marks in English language. The candidate should also have secured at least 50% marks in Physics, Chemistry & Biology taken together at KLE-UGAIET for admission to BDS course.
- iii. Candidates who are likely to appear or who have appeared for qualifying examination i.e. PUC II / 10+2 / HSC or equivalent but whose results have not been declared will also be considered eligible to appear for KLE-UGAIET, provided they have offered the above mentioned subjects at the said examination.

II. AGE REQUIREMENT

The candidate shall have completed the age of 17 years at the time of admission or will complete this age on 31st December of the year in which he/she seeks admission.

III. DURATION OF THE COURSE

The BDS course shall be of five academic years.

IV. ATTENDANCE REQUIREMENT, PROGRESS AND CONDUCT

Attendance requirement shall be as follows:

- a. Every candidate shall have attendance of 75% in theory classes and 75% in Practical / Clinical in each subject in each year.
- b. In case of subject in which the instructional programme extends more than one academic year and hence there is no University Examination in the subject during that year (i.e. non-exam going subjects), the attendance requirement shall not be less than 75% in Lectures

and 75% in Practical / Clinical classes. At the time of appearing for the professional examination in the subject the candidate should satisfy the condition as above.

- c. Candidate who is declared failed, shall put up an addition of a minimum of 75% attendance in the failed subjects.

V. TITLES OF SUBJECTS OF STUDY IN FIRST YEAR

- i. General Human Anatomy including Embryology and Histology.
- ii. General Human Physiology and Biochemistry, Nutrition and Dietics.
- iii. Dental Anatomy, Embryology and Oral Histology.
- iv. Dental Materials.
- v. Preclinical Prosthodontics and Crown and Bridge.
- vi. Environmental Studies.
- vii. Law - Indian Constitution.
- viii. Kannada.

VI. TEACHING HOURS

Minimum teaching hours for each subject in Theory and Practical are as shown in the table – 1

Table 1 : Subjects and Hours of Instruction

Sl. No.	Subjects	Lecture Hours	Practical Hours	Clinical Hours	Total Hours
1.	General Human Anatomy including Embryology, Osteology and Histology.	100	175	-	275
2.	General Human Physiology, Biochemistry, Nutrition and Dietics.	120 70	60 60	-	180 130
3.	Dental Anatomy Embryology and Oral Histology	105	250	-	355
4.	Dental Materials.	20	40	-	60
5.	Preclinical Prosthodontics & Crown & Bridge	-	100	-	100
6.	Environmental Studies	50	-	-	50
7.	Law – Indian Constitution	25	-	-	25
8.	Kannada	100	-	-	100

VII SCHEME OF EXAMINATION

The scheme of examination of B.D.S. course shall be divided into 5 professional examinations, viz., I.B.D.S. Examination at the end of first academic year, II B.D.S. at the end of second academic year, III B.D.S. at the end of third academic year, IV B.D.S at the end of fourth academic year and V B.D.S at the end of fifth academic year. University examinations shall be held twice a year.

A candidate who satisfies the requirement of attendance, progress, and conduct as stipulated by the KLE University shall be eligible to appear in the University examination. Certificate to the above effect should be produced from the Head of the Institution along with the application for examination and the prescribed fees.

The examination shall be open to a candidate who satisfies the requirements of attendance, progress and other rules laid down by KLE University.

Internal Assessment Examination

The internal assessment includes written / clinical / practical tests. It will also include other items such as maintenance of records, participation in seminars and group discussions, clinical case study, proficiency in carrying out practical or clinical skill or participation in projects and assignments even during vacation. These be evaluated objectively and recorded.

A minimum of 3 internal assessments will be held in an academic year. The average of the best of any two will be sent to the university as the final internal assessment marks. A minimum of 35% of the internal assessment marks should be obtained to be eligible to appear for the final university examination.

Distribution of subjects for Institutional Examination

- i. Environmental Studies.
- ii. Law - Indian Constitution.
- iii. Kannada.

The Institution will conduct theory examination of 100 marks for each subject at the end of the course.

Distribution of subjects for University Examination

I B.D.S. Examination

1. General Human Anatomy including Embryology and Histology.
2. General Human Physiology and Biochemistry, Nutrition and Dietics.
3. Dental Anatomy, Embryology and Oral Histology.

Table VIII : DISTRIBUTION OF MARKS IN UNIVERSITY EXAMINATION AND INTERNAL ASSESSMENT FOR VARIOUS SUBJECTS FOR FIRST BDS.

Subjects	THEORY			PRACTICALS/CLINICALS			Grand Total	
	University Paper	Viva voce	Internal Assessment	Total	University Examination	Internal Assessment		Total
I BDS								
1 General Human Anatomy, including Embryology, osteology and Histology	70	20	10	100	90	10	100	200
2 General Human Physiology	35	10	5	100	45	5	100	200
Biochemistry, Nutrition and Dietics	35	10	5		45	5		
3 Dental Anatomy, Embryology and Oral Histology	70	20	10	100	90	10	100	200

IX ELIGIBILITY TO APPEAR IN UNIVERSITY EXAMINATION

A student should have a minimum 75% attendance in theory and practical / clinical each and a minimum of 35% of internal assessment marks in each subject in each year to be eligible to appear for the university examination.

A candidate who has failed in any **one** subject in I year or in II year or in III year BDS university examination shall be permitted to go to next higher B.D.S. class and may be allowed to appear in that subject in subsequent examinations. However, he/she has to pass the university examination in that subject before he/she is allowed to take next higher B.D.S. university examination.

X. CRITERIA FOR PASS IN THE UNIVERSITY EXAMINATION

- I. For declaration of pass in a subject, a candidate shall secure 50% marks in the university examination both in theory and practical/clinical examinations separately, as stipulated below :
 - a. For pass in theory, a candidate shall secure 50% marks in aggregate in university theory examination i.e. marks obtained in university written examination, viva voce examination and internal assessment (theory) combined together i.e. fifty marks out of one hundred marks (50 / 100 marks).
 - b. In the university practical/clinical examination, a candidate shall secure 50% of university practical marks (45 / 90 marks). And 50% of total marks in aggregate i.e. practical / clinical and internal assessment combined together should be 50 / 100 marks.
 - c. The total marks in Pre-Clinical Prosthodontics & Crown & Bridge University Examination is 100 marks (practical 60, viva voce 20 and Internal Assessment 10 marks). As there is no theory examination in this subject, the viva-voce marks are a component of the practical marks. The pass criteria is ; 50 aggregate out of 100 marks (i.e. 50/100 marks) in the university examination.

- d. **Grace marks** for passing BDS shall be as per bylaws of the KLE University.
- e. Successful candidates who obtain 65% of the total marks or more shall be declared to have passed the examination in First Class. Other successful candidates will be placed in Second Class. A candidate who obtains 75% marks and above is eligible for distinction. Only those candidates who pass the whole examination in the first attempt will be eligible for distinction or class.

XI. MISCELLANEOUS

Migration/ Transfer of Students

1. Migration from one dental college to other is not a right of a student. However, migration of students from one dental college to another dental college in India may be considered by the Dental Council of India only in exceptional cases or extreme compassionate grounds*, provided following criteria are fulfilled. Routine migrations on other grounds shall not be allowed.
2. Both the colleges, i.e. one at which the student is studying at present and one to which migration is sought, are recognised by the Dental Council of India.
3. The applicant candidate should have passed first professional BDS examination.
4. The applicant candidate submits his/her application for migration, complete in all respects, to all authorities concerned within a period of one month of passing (declaration of results) the First BDS examination.
5. The applicant candidate must submit an affidavit stating he/she will pursue 12 months of prescribed study before appearing at Second BDS examination at the transferee dental college, which should be duly certified by the Registrar of the concerned university in which he/she is seeking transfer. The transfer will be applicable only after receipt of the affidavit.
6. Migration should not be allowed more than 5% of the intake of any recognised institution for that particular academic session.

Note 1:

- i. Migration during clinical course of study shall not be allowed on any ground.
- ii. All applications for migration shall be referred to Dental Council of India by college authorities. No institution/ university shall allow migrations directly without the approval of the council.
- iii. Council reserves the right, not to entertain any application which is not under the prescribed compassionate grounds and also to take independent decisions where applicant has been allowed to migrate without referring the same to the Council.

Note 2: * Compassionate grounds criteria:

- i. Death of a supporting guardian.
- ii. Illness of the candidate causing disability.
- iii. Disturbed conditions as declared by Government in the Dental College area.

B. Re-admission of candidates who discontinued the course

A candidate who discontinues the course is eligible for re-admission subject to the following conditions:

1. Provision for re-admission is only once during the entire course.
2. He/she should seek readmission within three years from the date of discontinuation of the course.
3. He/she should pay the prescribed fees for the year for which he/she seeks admission and cannot claim readmission on the strength of fees paid earlier.
4. If the candidate discontinues after University Examination, he/she should reappear for the subjects in which he/she failed before seeking admission to the next higher class by paying examination fee etc. He/she should put in two terms of attendance in the class for which he/she seeks readmission before appearing for the University Examination.

GENERAL HUMAN ANATOMY INCLUDING EMBRYOLOGY AND HISTOLOGY

GOAL:

The students should gain the knowledge and insight into, the functional anatomy of the normal human head and neck, functional histology and appreciation of the genetic basis of inheritance and disease, and the embryological development of clinically important structures, so that relevant anatomical and scientific foundations are laid down for the clinical years of the BDS course.

OBJECTIVES :

a) KNOWLEDGE

At the end of the I BDS course the student is expected to :

1. Know the normal disposition of the structures in the body while clinically examining a patient and while conducting clinical procedures.
2. Know the anatomical basis of disease and injury.
3. Know the microscopic structure of the various tissues, a pre-requisite for understanding of the disease processes.
4. Know the nervous system to locate the site of lesions according to the sensory and / or motor deficits encountered.
5. Have an idea about the basis of abnormal development, critical stages of development, effects of teratogens, genetic mutations and environmental hazards.
6. Know the sectional anatomy of head and neck and brain to read the features in radiographs and pictures taken by modern imaging techniques.
7. Know the anatomy of cardio-pulmonary resuscitation.

b) SKILLS

At the end of the I BDS course the student is expected to :

1. Locate various structures of the body and to mark the topography of the living anatomy.
2. Identify various tissues under microscope.
3. Identify the features in radiographs and modern imaging techniques.
4. Detect various congenital abnormalities.

COURSE CONTENTS

Theory : 100 Hours

I. Introduction : 10 Hours

Scope and subdivisions of Anatomy, definition and interpretation of anatomical terms, planes, anatomical positions, elements of anatomy including fascia, muscles, blood vessels, nerves, joints, lymph nodes and lymph vessels.

II. Gross Anatomy of Head and Neck : 30 Hours

- a. Scalp: Layers, blood supply, nerve supply, lymphatic drainage and applied aspects.
- b. Face: Muscles, blood supply, nerve supply, lymphatic drainage. Lacrimal apparatus and applied anatomy.
- c. Neck :
 - i. Cervical fascia.
 - ii. Posterior triangle.
 - iii. Suboccipital triangle.
 - iv. Anterior triangle – submental, digastric, carotid and muscular.
 - v. Midline structures of neck.
- d. Cranial cavity: meninges; dural folds and sinuses; hypophysis cerebri.
- e. Orbit : nerves, vessels, extrinsic muscles of eyeball.
- f. Parotid region : parotid gland.
- g. Temporal and infra - temporal fossae : muscles of mastication, maxillary artery, maxillary nerve and mandibular nerve.
- h. Temporo- mandibular joint.
- i. Submandibular region : submandibular salivary gland.
- j. Thyroid and parathyroid glands.
- k. Vessels of head and neck : carotid, subclavian arteries, internal jugular vein.
- l. Mouth : tongue and palate.
- m. Pharynx.
- n. Larynx.
- o. Cervical part of trachea and oesophagus.
- p. Nasal cavity and paranasal air sinuses.
- q. Lymphatic drainage of head and neck.
- r. Joints of neck : atlanto-occipital and atlanto-axial.

III. Osteology of Head and Neck : 18 Hours

Adult Skull :

- Exterior : norma.
- Interior : cranial fossae,
- Individual bones : mandible, maxilla, frontal, parietal, occipital, temporal, zygomatic, ethmoid, sphenoid, vomer, palatine and nasal bones.

Foetal skull.

Cervical vertebrae.

Hyoid bone.

IV. Neuroanatomy : 10 Hours

- a. Detailed description of cranial nerves : V, VII, IX, X (in the region of head and neck) XI, XII including their nuclei of origin, intra and extra cranial courses.
- b. Cervical spinal nerves and cervical plexus.
- c. Autonomic nervous system of head and neck.

V. Embryology: 12 Hours

- a. Gametogenesis : spermatogenesis and oogenesis, fertilization, implantation, germ layer formation, fetal membranes and placenta.
- b. Development of branchial apparatus, pharyngeal arches, pouches and clefts.
- c. Development of face, jaws, oral cavity, tooth, tongue, palate, nasal cavity, paranasal air sinuses, salivary glands, thyroid gland, hypophysis cerebri, temporo-mandibular joint.

VI. Histology : 16 Hours

- a. Introduction to cytology and histology
- b. Basic tissues : epithelium - simple and compound
- c. Connective tissue : cells, fibres-collagen, elastic and reticular.
- d. Cartilage-hyaline, elastic, white fibro cartilages.
- e. Spongy and compact bones : transverse and longitudinal section.
- f. Muscular tissue: skeletal, cardiac and smooth.
- g. Nervous tissue : peripheral nerve and ganglia.
- h. Blood vessels : artery and vein.
- i. Glands-serous, mucous and mixed salivary glands.
- j. Lymphoid tissue : lymph node, palatine tonsil, thymus and spleen.
- k. Skin-hairy and non hairy.
- l. Endocrine glands : pituitary, thyroid, parathyroid, suprarenal and pancreas
- m. Lip, tongue and esophagus
- n. Trachea and lung

VII. Medical Genetics: 4 Hours

Mitosis, Meiosis, Chromosomes, Chromosomal aberrations, Genes and modes of inheritance.

Practicals : 175 Hours

MUST KNOW :

Dissection Topics:

1. Scalp.
2. Face including deeper dissection.
3. Posterior triangle of neck.
4. Anterior triangles of neck.
 - a. Median region.
 - b. Diastric triangle.
 - c. Carotid triangle.
5. Deep dissection of neck :
 - a. Thyroid gland.
 - b. Great vessels of neck.
6. Parotid region.
7. Infra temporal fossa :
 - a. Muscles of mastication.
 - b. Mandibular nerve and its branches.
 - c. Maxillary artery.
 - d. Temporo-mandibular joint.
8. Sub-mandibular region : submandibular gland, hyoglossus and its relations.
9. Mouth, palate and pharynx.
10. Nasal cavity and paranasal air sinuses.
11. Tongue.
12. Larynx.

Surface Anatomy :

Superior sagittal sinus, middle meningeal artery, pterion, facial artery, parotid gland and duct, facial nerve on face, common carotid, external and internal carotid arteries, palatine tonsil, vocal cords, thyroid gland, spinal accessory nerve.

Radiological Anatomy :

Anteroposterior and lateral views of head and neck, interpretation of normal radiological anatomy.

Histology Slides : for Practical examination as spotters and for discussion.

1. Epithelium : simple squamous (mesentery), cuboidal (thyroid), columnar (gallbladder), ciliated columnar, pseudo-stratified ciliated columnar (trachea), stratified squamous keratinised (skin), stratified squamous non-keratinised (oesophagus), transitional (urinary bladder).
2. Areolar tissue.
3. Collagen fibres.
4. Elastic fibres.

5. Cartilage : hyaline, elastic and white fibro.
6. Bone : transverse and longitudinal section.
7. Muscles : skeletal (transverse and longitudinal section), cardiac and smooth.
8. Blood vessels : large sized and medium sized artery, large and medium sized vein.
9. Peripheral nerve and ganglia.
10. Salivary glands : serous, mucous and mixed.
11. Lymph node.
12. Palatine tonsil.
13. Thymus.
14. Spleen.
15. Skin : hairy and non hairy.
16. Lip.
17. Tooth.
18. Tongue.
19. Trachea.
20. Oesophagus.
21. Lung.
22. Endocrine glands : thyroid, parathyroid, pituitary and suprarenal.
23. Pancreas.

DESIRABLE TO KNOW (for demonstration) :

1. Ear-external, middle and internal.
2. Spinal cord.
3. Brain Stem.
4. Cerebellum.
5. Cerebral hemispheres : important gyri and sulci of superolateral, medial and inferior surface; functional areas – sensory, motor, auditory, visual, gustatory and speech areas, blood supply of brain.
6. Cranial nerves in general with functions other than V, VII, IX, X, XI, XII.
7. Organs of thorax and abdomen.
8. Extremities : upper and lower limbs.
9. Histology of
 - a. Stomach : fundus and pylorus.
 - b. Small intestine : duodenum, jejunum and ileum.
 - c. Large intestine : colon and appendix.
 - d. Liver and gall bladder.
 - e. Kidney, ureter and urinary bladder.
 - f. Ovary and testis.

Scheme of Examination

A. Theory : 70 Marks

Duration of paper – 3 Hours

Contents	No. of Questions and Marks	Total Marks
1. Multiple Choice Questions	M.C.Q. 20 x 1 Mark	20
2. Long Essays Gross Anatomy of Head and Neck – Scalp, Face, Triangles of Neck, Dural folds and Venous sinuses, contents of the Orbit excluding Eye ball, Parotid Gland, Infratemporal fossa, Temporo-mandibular joint, Submandibular region, Thyroid gland, Pharynx, Tongue, Nasal Cavity and paranasal air sinuses. Cranial nerves – V, VII, IX and XII, Development of Branchial apparatus, Face, Systemic Embryology and Systemic Histology.	2 x 10 Marks	20
3. Short Answers Gross Anatomy of Head and Neck – Scalp, Face, Cervical fascia, Midline structures of the neck, Vertebral Joints of Neck, Contents of the Orbit excluding Eyeball, Vessels of Head and Neck, Infratemporal fossa, Mouth, Palate, Pharynx, Nasal Cavity, larynx, Cervical Part of Trachea and Oesophagus, Lymphatic drainage of Head and Neck. Cranial nerves – V, VII, IX, XI and XII. Cervical Plexus. General and Systemic embryology, histology and osteology of Head and Neck, Medical Genetics.	10 x 3 Marks	30
Grand Total		70

B. Practicals : 90 Marks

Gross Anatomy:

- | | | |
|---|----------|----------|
| a) Ten Spotters carrying 3 marks each | 10 x 3 = | 30 marks |
| b) Discussion on ONE given dissected specimen | | 15 marks |
| c) Surface Anatomy | | 10 marks |

Histology:

- | | | |
|---|----------|----------|
| a) Identification of 10 Slides of 1 mark each | | 10 marks |
| b) Discussion on TWO given slides. | 2 x 10 = | 20 marks |

Records :

05 marks

Total : 90 marks

C) Viva Voce : 20 Marks

- | | |
|-----------------------------------|-----------------|
| a) Osteology of Head and Neck | 05 marks |
| b) Soft parts from Head and Neck. | 05 marks |
| c) Embryology Models. | 05 marks |
| d) Radiological Anatomy. | <u>05 marks</u> |

Total : 20 marks

D) Internal Assessment:

Theory : 10 Marks

Practicals : 10 Marks

Theory Examination	70 marks
Theory Internal Assessment	10 marks
Viva Voce	<u>20 marks</u>
Total :	<u>100 marks</u>

Practical Examination	90 marks
Practical Internal Assessment	<u>10 marks</u>
Total :	<u>100 marks</u>

Recommended Books :

Sl. No.	Title	Author	Edition	Yr. of Publ.	Publisher
1.	Cunningham's Manual of Practical Anatomy(Vol.1)	Romanes G.J.	15 th	2004	Oxford Medical Publications, Oxford.
2.	Cunningham's Manual of Practical Anatomy(Vol.3)	Romanes G.J.	15 th	2004	Oxford Medical Publications, Oxford.
3.	Essentials of Human Anatomy (Vol.2) Head and Neck	Dutta A. K.	4 th	2005	Current books International, Kolkata
4.	Human Embryology	Inderbir Singh	7 th	2001	Macmillan India Ltd. Chennai
5.	Langman's Medical Embryology	Sadler T.W.	9 th	2004	Lippincott Williams and Wilkins, Baltimore
6.	Text Book of Human Histology	Inderbir Singh	5 th	2006	Jaypee Brothers Medical Publishers, Delhi

Reference Books :

Sl. No.	Title	Author	Edition	Yr. of Publ.	Publisher's Name, Place of Publication
1.	Gray's Anatomy	Susan Standring	39 th	2005	Elsevier Churchill Livingstone, Edinburgh
2.	Last's Anatomy Regional and Applied	Chummy S.Sinnatamby	10 th	1999	Churchill Livingstone, Edinburgh
3.	Grant's Method of Anatomy	John V. Basmajian	11 th	1997	B.I.Waverly, New Delhi.
4.	Lee Mc.Gregor's Synopsis of Surgical Anatomy	Decker G.A.G.	12 th	1999	K.M.Varghese, Bombay
5.	Emery's Elements of Medical Genetics	Mueller R.F.	11 th	2001	Churchill Livingstone, Edinburgh

GENERAL HUMAN PHYSIOLOGY AND BIOCHEMISTRY, NUTRITION AND DIETICS

GENERAL HUMAN PHYSIOLOGY

GOAL :

The broad goal of teaching physiology to undergraduate students is to provide comprehensive knowledge of the normal functions of the organ systems of the body and to facilitate an understanding of the physiological basis of health and disease.

OBJECTIVES :

a) KNOWLEDGE

At the end of the I BDS course, the student should be able to :

1. Explain the normal functioning of all the organ systems and their interactions for well co-ordinated total body function.
2. Assess the relative contribution of each organ system towards the maintenance of the milieu interior.
3. List the physiological principles underlying the pathogenesis and treatment of disease.
4. Acquire an integrated knowledge of organ structure and function and its regulatory mechanisms.

b) SKILLS

At the end of the I BDS course, the student should be able to :

1. Conduct experiments designed for the study of physiological phenomena.
2. Interpret experimental and investigative data.
3. Distinguish between normal and abnormal data derived as a result of tests which he/she has performed and observed in the laboratory.

COURSE CONTENTS

Theory : 120 Hours

I. General Physiology : 6 Hours

- a. Homeostasis: Basic concept, Feed back mechanisms.
- b. Structure of cell membrane, transport across cell membrane.
- c. Membrane potentials.
- d. Functions of skin.

II. Blood : 20 Hours

Composition and functions of blood.

Specific gravity, Packed cell volume, factors affecting and methods of determination.

Plasma proteins : Types, concentration, functions and variations.

Erythrocyte : Morphology, functions and variations. Erythropoiesis and factors affecting erythropoiesis.

ESR : Methods of estimation, factors affecting, variations and significance.

Haemoglobin : Normal concentration, method of determination and variation in concentration.

Blood Indices : MCV, MCH, MCHC - definition, normal values, variation.

Anemia : Definition, classification, life span of RBC's destruction of RBC's , formation and fate of bile pigments, Jaundice - types.

Leucocytes: Classification, number, percentage, distribution morphology, properties, functions and variation. Role of lymphocytes in immunity, leucopoiesis life span and fate of leucocytes.

Thrombocytes : Morphology, number, variations, function and thrombopoiesis.

Haemostasis : Role of vasoconstriction, platelet plug formation in haemostasis, coagulation factors, intrinsic and extrinsic pathways of coagulation, clot retraction. Tests of haemostatic function, platelet count, clotting time, bleeding time, prothrombin time - normal values, method and variations. Anticoagulants - mechanism of action. Bleeding disorders.

Blood groups: ABO and Rh system, method of determination, importance, indications and dangers of blood transfusion, blood substitutes.

Blood volume: Normal values, variations.

Body fluids : Distribution of total body water, intracellular and extracellular compartments, major anions and cations in intra and extra cellular fluid.

Tissue fluids and lymph : Formation of tissue fluid, composition, circulation and functions of lymph, Oedema and its causes.

Functions of reticulo endothelial system.

III. Muscle and nerve physiology : 10 Hours

- a. Neurons: Morphology, Classification. Resting membrane potential, action potentials.
- b. Properties of nerve fibres : Conduction of impulses in myelinated and unmyelinated fibers.
- c. Neuroglia: Types and Functions.
- d. Muscles: Types, structure of skeletal muscle, sarcomere. Properties molecular mechanism of contraction, Strength – duration curve, utilization time, rheobase and chronaxie.
 - Structure and properties of cardiac & smooth muscles
 - Neuromuscular transmission

IV. Digestive system : 10 Hours

- a. Introduction to digestion : General structure of G.I. tract, Innervation.
- b. Salivary glands: Structure. Composition, regulation, secretion and functions of saliva.
- c. Stomach: Composition and functions of gastric juice, mechanism and regulation of gastric secretion.
- d. Exocrine Pancreas : Structure. Composition, functions and regulation of pancreatic secretion.
- e. Liver : Structure. Composition, functions and regulation of bile secretion.
- f. Gall bladder : Structure and functions.
- g. Small intestine : Composition, functions and regulation of secretion of intestinal juice.
- h. Large intestine : Functions.
- i. Motor functions of GIT: Mastication, deglutition, gastric filling and emptying. Movements of small and large intestine, and defecation.

V. Excretory system : 8 Hours

- a. Structure and functions of kidney and functional unit of kidney and functions of different parts.
- b. Juxta glomerular apparatus and renal blood flow.
- c. Formation of Urine : Glomerular filtration rate - definition, determination, normal values and influencing factors.
- d. Tubular reabsorption : Reabsorption of sodium, glucose, water and other substances.
- e. Tubular secretion : Secretion of urea, hydrogen and other substances.
- f. Mechanism of concentration and dilution of urine
- g. Role of kidney in the regulation of pH of the blood.
- h. Micturition : Anatomy of innervations of urinary bladder. Mechanism of micturition and its abnormalities.

VI. Endocrinology: 14 Hours

- a. General endocrinology : Enumeration of endocrine glands and hormones. General functions of endocrine system. Chemistry, mechanism, transport, metabolism and regulation of secretion of hormones.
- b. Hormones of anterior and posterior pituitary : Actions, regulation, secretion and disorders.
- c. Thyroid : Synthesis, secretion and transport, actions, regulation, and disorders of hormones. Thyroid function tests.
- d. Adrenal Cortex and Medulla : Synthesis, secretion, action, metabolism, regulation of secretion of hormones and disorders.
- e. Other hormones : Angiotensin, action of insulin and diabetes mellitus.

VII. Reproductive system

- a. Sex differentiation, physiological anatomy of male and female sex organs
- b. Female reproductive system : Menstrual cycle, functions of ovary, action of oestrogen and progesterone, Control of secretion of ovarian hormones, Tests of ovulation, Fertilization, Implantation, Maternal changes during pregnancy, Pregnancy tests and Parturition.
- c. Lactation, composition of milk, factors controlling lactation, milk ejection reflex.
- d. Male reproductive system : Spermatogenesis, semen and contraception.

VIII. Cardio vascular system : 20 Hours

- a. Functional anatomy and innervation of heart. Properties of cardiac muscle.
- b. Origin and propagation of cardiac impulse and heart block.
- c. Electrocardiogram (ECG) : Normal ECG. Changes in ECG in myocardial infarction.
- d. Cardiac cycle : Phases. Pressure changes in atria, ventricles and aorta.
- e. Volume changes in ventricles. Jugular venous pulse, arterial pulse.
- f. Heart sounds: Murmurs.
- g. Heart rate: Normal value, variation and regulation.
- h. Cardiac output: Definition, normal values, one method of determination, variations factors affecting heart rate and stroke volume.
- i. Arterial blood pressure: Definition, normal values and variations, determinants, regulation and measurement of blood pressure.
- j. Coronary circulation
- k. Cardio vascular homeostasis : Exercise and posture.

IX. Respiratory system : 10 Hours

- a. Functional anatomy of respiratory passage and lungs.
- b. Physiology of Respiration: External and internal respiration.
- c. Respiratory movements: Muscles of respiration, Mechanism of inflation and deflation of lungs.

- d. Intra pleural and intra pulmonary pressures and their changes during the phases of respiration.
- e. Mechanics of breathing : Surfactant, compliance and work of breathing.
- f. Spirometry: Lung volumes and capacities definition, normal values, significance, factors affecting vital capacity, variations in vital capacity, forced expiratory volume (FEV) and its variations.
- g. Pulmonary ventilation : Alveolar ventilation and Dead Space – ventilation
- h. Composition of inspired, alveolar and expired air.
- i. Exchange of gases : Diffusing capacity and factors affecting it.
- j. Transport of oxygen and carbon dioxide in the blood
- k. Regulation of respiration : Neural and chemical.
- l. Hypoxia, cyanosis, dyspnoea and periodic breathing.
- m. Artificial respiration and pulmonary function tests (PFT).

X. Central nervous system : 16 Hours

- a. Organization and functions of central nervous system.
- b. Structure and functions of spinal cord.
- c. Synapse receptors, reflexes, sensations and tracts.
- d. Physiology of pain.
- e. Functions of cerebellum, thalamus, hypothalamus and cerebral cortex.
- f. Formation and functions of cerebro spinal fluid (CSF).
- g. Autonomic nervous system (ANS) : Sympathetic and parasympathetic systems.
- h. Body temperature regulation.

XI. Special senses: 6 Hours.

Fundamental knowledge of taste and smell

- Vision :** Functions of the different parts of the eye and refractive errors.
- Audition :** Functions of outer, middle and inner ear.
Deafness : Types and tests.
- Taste :** Taste buds.
Primary taste sensations.
Taste pathway.
- Smell :** Receptors.
Olfactory pathway.

Practicals : 60 Hours.

MUST KNOW

1. Study of microscope and its uses.	04
2. Collection of blood and study of haemocytometer.	02
3. Haemoglobinometry.	02
4. Determination of RBC count.	08
5. Determination of WBC count.	04
6. Determination of Blood Groups.	04
7. Leishman's staining and differential leukocyte count.	10
8. Calculation of blood indices.	02
9. Determination of bleeding time.	02
10. Determination of clotting time.	02
11. Blood pressure recording.	04
12. Auscultation of heart sounds.	02
13. Clinical examination of pulse.	02
Total	48

DESIRABLE TO KNOW (for demonstration) :

1. Determination of Erythrocyte sedimentation rate (ESR) and Packed cell volume (PCV).	02
2. Determination of Specific gravity of blood and Fragility test for RBC.	02
3. Clinical examination of Respiratory system and Cardiovascular system.	02
4. Determination of vital capacity and timed vital capacity.	02
5. Artificial respiration.	02
6. Demonstration of deep and superficial reflexes.	02
7. Skeletal muscle experiments Study of laboratory appliances in experimental physiology, Frog's gastrocnemius-sciatic nerve preparation, Simple muscle twitch, Effects of two successive stimuli, Effects of increasing strength of stimulus, Effects of temperature, Genesis of fatigue and tetanus, Effect of after load and free load on muscle contraction, calculation of work done.	
8. Electrocardiography : Recoding of normal ECG	
Total	12

Scheme of Examination

A.) Theory: 35 Marks.

Duration of paper : 1 Hour 30 Mins.

Type of Questions	No. of Questions and Marks	Total Marks
1. Multiple Choice Questions	M.C.Q. 1 x 10 marks	10
2. Long Essay Questions preferably from Blood. Gastrointestinal system. Cardiovascular system. Respiratory system. Endocrines. Central nervous system.	1X10 marks	10
3. Short Answer Questions could be from all the chapters.	5X3 marks	15
	Total	35 Marks

B) Practicals : 45 Marks.

I) Major Experiments :

20 marks

Any one of the Major Experiments:

R.B.C. Count.

W.B.C. Count.

Differential Count.

Blood Pressure Recording.

II) Minor Experiments :

10 marks

Any one of the Minor Experiments:

Determination of Blood Group

Determination of Bleeding and Clotting time

Haemoglobin Estimation

Calculation of absolute Haematological

Indices- MCH, MCV, MCHC

III) Clinical Exercises:

10 marks

IV) Record Books

05 marks

Total : 45 Marks

C) Viva Voce : 10 Marks

D) Internal Assessment: (Physiology and Biochemistry)*

Theory Examination 5 Marks

Practical Examination 5 Marks

*** Average IA marks of Physiology and Biochemistry will be calculated for 10 Marks for final Internal Assessment in Theory and Practical each.**

Recommended books:

Sl. No.	Title	Author	Edn	Yr. of Publ.	Publisher
1.	Text book of Physiology	Arthur C. Guyton	11 th	2006	Prism pub. Bangalore
3	Principal of Anatomy and Physiology	Tortora	8 th	2004	Harper Collins
4	Concise Medical Physiology	Choudhari	4 th	2002	New Central Books, Calcutta.
5	Human Physiology	Chaterjee	11 th	1992	Medical Allied Agency
6	Human Physiology for BDS students	A.K. Jain	3 rd	2005	Avichal Pub. Co.

Reference books :

Sl. No.	Title	Author	Edn	Yr. of Publ	Publisher
1.	Essentials of Medical Physiology	Sembulingam K., Prema Sembulingam	2 nd	2003	Jaypee Brothers Medical Publishers.
2	Review of Medical Physiology	Willinam Ganong	22 nd	2005	Appliton and Lange
3	Manual of practical physiology for BDS	Jain A. K.	-	-	-
4	Practical Physiology	Ranade	4 th	-	-
5	A Text of practical Physiology	Ghai C. L.	-	-	-
6	Hutchison's: Clinical Methods	-	20 th	-	-

BIOCHEMISTRY, NUTRITION AND DIETICS

GOAL :

The broad goal of teaching biochemistry to the undergraduate students is to make them understand the scientific basis of the life processes at the molecular level and to orient them towards the application of the knowledge acquired in solving clinical problems.

OBJECTIVES :

a) KNOWLEDGE

At the end of the I BDS course the student is expected to :

1. Describe the molecular and functional organization of the cell and to study its subcellular components.
2. Delineate structure, function and inter-relationships of bio-molecules and consequences of deviation from normal.
3. Summarize the fundamental aspects of enzymology and clinical applications wherein regulation of enzymatic activity is altered.
4. Describe digestion and assimilation of nutrients and consequences of malnutrition.
5. Integrate the various aspects of metabolism and their regulatory pathways.
6. Explain the biochemical basis of inherited disorders with their associated sequelae.
7. Describe the mechanisms involved in maintenance of body fluid and pH homeostasis.
8. Summarize the molecular concept of body defenses and their application in medicine.
9. Familiarize with the principles of various conventional and specialized laboratory investigations and instrumentation analysis and interpretation of a given data.
10. Suggest experiments to support theoretical concepts and clinical diagnosis.

b) SKILLS

At the end of the I BDS course the student is expected to :

1. Make use of conventional techniques to perform biochemical analysis relevant to clinical diagnosis.
2. Analyze and interpret investigative data.
3. Demonstrate the skills of solving the clinical problems and decision-making.

COURSE CONTENTS

Theory : 70 Hours.

I. Introduction to biochemistry and its scope in Dentistry : 1 Hour.

II. Carbohydrates : 4 Hours.

Definition and classification.

Isomerism of Sugars.

Physiologically important mono, di and polysaccharides.

Glycogen, starch, cellulose.

Mucopolysaccharides– hyaluronic acid, chondroitin sulphate, Karatan sulphate and heparin.

III. Carbohydrate Metabolism: 8 Hours.

- a. Digestion and absorption of carbohydrates.
- b. Glycolysis, Cori's cycle and Citric acid cycle.
- c. Energetics of glucose oxidation.
- d. Glycogenesis and glycogenolysis.
- e. Hexose monophosphate shunt.
- f. Regulation of blood glucose.

IV. Amino Acids: 2 Hours.

- a. Classification based on structure and nutritional importance.
- b. Optical activity.
- c. Isoelectric pH.
- d. Physiologically active peptides.

V. Proteins : 3 Hours.

- a. Definition, classification, structure and functions.
- b. Denaturation.
- c. Plasma Proteins and their separation by Electrophoresis.
- d. Immunoglobulins.
- e. Haemoglobin and its abnormal forms.

VI. Protein Metabolism: 8 Hours.

- a. Digestion and absorption of Amino acids.
- b. Synthesis of Proteins.
- c. Deamination, transamination and decarboxylation of Amino acids.
- d. Production and fate of ammonia.
- e. Urea cycle pathway.
- f. Methionine and Phenylalanine metabolism.
- g. Phenylketonuria, Albinism and Alkaptonuria.

VII. Lipids: 4 Hours.

- a. Definition, classification and functions.
- b. Fatty acids, neutral fats, phospholipids, cholesterol and lipoproteins.

VIII. Lipid Metabolism: 6 Hours.

- a. Digestion and absorption of lipids.
- b. Beta oxidation of fatty acids and its energetics.
- c. Ketone body formation and utilization.
- d. Ketoacidosis.

IX. Nucleic acids: 3 Hours.

- a. Composition and structure.
- b. Types of Deoxyribonucleic acid (DNA) and Ribonucleic acid (RNA).
- c. Nucleosides, nucleotides and their importance.

X. Enzymes: 6 Hours.

- a. Definition, classification, properties of enzymes, coenzymes and cofactors & chemical nature.
- b. Enzyme specificity and mechanism of action.
- c. Holoenzyme and proenzyme.
- d. Isoenzyme.
- e. Factors influencing enzyme activity.
- f. Enzyme inhibition –types and examples.
- g. Diagnostic enzymes

XI. Vitamins: 8 Hours.

- a. Definition, classification, chemistry, sources, requirement and functions.
- b. Metabolic role and deficiency signs of vitamin A, D, E, K, C., Thiamin, Riboflavin, Niacin, Pyridoxine, Folic Acid and Cyanocobalamine.

XII. Mineral metabolism: 5 Hours.

Distribution, sources, functions, requirements, absorption, metabolic effects and deficiency of Calcium, Phosphorus, Iron, Iodine and Fluorine.

XIII. Nutrition and Dietetics: 5 Hours.

- a. Dietary factors, Basal Metabolic Rate (BMR),
- b. Biological value of protein, R,Q, SDA. Essential amino acids.
- c. Dietary fiber, Essential fatty acids & Balanced diet.

XIV. pH and its biological importance: 2 Hours.

- a. Acids, bases and buffers.
- b. Acid base balance, Acidosis and alkalosis.

XV. Liver Function Tests: 3 Hours.

- a. Liver function tests.

- b. Importance of alkaline phosphatase.
- c. Galactose tolerance test.

XVI. Renal Function Tests: 1 Hour.

Urea and Creatinine clearance test.

XVII. Blood Constituents: 1 Hour.

Normal and abnormal variations of Calcium, Phosphorous, Creatinine, Alkaline and Acid phosphatase, Urea, Cholesterol, Bilirubin, Uric acid and Transaminases.

Practicals : 60 Hours

MUST KNOW

1	Reactions of monosaccharides – glucose & fructose.	3 hrs
2	Reactions of disaccharides – lactose, maltose and sucrose.	3 hrs
3	Preparation of osazones from glucose, fructose, lactose & maltose.	3 hrs
4	Reactions of polysaccharides – Starch.	3 hrs
5	Identification of an unknown carbohydrate.	3 hrs
6	Colour reactions of proteins – albumin.	3 hrs
7	Colour reactions of proteins – casein.	3 hrs
8	Precipitation reactions of albumin.	3 hrs
9	Precipitation reactions of – casein.	3 hrs
10	Identification of an unknown protein.	3 hrs
11	Reactions of urea, uric acid and creatinine.	3 hrs
12	Identification physiologically important substances.	3 hrs
13	Composition of saliva and digestion of starch by salivary amylase.	3 hrs
14	Qualitative analysis of gastric juice –normal and abnormal contents	2 hrs
15	Urine analysis – normal constituents	2 hrs
16	Urine analysis – abnormal or pathological constituents.	2 hrs
17	Determination of creatinine concentration in urine, calculation of creatinine clearance.	2 hrs
18	Estimation of Blood glucose.	2 hrs
19	Estimation of Blood urea.	2 hrs
20	Estimation of Total Protein in serum.	2 hrs

DESIRABLE TO KNOW (for demonstration) :

1	Colorimeter.	1 hr
2	Electrophoresis & Chromatography.	1 hr
3	Estimation of Serum calcium and phosphorus.	1 hr
4	Estimation of Bilirubin.	1 hr
5	Preparation of haemin crystals.	1 hr
6	Discussion of clinical charts – Glucose Tolerance Test (GTT).	1 hr
7	a. Spotting of specimens – Haemin, Osazone – Microscopy, Ryle's tube, Folin – Wu tube.	1 hr
	b. Urinometer.	
	c. Tests – Biuret reaction, Millon's reaction, Jaffe's reaction, Barfoed's reaction.	

Scheme of Examination

A) Theory : 35 Marks.

Duration of paper – 1 Hour 30 minutes.

Contents	No. of Questions and Marks	Total Marks
1. Multiple Choice Questions	10 X 1 mark	10
2. Long Essay Questions preferably from : Chemistry of Carbohydrates, proteins, lipids and amino acids. Metabolism of carbohydrates, protein, lipids, nucleic acids and minerals. Fat soluble and water soluble vitamins. Enzymes.	1 X 10 marks	10
3. Short Answers Questions preferably from All the above chapters. Nutrition and Dietics, Acid base balance, Liver and kidney function tests and Blood constituents	5 X 3 = 15 marks	15
	Total	35

B) Practicals : 45 Marks

- | | |
|---|-----------------|
| a. One Procedure for quantitative estimation. | 20 Marks. |
| b. One Procedure for qualitative analysis. | 15 Marks. |
| c. 5 spotters. | 05 Marks. |
| d. Record books | <u>05 Marks</u> |

Total : 45 Marks.

C) Viva Voce : 10 Marks

D) Internal Assessment: *

Theory Examination : 5 Marks

Practical Examination : 5 Marks

*** Average IA marks of Physiology and Biochemistry will be calculated for 10 Marks for final Internal Assessment in Theory and Practical each.**

Recommended Books :

Sl. No.	Title	Author	Edn.	Yr. of Publ	Publisher
1.	A Text book of Biochemistry for Dental Students.	Harbans lal	1 st	1995	CBS Pub. New Delhi.
2.	Concise Medical Biochemistry.	Pattabhiraman	--	1986	Prithvi Pub. Bangalore.
3.	Fundamentals of Biochemistry.	Deb A. C.	6 th	1998	New Central Book Agency Calcutta.
4.	Text Book of Biochemistry.	Rama Rao AVS	7 th	1995	UBSPD with LKS pub. Vishakapatnam.
5.	Textbook of Medical Biochemistry.	Ramakrishnan S. Prasannan K G. Rajan R.	3 rd	2001	Orient Longman Hyderabad.

Reference Books :

Sl. No.	Title	Author	Edn.	Yr. of Publ	Publisher
1.	Review of Biochemistry.	Harpers	24 th	1996	USA Appleton and Lange Publ.
2.	Basic and Applied Dental Biochemistry.	William R.D. & Elliot J. C.	2 nd	1990	Singapore. Langman Pub.
3.	Principles of Biochemistry.	Albert Lehninger	2 nd	1993	New Delhi CBS pub.

DENTAL ANATOMY, HISTOLOGY INCLUDING EMBRYOLOGY AND PHYSIOLOGY

GOALS:

The subject of Dental Anatomy, Histology including Embryology and Physiology aims at imparting knowledge in understanding the structure, function, genesis, morphology, physiology and histology of normal tissues associated with oral cavity.

OBJECTIVES:

a) KNOWLEDGE:

After a course on Dental Anatomy, Histology including Embryology and Physiology,

- 1) The student is expected to know morphology, histology, physiology and embryology with clinical applications so as to impart this understanding for diagnosing oral diseases in future.
- 2) The student should understand the histological basis and physiologic aging process in the dental tissues so as to apply this knowledge in various dental treatment procedures.
- 3) The students must acquire the basic knowledge of microscope and various methods of preservation of tissues (hard and soft tissues), different staining techniques and their visualization under microscope.

b) SKILLS:

The student should acquire basic skills in: -

- 1) Identification of deciduous & permanent teeth.
- 2) Age estimation by patterns of teeth eruption from plaster cast of different age groups.
- 3) Microscopic study of oral tissues.
- 4) Carving of crown and root of permanent teeth in wax.

COURSE CONTENT

Theory : 105 Hours

I. Dental Anatomy:

40 Hours

1. Introduction to Dental Anatomy : 4 Hrs
 - a. Functions of Teeth
 - b. Nomenclature
 - c. Tooth Numbering System
 - d. Chronology of Deciduous and Permanent Teeth
 - e. Definitions and Terms used in Dental Morphology
2. Morphology of Deciduous Teeth : 5 Hrs
3. Clinical significance of morphology of Deciduous Teeth : 2 Hrs
4. Morphology of Permanent Teeth : 2 Hrs
5. Clinical significance of morphology of Permanent Teeth : 15 Hrs
6. Anatomy of the Pulp : 2 Hrs
7. Differences between Deciduous and Permanent Teeth : 2 Hrs
8. Occlusion : 5 Hrs
 - a. Development of occlusion.
 - b. Dental Arch Form.
 - c. Compensating curves of dental arches.
 - d. Angulations of individual teeth in relation to various planes.
 - e. Functional form of the teeth.
 - f. Facial relations of each tooth.
 - g. Occlusal contact and intercuspal relations of all teeth during centric occlusion
 - h. Occlusal contact and intercuspal relations of all teeth during functional movements.
 - i. Neurobehavioral aspects of occlusion.
 - j. Clinical significance of normal occlusion.
9. Temporomandibular Joint: 2 Hrs
 - a. Gross anatomy and articulation.
 - b. Muscles of mastication.
 - c. Histology.
 - d. Clinical Considerations with emphasis on Myofacial pain dysfunction syndrome
10. Dental Anthropology and Comparative Dental Anatomy: 1 Hrs

II. Oral Embryology :

10 Hours

Brief review of development of face with applied aspects: 2 Hrs

Development of teeth and the supporting tissues: 8 Hrs

- a. Blood supply, nerve supply and lymphatic drainage of teeth
- b. Applied aspect of disorders in development of teeth.

III. Oral Histology :

45 Hours

1. Oral mucous membrane: 8 Hrs

- a. Definition and clinical features.
- b. Functions and classifications.
- c. Structure and microscopic appearance of gingiva, palate, lip, alveolar mucosa, tongue, cheek, vestibule and floor of mouth.
- d. Gingival sulcus and dentogingival junction.
- e. Clinical considerations and age changes.

2. Eruption and shedding of deciduous and permanent teeth: 4 Hrs

- a. Factors affecting and mechanism of eruption and shedding.
- b. Complications in eruption and shedding.

3. Enamel: 7 Hrs

- a. Development and structure.
- b. Clinical significance and age changes.

4. Dentin: 5 Hrs

- a. Development and structure.
- b. Clinical significance and age changes.

5. Cementum: 3 Hrs

- a. Development and Structure.
- b. Clinical significance and age changes.

6. Pulp: 5 Hrs

- a. Development.
- b. Anatomy, structure, function.
- c. Clinical significance and age changes.

7. Periodontal Ligament: 3 Hrs

- a. Development.
- b. Cells and fibers.
- c. Function.
- c. Clinical significance and age changes.

8. Alveolar Bone: 3 Hrs

- a. Development and structure.
- b. Functions and clinical considerations.

9. Salivary Glands: 4 Hrs

- a. Development and structure.
- b. Classification, functions, clinical considerations and age changes.

10. Maxillary Sinus: 3 Hrs

- a. Structure.
- b. Functions and clinical considerations.

IV. Oral Physiology :

10 Hours

1. Saliva: 2 Hrs

- a. Composition, formation, mechanism of secretion.
- b. Clinical considerations and functions.

2. Physiology of taste : 1 Hr

3. Innervation of taste buds and taste pathway.

4. Physiology of speech : 2 Hrs

- a. Basic anatomy of larynx and vocal cords.
- b. Voice production- Role of palate, teeth and tongue.
- c. Applied aspects.

5. Mastication: 1 Hr

- a. Masticatory muscles, masticatory reflexes.
- b. Blood supply, nerve supply, lymphatic drainage.
- c. Neural control of mastication, clinical significance.

6. Deglutition: 1 Hr

- a. Mechanism, neural control.
- b. Clinical significance.

7. Calcium, Phosphorous and Fluorides metabolism and its clinical considerations : 1 Hr

8. Theories of mineralization: 2 Hrs

- a. Mechanism, theories and their drawbacks.
- b. Clinical consideration -Calculus formation

PRACTICALS : 250 Hours

1. Dental Morphology :

150 Hours

- a. Carving on the wax block: 10 Hrs
Shapes: Rectangle, Cone, Half dumbbell, Full dumbbell
- b. Carving on wax blocks: 100 Hrs
Individual permanent teeth of both the arches upto 1st molar
- c. Identification of individual teeth from extracted teeth specimen : 20 Hrs
- d. Identification of dentition using study models: 20 Hrs

2. Dental Histology : 100 Hours

- a. Processing of hard and soft tissues for microscopic study : 6 Hrs
 - Ground sections, decalcified sections and routine staining procedures.
 - Basic histochemical staining patterns of oral tissues
- b. General histology of cells and tissues : 6 Hrs
- c. Special stained sections : 6 Hrs
- d. Histology slides
 - i. Development of tooth : 10 Hrs
 - Bud stage of tooth development
 - Cap stage of tooth development
 - Early bell stage of tooth development
 - Late Bell stage of tooth development
 - Root formation
 - ii. Enamel : 10 Hrs
 - Enamel rod
 - Hunter-Schreger Bands
 - Tufts, Lamellae, Spindles
 - Incremental lines of Retzius
 - Neonatal line
 - Gnarled Enamel
 - iii. Dentin : 10 Hrs
 - Dentino – Enamel junction
 - Dentinal Tubules
 - Incremental lines of Von Ebner
 - Contour lines of Owen
 - Neonatal line
 - Tomes granular layer
 - Interglobular Dentin
 - Secondary Dentin
 - Intratubular Dentin
 - Intertubular Dentin

- iv. Cementum : 6 Hrs
 - Cellular cementum
 - Acellular cementum
 - Cemento- enamel junction
 - Sharpey's fibers
- v. Pulp : 6 Hrs
 - Zones of Pulp
 - Pulp stones
- vi. Periodontal Ligament : 8 Hrs
 - Principal fibers of Periodontal ligament
 - Apical, Horizontal, Oblique, Alveolar crest, Interradicular.
- vii. Alveolar Bone : 5 Hrs
 - Haversian system
 - Trabecular bone
 - Compact bone
- viii. Salivary glands : 8 Hrs
 - Mucous gland
 - Serous gland
 - Mixed gland
- ix. Maxillary Sinus : 2 Hrs
 - Sinus lining (Pseudostratified ciliated columnar)
- x. Oral Mucous Membrane : 10 Hrs
 - Keratinised mucosa- Gingiva, Hard palate.
 - Non-Keratinised mucosa- Buccal mucosa, Soft palate, Labial mucosa, Alveolar mucosa.
 - Vermilion border of lip.
 - Tongue
 - Circumvallate Papillae
 - Fungiform Papillae
 - Filiform Papillae
 - Dentogingival junction
- e. Skull and Mandible : 7 Hrs
 - Important foramens and structures passing through it and attachments of Muscles

SCHEME OF EXAMINATION

A. Theory: 70 Marks

Duration of paper : 3 Hours

Distribution of marks and type of questions

Contents	No. of Questions and Marks	Marks
1) MCQ (Full portion)	MCQ 1X 20 Marks	20
2) Long Essays a. Dental Histology/Dental Anatomy b. Dental Morphology -One Long Essay from Dental Anatomy / Histology Topics: Development of teeth, Enamel, Dentin, Cementum, Periodontal Ligament, Oral mucous membrane, Salivary Glands, Eruption and Shedding, Bone. - One Long Essay Dental Morphology Topics: Morphology of permanent tooth	2 X 10 Marks	20
3) Short Answers a. Dental Morphology – 3 questions b. Oral Histology – 2 questions c. Dental Anatomy – 3 questions d. Oral Physiology – 2 questions Topics: All the above and tooth numbering system, Chronology, nomenclature, Calcium Metabolism, cells.	10X3 Marks	30
Total		70

B. Practical: 90 Marks

Contents	Marks	Time
A. Carving	25	1 Hour 15 Mins
B. Spotters Histology and Ground section slides - 6 Nos Tooth Identification - 3 Nos Casts for Identification, dental formula and age assessment - 3 Nos	5 x 5 = 25 3 X 5 = 15 3 X 5 = 15	1 Hour 15 Mins
C. Records ⇒ Histology ⇒ Morphology ⇒ Carving	10	
Total	90	

C. Viva Voce : 20 Marks

D. Internal Assessment

Theory Examination : 10 Marks

Practical Examination : 10 Marks

Theory Examination	70 marks
Theory Internal Assessment	10 marks
Viva Voce	<u>20 marks</u>
Total :	<u>100 marks</u>

Practical Examination	90 marks
Practical Internal Assessment	<u>10 marks</u>
Total :	<u>100 marks</u>

Recommended Books :

Sl. No.	Title	Author	Edition	Yr. of Publ.	Publisher
1	Orban's Oral Histology and Embryology	Orban's	10 th	1986	Mosby
2	Dental Anatomy, Physiology and Occlusion	Wheeler's	8 th	2003	Elsevier
3	Dental anatomy histology and development	Bhalaji S.I	2 nd	2005	Arya

Reference Books :

Sl. No.	Title	Author	Edition	Yr. of Publ.	Publisher
1	Oral Histology-Development, Structure and Function	Tencate A.R.	6 th	2003	Mosby
2.	Manual of Oral Histology and Oral Pathology : Color Atlas	Maji Jose	1 st	2006	CBS
3.	Carving of Teeth	Biviji A.T.	2 nd	1999	Bhalani
4.	Color atlas of Oral Histology and Morphology	Berkowitz	2 nd	1992	Wolfe
5.	Applied Physiology of the Mouth	Lavelle	2 nd	1988	Butter Worth & Co.

DENTAL MATERIALS

GOAL :

Goal is to emphasize on the basic properties of Dental materials and to provide certain criteria for selection, which will enable to discriminate between facts and propaganda with regards to claims of manufacturers. It also enables the students to apply these materials for clinical practice and keep the students updated with further research, as the knowledge of dental materials is fundamental to the dental education.

OBJECTIVES :

a) KNOWLEDGE

At the end of the I BDS course the student is expected to :

1. Understand the evolution and development of science of dental material.
2. Explain purpose of course in dental materials to personnels concerned with dentistry.
3. Know the physical, chemical and biomechanical properties of various materials used in dentistry.
4. Lay down the standards or specifications of various materials to guide manufacturers as well as to help professionals.
5. Search for newer and better materials, which may answer our requirements with greater satisfaction.
6. Understand and evaluate the claims made by manufacturers of dental materials.
7. Know the biohazards of various dental materials used.

b) SKILLS

At the end of the I BDS course the student is expected to :

1. Acquire skills to manipulate various dental materials used in dentistry.
2. Possess skills to apply dental materials for clinical use.
3. Know the merits and demerits of dental materials.

COURSE CONTENTS

Theory : 20 Hours.

- I. Introduction :** **2 Hours**
- a. Brief History of the development of the science of Dental Materials.
 - b. Aim of studying the science of Dental Materials.
 - c. Scope and requirements of Dental materials.
 - d. Spectrum of materials – Clinical and laboratory applications (Classification of materials).
- II. Structure and behaviour of matter :** **3 Hours**
- a. Basic principles – Physical, mechanical, chemical, biological, rheological and thermal properties of various dental materials and esthetics.
 - b. Enamel, dentine and bone.
 - c. Polymers.
 - d. Metals and alloys.
 - e. Dental porcelain.
 - f. Composites.
 - g. Standardisation and assessment of dental materials.
- III. Impression materials and duplicating materials :** **4 Hours**
- a. Requirements and classification.
 - b. Desirable properties, composition, setting properties, advantages, disadvantages, indications and manipulation of inelastic and elastic materials. (Tray compound, impression compound, Low fusing compound, Impression plaster, Zinc oxide Eugenol impression paste, Non Eugenol paste, Alginate, Agar and Elastomeric impression materials etc.)
 - c. Comparative studies between all. Pressure indicating paste. Tray adhesives.
- IV. Gypsum products :** **3 Hours**
- Gypsum products (Detail), die, cast and model materials (including brief account of electroformed dies). Setting and hygroscopic expansion. Infection control. Die spacers.
- V. Waxes and base plate materials :** **2 Hours**
- a. Properties, manipulation and uses of modelling, casting, boxing, utility, undercut blocking, sticky, impression, carding and preformed wax patterns.
 - b. Thermoplastic endodontic materials – Gutta percha.
- VI. Chemistry of synthetic resins used in dentistry :** **2 Hours**

VII. Denture base resins : 4 Hours.

- a. Tray materials.
- b. Temporary base materials – contents, properties, manipulation, advantages and disadvantages.
- c. Permanent base materials – types, composition, properties and technical consideration (Flasking, packing, curing, deflasking and processing errors).
- d. Comparative studies between metallic and nonmetallic denture base.
- e. Others-Tissue conditioners, soft and hard liners.
- f. Artificial tooth material.
- g. Articulating paper.
- h. Separating media.

Practical : 40 Hours.

Gypsum products : 25 Hours.

1. Manipulation of dental plaster and dental stone.
2. Identify the setting and working time with reference to water proportion and temperature.
Speculation time of various gypsum products.
3. Pouring of impressions and making casts.

Manipulation of waxes : 15 Hours

Note: As per DCI this subject has no Theory or Practical Examination in Ist B.D.S.

Recommended Books :

Sl. No.	Title	Author	Edn.	Yr. of Publ	Publisher
6.	Phillips' Science of Dental Materials	Kenneth. J. Anusavice	11 th	2003	W.B. Saunders Company.
7.	Notes on Dental Materials	Combe E.C	6 th	1992	Churchill Livingstone.
8.	Applied Dental Materials	John. F. Mc. Cabe	8 th	1992	Oxford Blackwell Scientific.
9.	Text Book of Dental Materials	Craig. O. Brien	6 th	1996	Mosby.
10.	Restorative Dental Materials	Craig R.G. Powers J. M.	11 th	2002	Harcourt, India Pvt, Ltd.
11.	Dental Materials	Koudi M.S	1 st	2007	Elsevier, India Pvt, Ltd.

Reference Books :

Sl. No.	Title	Author	Edn.	Yr. of Publ	Publisher
1.	Notes on Dental Materials	Subbarao V.K.	4 th	2001	Paras Medical Pub.
2.	Synopsis of Dental Materials	Gouri Shankar S.	1 st	2004	Paras Medical Pub.
3.	Text book of Dental Materials	Hussain S.	1 st	2004	Jaypee Brothers.

PRE CLINICAL PROSTHODONTICS & CROWN & BRIDGE

GOAL:

Goal is to emphasize on basic principles of teeth arrangement as related to natural dentition and to provide certain criteria for teeth selection and arrangement. It also enables the student to utilize these concepts for their clinical and laboratory applications.

OBJECTIVES:

a) KNOWLEDGE

At the end of the I BDS course the student should be able to:

1. The aim of the course is to present basic principles of teeth arrangement and to provide certain criteria of selection of teeth and arrangement in relation to surrounding oral structures.

b) SKILLS

At the end of the I BDS course the student is expected to :

1. Acquire basic skills of teeth arrangement in class I molar relationship.
2. Posses skills of teeth selection.

COURSE CONTENT:

PRACTICALS : 100 hours

	Hours
1. Base plate adaptation	15
2. Fabrication of occlusal rims	20
3. Mounting of the rims on the articulator	5
4. Arrangement of teeth in class I relation	40
5. Processing of dentures	15
6. Polishing and finishing of dentures	5

Recommended books:

Sl. No.	Title	Author	Edn	Yr. of Publ.	Publisher
1.	Prosthodontic treatment of Edentulous patients	Boucher	12 th	2004	Mosby
2.	Syllabus of complete denture	Heartwell	5 th	1993	Lea & Febiger
3.	Theory and practice of fixed Prosthodontics	Tylman	8 th	1993	Ishiyaku Euro
4.	Removable partial denture	Mc Cracker	11 th	2005	CBS
5	Sciences of dental materials	Skinner	11 th	2003	W. B. Saunders Co.
6	Dental materials Properties and manipulation	Craig	11 th	1993	Mosby

ENVIRONMENTAL STUDIES

GOAL:

The students should gain knowledge to understand the multidisciplinary nature of the environment and the awareness of the echo system, which maintains the natural environment.

OBJECTIVES :

a) KNOWLEDGE

At the end of the I BDS course the student is expected to know :

1. The natural resources like forest, water, mineral, food, energy and land.
2. Functions of the echo system.
3. Bio-diversity and its conservation.
4. Environmental pollution.
5. Social issues.

b) SKILLS

At the end of the I BDS course the student is expected to :

1. Visit local areas to understand and document environmental assets like river, forest, grassland, hill and mountain.
2. Visit an industrial area or agricultural area to know about local pollutants.
3. Identify common plants, insects and birds in their local areas.
4. Identify rivers, hills and mountains in their local areas.
5. To make use of the knowledge to maintain the surrounding environment.

COURSE CONTENTS

Theory and Field work : 50 Hours

1. The multidisciplinary nature of environmental studies : 2 Hours

- a. Definition, scope and importance
- b. Need for public awareness

2. Natural Resources: 8 Hours

Renewable and non-renewable resources

Natural resources and associated problems.

- a. Forest resources: Use and over-exploitation, deforestation, case studies. Timber extraction, mining, dams and their effects on forests and tribal people.
- b. Water resources: Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams-benefits and problems.
- c. Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources, case studies.
- d. Food resources: World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity case studies.
- e. Energy resources: Growing energy needs, renewable and non-renewable energy sources, use of alternate energy sources, case studies.
- f. 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.

3. Ecosystems : 6 Hours

- a. Concept of an ecosystem
- b. 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)

4. Biodiversity and its conservation :

8 Hours

- a. Introduction - Definition: genetic, species and ecosystem diversity
- b. Biogeographical classification of India
- c. Value of biodiversity: consumptive use, productive use, social, ethical aesthetic and option values
- d. Biodiversity at global, national and local levels
- e. India as a mega-diversity nation
- f. Hot-spots of biodiversity
- g. Threats to biodiversity: habitat loss, poaching of wildlife, man wildlife conflicts
- h. Endangered and endemic species of India
- i. Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity

5. Environmental Pollution :

8 Hours

Definition

- a. Causes, effects and control measures of:
 - ❖ Air pollution
 - ❖ Water pollution
 - ❖ Soil pollution
 - ❖ Marine pollution
 - ❖ Noise pollution
 - ❖ Thermal pollution
 - ❖ Nuclear pollution
- b. Solid waste management: Causes, effects and control measures of urban and industrial wastes.
- c. Role of an individual in prevention of pollution.
- d. Pollution case studies.
- e. Disaster management: floods, earthquake, cyclone and landslides.

6. Social Issues and the Environment :

7 Hours

- a. From unsustainable to sustainable development
- b. Urban problems and related to energy
- c. Water conservation, rain water harvesting, watershed management
- d. Resettlement and rehabilitation of people; its problems and concerns. Case studies.
- e. Environmental ethics: Issues and possible solutions
- f. Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust. Case studies.
- g. Wasteland reclamation
- h. Consumerism and waste products

- i. Environmental Protection Act
- j. Air (Prevention and Control of Pollution) Act.
- k. Water (Prevention and control of Pollution) Act.
- l. Wildlife Protection Act.
- m. Forest Conservation Act.
- n. Issues involved in enforcement of environmental legislation.
- o. Public awareness.

7. Human Pollution and the Environment :

6 Hours

- a. Population growth, variation among nations.
- b. Population explosion – Family Welfare Programmes.
- c. Environment and human health.
- d. Human Rights
- e. Value Education
- f. HIV/ AIDS
- g. Women and Child Welfare
- h. Role of Information Technology in Environment and Human Healthy.
- i. Case Studies.

8. Field Work :

5 Hours

- a. Visit to a local area to document environmental assets river / forest / grassland / hill / mountain.
- b. Visit to a local polluted site – Urban / Rural / Industrial / Agricultural
- c. Study of common plants, insects, birds.
- d. Study of simple ecosystems – pond, river and hill slopes.

Institutional examination at the end of first BDS

Scheme of Examination

A. Theory : 75 Marks.

- ❖ Short Answers 5 X 5 = 05 Marks
- ❖ Essay 5 X 10 = 50 Marks

B. Field Work : 25 Marks

Recommended Books

Sl. No.	Title	Author	Edition	Year	Publisher
1	Environmental Biology	Sharma P. D.	2 nd	2000	Rastogi Publications
2	Environmental Problem & Solutions	Asthana & Asthana	3 rd	2001	S. Chan & Company Ltd.
3	Environmental Protection & the Law	Mehta C. S.	1 st	2000	Ashish Publishing House
4	Environmental pollution	Tunny Katyal, M. Satake	10 th	1998	Anmol Publication

LAW - INDIAN CONSTITUTION

GOAL:

The students should gain the knowledge and insight into the Indian Constitution so that they are aware of the fundamental rights and freedom bestowed through the democratic governance of our country.

OBJECTIVES :

a) KNOWLEDGE

At the end of the I BDS course the student is expected to know :

1. Basic knowledge of the Indian Constitution.
2. Democratic institutions created by the Constitution.
3. Special rights created by the Constitution for regional and linguistic minorities.
4. Election commission.
5. Legislative, Executive and Judicial powers and their functions in India.

b) SKILLS

At the end of the I BDS course the student is expected to make use of knowledge :

1. To perform his / her duties towards the society.
2. Judiciously and with conscious effort for self-development.
3. To utilize state policies in their future practice.

COURSE CONTENTS

Theory : 25 Hours

Unit – I	a. Meaning of term Constitution b. Making of the Indian Constitution – 1946 – 1949 and role played by Dr. B. R. Ambedkar. c. Salient Features of the Constitution. d. Preamble of the Constitution	2 Hours
Unit II	The democratic institutions created by the Constitution – Bicameral System of Legislature at the Center and in the States, Devolution of Powers to Panchayat Raj Institutions	5 Hours
Unit III	Fundamental Rights and Duties – Their content and significance	5 Hours
Unit IV	Directive Principles of states policies – The need to balance Fundamental Rights with Directive Principles.	1 Hour
Unit V	Special rights created in the constitution for Dalits, Backwards, Women and Children and the Religious and Linguistic Minorities	1 Hour
Unit VI	Doctrine of Separation of Powers – Legislative, Executive and Judicial and their functions in India	4 Hours
Unit VII	The Election Commission and State Public Service Commissions	2 Hours
Unit VIII	Method of amending the Constitution	1 Hour
Unit IX	Enforcing rights through Writs Certiorari, Mandamus, Quo warranto and Habeas Corpus	2 Hours
Unit X	Constitution and Sustainable Development in India	2 Hours

Scheme of Examination

Institutional Theory Examination at the end of the I BDS Course : 100 Marks

Reference Books :

Sl. No.	Title	Author	Yr. of Publ.	Publisher's Name, Place of Publication
6.	The Constitution of India – A Politico – Legal Study	J. C. Johari	-	Sterling Publication, Pvt. Ltd., New Delhi.
7.	Constitution Law of India	J. N. Pandey	1998	Central Law Agency
8.	The Indian Constitution	Granville Austin	2000	Corner Stone of Nation Oxford, New Delhi

KANNADA

GOAL:

The students should gain knowledge of the local language (Kannada) so as to communicate and reciprocate with local people in general and patients in particular to impart proper patient care during the course of their study and future.

OBJECTIVES :

a) KNOWLEDGE

At the end of the I BDS course the student is expected to know :

1. The basic of Kannada Language.
2. Communicate and interact in Kannada Language with patients and colleagues.

b) SKILLS

At the end of the I BDS course the student is expected to :

1. Identify and write small words and sentences.
2. Acquire communicative skills.
3. To be compassionate towards patient in treatment delivery.

COURSE CONTENTS

Theory : 100 Hours

1. Interaction (small words & sentences) : 15 Hours
2. Introducing each others : 04 Hours
3. About Ramayana : 04 Hours
4. Enquiring about the College : 04 Hours.
5. Enquiring about Room : 04 Hours.
6. Vegetable Market : 04 Hours.
7. About Medical College : 04 Hours.
8. In a clot shop : 04 Hours.
9. Planned to for a picnic : 04 Hours.
10. Enquiring about one's family : 04 Hours.
11. Conversation between Doctor and Patient. : 05 Hours.
12. Enquiring about friend's family : 05 Hours.
13. Conversation between friends : 05 Hours.
14. Routine activities of a students : 05 Hours
15. About children's education : 05 Hours.
16. Halebidu and Belur : 05 Hours.
17. Discussion about examination and future plan : 05 Hours
18. Karnataka : Lesson for reading : 05 Hours
19. Lesson for reading : 05 Hours
20. Presentation by students : 04 Hours

Scheme of Examination

Institutional Theory Examination at the end of the I BDS Course : 100 Marks

Reference Books :

Sl. No.	Title	Author	Edition	Yr. of Publ.	Publisher's Name, Place of Publication
1.	Kannada Kali	Lingadevaru Halemane		2002	Kannada University, Hampi