FACULTY OF

DENTAL MEDICINE & SURGERY

VISION AND MISSION

The Faculty of Dentistry National Sudan- Sudan strives towards developing the highest standards of academic professional excellence in dental medicine and surgery. The various parts of this programme aim to produce ethically responsible, innovative, critically thinking professional pharmacists committed to meeting the health and developmental needs of all communities in the Sudan and the rest of the world, appropriately and efficiently. The curricula teach the students how to learn and continue as lifelong learners in dentistry. The Programme aims to be the most respected educational institution of dental sciences and practice, as evidenced by high quality of premises, preparations, up-to-date administration and governance, job- and researchdirected instruction, quality of graduate and their ethical, professional and scholarly contribution.

ENTRANCE REQUIREMENTS

A student interested in joining the Faculty of Dental Medicine and Surgery, has to:

1. Obtain pass mark in five subjects including:, English language, mathematics, physics, chemistry and biology. International students who have not studied Arabic and religious studies may have more alternative subjects from an approved list of subjects published in the webpage of Ministry of Higher Education.
2. Achieve the percentage in Sudan School Certificate announced every year (International students may have 10% less in the School Certificate scores.
3. Apply electronically though the website of the Admission and Accreditation Office, Ministry of Higher Education, or apply directly in Admission Office in the National University, and pass the health examination, aptitude tests and interview at the Faculty of Dental Medicine and Surgery.
4. Pay the published fees: 40,000 SDG or US $ 8000 [international students]

CAREER ADVICE

Students qualified with this Bachelor degree [B DMS] pass through a track decreed by the Sudan Medical Council and are thus temporarily accredited as dentists. After working for a period specified by the Ministry of Health in each specialty/ discipline, grads acquire a license of permanent registration with the Sudan Medical Council and may pursue master's and doctoral degrees or licensing in any of the eight disciplines of dentistry or basic science to qualify for specialized practice as a consultant/specialist or university teaching. The graduate may be interested in managerial, commercial, industrial or charity career, related to one of the various specialties in the discipline.

International graduates can follow the same track if they preferred to stay in the Sudan, but may also start their registration and internship in their own countries or residence.

FACULTY OBJECTIVES

The objectives of the Faculty of Dental Medicine and Surgery National University, are to:

1. Emphasize values and ethical heritage of the Sudanese Nation in its curriculum, and follow strategies that lead to strengthening these values, as an important component of the National College philosophy and message.
2. Graduate a dental and oral health professional at the internist levels with strong community orientation and ethical components, and self-directed learning capabilities.
3. Contribute to community development through health services provided in its own health institutions and other institutions co-operating with it, through the following: (a) partnership in designing health programmed and plans, and implement whatever is feasible in utilizing the experience of specialists, (b) contribution in continuous education through short and long term courses, to improve efficiency of health workers, and (c) provision of essential equipments and supplies to improve quality of services, through partnership with the Ministry of Health.
4. Strengthen medical and health research in dentistry and related professions, making use of the National College's accessibility and communication privileges.

CURRICULUM OBJECTIVES [Characteristics of the Dentistry graduate]

A graduate of the Faculty of Dental Medicine and surgery - National University should be able to

1. Adopt the strategies of the College and abide by its objectives and rules stated in its constitution.
2. Observe in his/her practice, the health professional ethics which agree with the Nation's values, beliefs and norms (as stated by Sudan Medical Council, and Sudan Allied Health Professionals Council), and maintain good and honest relations with his/her patients, their families, his/her colleagues across all sectors involved in health.
3. Appreciate the value of diversity and multi-ethnicity in solving dental health problems with emphatic, humane and fair practice.
4. Diagnose and manage problems of dental and oral health, and pay attention to other health problems prevalent at the level of the individual, family or society, with special emphasis on the nutritional and environmental problems common in developing countries, and plays an active role in health promotion.
5. Integrate basic, community, clinical and physical sciences in solving the individual dental and oral problems
6. Use scientific knowledge in diagnosis and management of dental and oral problems, according to known methods of problem solving and integration, and explains the scientific structural (anatomical), functional (physiological, biochemical),

morbid (microbiological, pathological), and therapeutic background related to the problems

7. Manage relevant dental and oral emergencies, and decide and act properly on cases needing referrals to specialized centres or personnel.
8. Accepts to work in all settings according to needs, and act to improve health service delivery systems both quantitatively and qualitatively.
9. Encourage community participation and act in recruiting various sectors in defining health and health-

   related problems, planning and providing suitable solutions, recognizing the community beliefs, ethics, and traditional practices.
10. Adhere to “health team” approach, acting as an efficient member, and ensuring both effectiveness and homogeneity among the members.
11. Administer a dental and oral health “unit” or “centre” efficiently according to scientific, medical, statistical, economic and legal bases.
12. Continue to consider elements of efficiency, costing and economic implications in his/her diagnostic and therapeutic choices, particularly the financial abilities of his/her patients.
13. Acquire the skills of teaching, learning and communication efficiently to carry out his/her duties in health education and in winning the confidence of patients and their families and societies.
14. Acquire the skills of self education (self-directed learning), and contribute to availing opportunities for planning and implementing continuous education activities to upgrade his/her own abilities and those of his/her colleagues in the health team.
15. Carry health or health-related research in dental and oral health, alone or with a health team, using scientific methods known in such activities.
16. Use computer in word processing, statistics and graphics to achieve success in other objectives of his/her career, and skills of computer-assisted presentations.
17. Acquire postgraduate qualification in the discipline of his/her choice, recognizing the needs of the society for certain specialties, particularly general practice and family medicine.

EDUCATIONAL STRATEGIES AND METHODS

The learning strategies emphasize the following: (1) early acquisition of basic skills, (2) student-centered learning, and maximum student responsibility in the learning process, (3) problem-based and problem-oriented learning, (4) community-oriented and community-based activities, (5) integration of basic science, community and clinical dentistry, in a multidisciplinary approach, (6) self- and peer education and evaluation, (7) team-work approach, (8) a wide range of electives, (9) continuous evaluation and (10) continuous education.

The faculty adopts the following methods in the daily programme of activities: (1) problem-based learning (PBL) sessions- one problem/ week at most, (2) seminars and small group discussions –once/ week at least

(3) field practice in rural and primary health care settings and societies not less than 1/5th of the timetable, (4) practical sessions (laboratory, clinical, pharmaceutical industries) not less than 1/4th of the curriculum timetable, (5) skill laboratory (weekly) sessions, (6) lectures -not more than 1/3rd of the curriculum timetable (not more than 3 lectures/day). (7) educational assignments, reports and research activities (as many as the programme would allow- at least one per module), (8) electives -not more than 10% of the curriculum timetable, and (9) graduation project.

TIMETABLE

The B. D.M.S. requires five years (10 semesters) divided into three phases: The first three years (Semesters 1-6) are based at the main campus of the University with one or two days off campus in visits to relevant institutions and training facilities. The last two years (Semesters 7-10) are based at clinical training sites, mainly at the campus clinics. When the hospital in completed, training will be within the outpatient clinics, operation theatres and wards. with only one or two days at the main campus. The programme schedule therefore involves considerable commitment from students to be on time at the respective sites specified in their daily timetables. Each student should have a functioning e-mail address for last moment changes, a frequent incident in field training programmed.

Phase 1:Introductory courses and university requirements	=Semesters 1
Phase 2: Requirements (cont.)+ dental sciences	=Semesters 2-6
Phase 3: Clinical training	=Semesters 7-10

Semester 1 [18 CHs - 17 weeks]

	Title	Code	Weeks	Units			CH
				Th	Tut	Prac	
1	Orientation week	-	-	-	-	-	-
2	English language 1	ENG-113	Longit.	3	-	-	3
3	Introduction to Medicine and Medical Education	DE-EDU-114	3.	2	-	-	2
4	Physics for Medical Equipment and Investigations	DE-PHYS-115	3	2	-	-	2
5	Computer Sciences -I	DE-COMP-116	2.	1	-	2	2
6	Biostatistics	DE-STAT-117	Longitudinal	2	-	-	2
7	Basic Biochemistry	DE-BIOCH-118	4	2	1	1	3
8	Behavioral Sciences	DE-BEHAV-119	2	2	-	-	2
9	Introduction to Medical Ethics	DE-ETHIC-226	3	2	-	-	2
			17	16	1	3	18

Examination of longitudinal courses (+re-sits) 1 week

Repeat courses or examinations for late comers and failures.

Semester 2 [22 CHs- 17 weeks]

	Title	Code	Weeks	Units			CH
				Th	Tut	Prac	
1	English language-2	DE-ENG-213	Longit.	3	-	-	3
2	Professional Skills-1 Communication	DE-SKILL-211	Longit.	1	-	2	2
3	Human Growth and Development	DE-GROW-126	3.	2	1	1	3
4	Man and Environment	DE-ENV-127	4.	3	1	1	4

5	**Genetics & Molecular Biology**	**DE-GET-119**	2	2	-	-	2
6	**Principles of Disease-I**	**DE-DIS-212 A**	3	2	1	1	3
7	**Dental Morphology**	**DE-NAT-125**	3	2	-	2	3
8	**Computer science -II**	**DE-COMP-125**	2	1	–	2	2
			17	16	3	9	22

Examination of longitudinal courses (+re-sits) 1 week

SUMMAR 1 AND ELECTIVES.

1. Dental Records and Data Collection (PA-SUM-131) 2 CHs

2. Medical Genetics (E-131) 2CHs

3. Elective (E-132): A 1000 -word report on “Internet Sources of Dental Sciences” 1CH 4. Repeat courses or examinations for late comers and failures.

FIRST YEAR PROGRAMME EVALUATION

Semester 3 [22 CHs- 18 weeks]

	Title	Code	Weeks	Units			CH
				Th	Tut	Prac	
1	**Introduction to Medical Terminology**	**DE-TERM-211**	Long.	2	-	-	2
2	**Principles of Disease-II**	ME-DIS-212	3	2	1	1	3
3	Blood, lymph	ME-HEM-316	3	2	-	2	3
4	**Head and Neck**	**DE-HAN-214**	3	2	-	2	3
5	**Endocrine and Metabolism**	**DE-ECDO-215**	3	2	1	1	3
6	**Professional Skills-2- Dental Services in PHC**	**DE-SKIL-221**	Longit	1	-	2	2
7	**Immunology**	**DE-IMM-216**	2	2	-	-	2
8	**Gastrointestinal System**	**DE-GIT-218**	4	2	2	2	4
			18	15	4	10	22

Examination of longitudinal courses (+re-sits) 1 week

Semester 4 [19 CHs - 17 weeks]

	Title	Code	Weeks	Units			CH
				Th	Tut	Prac	
1	**Respiratory System**	**DE-RES-222**	3.	2	1	1	3
2	**Cardiovascular System**	**DE-CVS-223**	3	2	1	1	3
3	**Oral anatomy, Histology and Embryology**	**DE-NAT-224**	3	2	-	2	3
4	**Nervous System And Special Senses**	**DE-CNS-225**	6	3	2	4	6
5	**Medical Ethics and Professionalism**	**DE-ETHIC-226**	Longit	2	-	-	2
6	**Introduction to Research**	**DE-REC-227**	2	1	--	2	2
			17	12	4	10	19

Examination of longitudinal courses (+re-sits) 1 week

SUMMAR 2 AND ELEVTIVE MODULES

1. Research methodology and scientific writing (PA-SUM231) 2 CHs
2. Elective (E232): Visit to dental services in a hospital and write a report 2 CH

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SECOND YEAR PROGRAMME EVALUATION

Semester 5 [19 CHs- 16 weeks]

	Title	Code	Weeks	Units			CH
				Th	Tut	Prac	
1	**Professional skills-3- dental equipment**	DE-SKIL-311	Longit.	1	-	2	2
2	Dental pharmacology	DE-PHARM-312	3	3	-	-	3
3	Dental and oral microbiology	DE-MIC-313	4	2	1	1	4
4	**Prosthodontics-I**	**DE-PROS-314**	4	2	-	2	3

5	**Dental Materials**	**DE-MAT-315**	4	3	1	1	4
6	**Dental &oral pathology**	**DE-path-324**	Longit	3	-	3	3
			15	15	2	9	19

Examination of longitudinal courses (+re-sits) 1 week

Repeat courses or examinations for late comers and failures.

Semester 6 [19 CHs- 18`weeks]:

	Title	Code	Weeks	Units			CH
				Th	Tut	Prac	
1	**Professional skills-IV**	DE-SKIL-321	Longit.	1	-	2	2
2	**Prosthodontics-II**	**DE-PROS-324**	3.	1	2	2	2
3	Dental and oral pathology	DE-PATH-324	Longit.	3	-	3	3
4	General medicine	DE-MED-411	4.	2	2	2	4
5	General surgery	DE-SURG-421	4	2	2	2	4
6	**Community Dentistry and Public health**	**DE-DPH-323**	Longit.	2	2	2	4
			18	11	8	13	19

Examinations (2weeks)

SUMMAR 3 AND ELECTIVES

1.Rural Hospital Residency (DE-SUM-331)2 CHs Block 2 weeks

2. Elective (E332): A 1000 work essay on antimicrobial therapy in dentistry 1CH

THIRD YEAR PROGRAMME EVALUATION

Semester 7 [24 CHs - 18 weeks]

	Title	Code	Weeks	Units			CH
				Th	Tut	Prac	
1	**Conservative Dentistry-I**	**DE-CONS-411**	Longit	3	1	3	5
2	**Prosthodontics-II**	**DE-PROS-412**	Longit.	2	2	2	4
3	**Periodontics- I**	**DE-PERIO-423**	Longit.	3	-	2	4
4	Maxillofacial surgery-1	DE-OMFS-422	Longit.	3	2	2	5
5	**Oral Medicine**	**DE-OMED-424**	Longit.	2	-	1	2
6	**Oral Hygiene**	**DE-HYG-322**	Longit	2	2	2	4
			18	15	7	12	24

Examinations (2weeks)

Semester 8 [18 CHs- 18 weeks]

	Title	Code	Weeks	Units			CH
				Th	Tut	Prac	
1	**Conservative Dentistry-II**	**DE-CONS-413**	**Longitudinal**	1	-	2	2
2	**Prosthodontics-III**	**DE-PROS-412**	**Longitudinal**	2	2	2	4
3	**Oral Medicine**	**DE-OMED-424**	**Longitudinal**	2	-	1	2
4	**Dental Radiology**	**DE-RAD-424**	**Longitudinal**	1	-	2	2
5	**Paedodontics-I**	**DE-PEDO-426**	**Longitudinal**	2	-	2	2
6	**Periodontics-II**	**DE-PERIO-427**	**Longitudinal**	1	-	2	2

7	**Management of Medically Complex Patients**	**DE-MCP-417**	2	1	2	-	2
8	**Forensic Dentistry**	**DE-LAW-415**	2	2	2	-	2
			18	12	6	11	18

Examinations (2weeks)

FOURTH YEAR PROGRAMME EVALUATION

Semester 9 [26 CHs- 18 weeks]

	Title	Code	Weeks	Units			CH
				Th	Tut	Prac	
1	**Conservative Dentistry-III (Fixed Prosthodontic)**	**DE-CONS-511**	**Longitudinal**	3	1	4	7
2	**Oral and Maxillofacial Surgery-II**	**DE-OMFS-512**	**Longitudinal**	3	1	3	5
3	**Paedodontics-II**	**DE-PEDO-513**	**Longitudinal**	2	1	3	4
4	**Orthodontics-I**	**DE-ORTH-514**	**Longitudinal**	2	1	2	6
5	**Graduation Project**	**DE-GRAD-515**	**Longitudinal**	-	-	-	4
			18	10	4	12	26

Examinations (2weeks)

Semester 10 [20 CHs- 18 weeks]

	Title	Code	Weeks	Units			CH
				Th	Tut	Prac	
	Comprehensive Dental Training		Long.	-	-	-	-
1	Paedodontics-III	DE-CDCT-521	Long.	2	2	2	4
2	Periodontics-III	DE-CDCT-521	Long.	-	1	2	2
3	Prosthodontics-IV	DE-CDCT-521	Long.	-	1	2	2
4	Orthodontics-II	DE-CDCT-521	Long.	-	1	2	2
5	Oral and Maxillofacial Surgery-III	DE-CDCT-521	Long.	1	2	2	3
6	Conservative Dentistry-IV/ Fixed Prosthodontics	DE-CDCT-521	Long.	2	2	2	4
7	Conservative Dentistry-5	DE-CDCT-521	Long.	1	2	2	3
			18	6	11	14	20

Examinations (2weeks)

Semester 8 [17 CHs-20 weeks]

				Units	

COURSE OUTLINE

Detailed behavioural objectives, skills, assignments and problems are listed in each course book. The lists are too extensive to be included here

Phase 1 : Semester 1, 2 Preliminary Courses

Title	Code	Semester/Duration	Credits
ENGLISH LANGUAGE	ENG-113+114	1and 2/Longitudinal	3+3

The sources of health information in the World are still in English. The Internet navigation to obtain information is basically in English. Some of the patients, attending clinics in Sudan, may only speak English language, especially with open-up of borders with economic development and of globalization. Passing the English language examination is an essential entry requirement to universities in Sudan. The general objectives of this course include: (1)correct pronunciation of medical terns, including those related to health services in the country, (2) correct reading and showing understanding of texts from medical books, (3) expressing one's self in good English describing his daily activities, career ambitions, present problems in health and current attempts at management, and (4) translating some pieces from English to Arabic, and three others from Arabic to English, both sets from medical literature.

Most of the content is detailed in the College Notes (NC- 113/05), the rest is achieved by self-directed learning and written assignments

Most of the content is detailed in the College Notes (Prof. Osama AbdelRahman Book) , the rest is obtained by self-directed learning and written assignments. The coordinators may decide to use other reference that fulfills the objectives.

Title	*Code*	*Semester/Duration*	*Credits*
INTRODUCTION TO MEDICINE AND MEDICAL EDUCATION	MEDU-114	1/Block 3 weeks	2

This is a three-week (2 CHs) block, starting with a simple medical problem that emphasize the meaning and message of health, health care delivery system in the country, the role of the physician in health care, role of other professional and administrative staff, priority health problems, concepts and principles of learning, adult education and learning, student centred and problem-based learning, instructional techniques (lecture, small group etc), student assessment methods, holistic approach, interdisciplinarity and partnership concepts, curriculum development, programme evaluation, leadership and professional ethics. Students are divided to groups to spend a week in a health facility, hospital theatre, hospital outpatient, health centre, various directorates and departments of Federal and State Ministries of Health, etc.. Meanwhile students are given discussion sessions on group dynamics and instructional methods, at the end of the course the groups present their field activity using a suitable audiovisual technique. Evaluation assesses the knowledge and attitudes of the students in these three areas: health system, group dynamics and instructional methods.

Title	*Code*	*Semester/Duration*	*Credits*
PHYSICS FOR MEDICAL EQUIPMENTS AND INVESTIGATIONS	PHYS-115	1/Block 3 weeks	2

The basic principles of general physics are important for understanding certain mechanism that take part in the human body, and also, the technical background of many medical equipments used in physiotherapy, including radiology and imaging, anaesthesia, physical therapy and rehabilitation (with emphasis on the latter). A medical professional is often confronted with a method of investigation or intervention that is based on simple physical or mechanical process in the human being and he/she has to deal cautiously with the machine and use it correctly considering its proper maintenance and patient’s and worker’s safety. These include physical chemistry, gas laws, physics of light and sound, and radiation.

Title	Code	Semester/Duration	Credits
COMPUTER SCIENCE -1 &2	COMP-116 COMP-125	1&2/Block 2 weeks in each Semester	2 each semester

Most of the textbooks of medicine and allied sciences are available on CDs, in which a large volume of knowledge is saved and easily retrievable. There are many software packages demonstrating methods and techniques in clinical skills including patient rapport in history taking, clinical examination, investigations and management. Students and teacher can access the internet for the unlimited sources of health information, both at their professional level and public level for health education. Students and future doctors are educators who have to prepare smart documents and presentations for the health team and profession at large. Knowledge of programmed like Word, Excel, and PowerPoint are indispensable for anyone learner or teacher. Computer is important for students both in the developed or developing world, more so for the latter, who might not have inherited voluminous libraries in their colleges and have to utilize the virtual libraries available all over the world. Medical journal as hard copies are difficult to be owned by one institution, now almost all are available on-line for those who can use the computer efficiently. The course is intensive focusing on the basic principles of computer electronics and applications relevant to health science education. This is mainly on the hand-on experience in dealing with famous programmed like DOS, Word, Excel, PowerPoint, Access and Internet Explorer. The use of CDs is stressed covered as well as having e-mails and navigating the internet for health information including how to access medical journals, and communicate with scientists worldwide.

Title	Code	Semester/Duration	Credits
BIOSTATISTICS	STAT-117	1/Longitudinal	2

A Longitudinal course basic statistics as applied to health, to include: introduction to statistics, probabilities, data summary, presentation; measurement of central tendency; interpretation of variation (dispersion), population means, normal distribution; confidence interval, frequency distribution, sampling techniques, calculation and interpretation of the concept of confidence interval, the concept of p-value and its interpretation, the normal and skewed frequency distribution of biomedical data, and apply the appropriate test of significance for a given data set and a given research methodology (using t test as an example).

Title	Code	Semester/Duration	Credits
BASIC BIOCHEMISTRY	BIOCH-118	1/Block 4 weeks	3

A four-week block in Semester 1, to include: atomic structure, chemical bonding,

chemical reactions, anabolism and catabolism, molecular formulae, solutions and solubility, molarity, molality, normality and molar fraction, acids and bases, buffers, hydrocarbons, isomerism, introduction organic compounds, classification of aliphatic and aromatic hydrocarbons, their properties and reactions; aldehydes and ketones, alcohols, phenols and ethers acids and amines benzenes and their derivatives; carbohydrates, lipids and proteins, vitamins and enzymes and coenzymes, carbohydrates, lipids, proteins, phospholipids, cholesterol, nucleic acids, nitrogen bases, enzymes and co-enzymes.

Title	*Code*	*Semester/Duration*	*Credits*
BEHAVIOURAL SCIENCE	BEHAV-119	1/Block 2 weeks	2

A tow-week block during Semester 1, to include: (1) introducing psychology, psychoanalysis, defense mechanism manifesting as behaviours, (2) role of stress in the etiology of physical and psychological illness, (3) coping with loss, grief and death, (4) biological basis of behaviour (catecholamines, dopamine, neurotrasmitters, neuropeptides, (5) cultural considerations in medical practice, (6) family structure and dynamics in health care, (6) health and illness behaviour, (7) personality, (8) terminology of psychiatric disease, (9) medical bases of substance and drug abuse. 10) Application of behavioural principles in health and disease 11) The effect of environment in human behavior.

Title	*Code*	*Semester/Duration*	*Credits*
INTRODUCTION TO MEDICAL ETHICS	ME-ETHIC-226	1/Block 3 weeks	2

The student should show an understanding of the (1) introduction about the course, history of medicine and Hippocratic oath, (2) professionalism, human rights and law, (3) Dentist's relationships to the patients, colleagues, staff, teachers and students (4)health equity and health policy, (5) confidentiality, (6) good medical practice, (7) how to deliver a bad news to the patient and his family, (8) ethical dilemmas and scenario related to these dilemmas, (9) research and ethics,

Phase 2: Dental science courses

Title	*Code*	*Semester/Duration*	*Credits*
DENTAL MORPHOLOGY	DE-NAT-125	2/Block 3 weeks	3

This is a three-week block that details the descriptive anatomy of dentition and the various terms used in dental localization, and function of the individual teeth. The

student should: (1) define primary and permanent teeth, (2) discuss the function of the teeth, (3) identify the teeth, if in anatomical location (in a living subject, cadaver or model) or if presented individually outside the body, (4) collect and preserve extracted teeth of all types, (5) describe tooth morphology and nomenclature, (6) recognize the descriptive terms of surfaces and areas in the oral cavity, in relation to the teeth, (7) describe the arrangement of the teeth, (8) define and explain dental anthropology, and (9) describe the anatomy of the pulp.

Title	*Code*	*Semester/Duration*	*Credits*
HUMAN GROWTH AND DEVELOPMENT	ME-GROW-126	2/Block 3 weeks	3

This is a three-week block on general embryology (reproductive organs, gamete formation, fertilization, implantation, organogenesis, and subsequent morphological changes in the human development during prenatal, postnatal, childhood, preschool, school age, adolescence, adulthood and elderly (both physical and psychological) changes, teratogens and congenital anomalies. Students should visit an antenatal setup, a labor room, child care centre and growth monitoring charts, milestones, abnormalities of physical growth, maternal and child health care, elderly care. Students become familiar with the special features of all these stages and also gain knowledge about the role of health care providers at the different phases of human life in accordance to the specific needs of each phase. The course is planned to achieve these objectives through the different problems submitted in this block book and tutorials augmented by lab skills and clinical skills tutorials in addition to student interactions with the subject specialists. The students will also visit health centres and get acquainted with the health care delivery system with reference to antenatal care, paediatric care, immunization and also geriatric care.

Title	*Code*	*Semester/Duration*	*Credits*
MAN AND HIS ENVIRONMENT	ME-ENV-126	2/Block 4 weeks	4

This is a 4-week (4 CHs) course on the inter-relation between Man's internal and external environments, basic concepts of internal physiologic activities, body fluids, acid-base balance, biological membrane, body systems (respiratory, gastrointestinal, nervous etc..) exposed to environment, impact of environment on health, health consequences of exposure to potential environmental hazards (physical, chemical and biological), multidisciplinary approach to environment, the role of the international organizations interested in environmental protection, principles of epidemiology, biological spectrum of environmental diseases, endemic and epidemic diseases.

Title	*Code*	*Semester/Duration*	*Credits*

PROFESSIONAL CLINICAL +SKILLS	ME-SKIL-211+ 221+311+321	2,3,5 &6/ Longitudinal	2 in per semester

This is a two-hour weekly session during semester 3,4,5 and 6 to include: (1) communication skills of speaking, hearing, listening, recognizing strengths and weaknesses of close-ended and open-ended questions, non-verbal communications, establishing rapport, interview and be interviewed, dealing with a difficult patient, (2) dental services in primary health care, (3) dental equipment, and (4) primary dental care and all that requires from taking history and perform examination of the mouth and related parts of the body.

Part of this longitudinal course introduces students to the equipments, materials and supplies in the dental department of a rural hospital. The student should: (1) retain a notebook containing an inventory of all equipments and supplies needed in a primary care dental clinic and in a rural hospital, (2) describe the components of a modern dental chair, and the important electrical and air connections to it, (3) enumerate, and describe each of, the instruments used in dental extraction, (4) enumerate, and outline the uses of each of, the dental material used in filling, prosthetic and orthodontic dentistry, and (5) estimate the amount and cost of material and supplies needed by each patient in a rural setup.

An important component of this course assumes that a student should:(1) obtain information from the Directorate of dentistry in the Ministry of Health, and the national organization of dental practice, (2) review the contribution of health centre in the dental practice, as compares to the role of hospitals and private clinics, (3) summarize the means of keeping patient records in dental practice centres, (4) list the sorts of problem the patient takes to the dental unit, and the types of managerial choices offered, (5) interview patients about their satisfaction with the service provided, (6) list the sort of equipments, material and supplies used at each level of dental health care, and (7) present a seminar on the above objectives when completed.

Title	*Code*	*Semester/Duration*	*Credits*
PRINCIPLES OF DISEASE AND GENERAL PATHOLOGY-1 &2	ME-DIS-212	3 weeks in Semester 2 & 3 in Semester 3	3 & 3

This is a five-week block on general pathology and microbiology to include: (1)revision of general histology, (2) morphology, classification, staining reactions, and pathogenicity of bacteria, viruses and fungi, (3) sterilization and disinfection, (4) basic concepts in immunity, (5) principles of inheritance, introduction to molecular biology, and genetic defects underlying inherited disorders, (6) general pathology: inflammation: causes, tissue damage and repair, neoplasia and abnormal cell growth, (7) parasites and parasitic diseases, (8) anti-microbial and anti-parasitic drugs.

Title	*Code*	*Semester/Duration*	*Credits*
Genetic & Molecular Biology	DE-GET-119	2/Block 2 weeks	2

This is a tow-week (2 CHs) block, starting with a simple medical problem that emphasize the meaning and message of health, health care delivery system in the country, the role of the physician in health care, role of other professional and administrative staff, priority health problems, concepts and principles of learning, adult education and learning, student centred and problem-based learning, instructional techniques (lecture, small group etc), student assessment methods, holistic approach, interdisciplinarity and partnership concepts, curriculum development, programme evaluation, leadership and professional ethics. Students are divided to groups to spend a week in a health facility, hospital theatre, hospital outpatient, health centre, various directorates and departments of Federal and State Ministries of Health, etc.. Meanwhile

Title	*Code*	*Semester/Duration*	*Credits*
BLOOD, LYMPH & IMMUNE SYSTEMS	ME-HEM-316	3 /Block3 weeks	3

This is a three-week block on general principles of hematology to include: (1 Hemopoieses, (2) hypochromic anemia and iron overload, (3) megaloblastic and ather

macrocytic anemias, (4) hemolytic anemias, (5) genetic disorders of hemoglobin, (6) the white cells, (7) the spleen, (8) hematologic malignancies- acute leukemias, chromic myeloid leukemia, chronic lymphoid leukemia, myelodysplasia, Hodgkin's and non-Hodgkin's lymphomas, multiple myeloma, myeloproliferative disorders, (9) aplastic anemia and bone marrow failure, (10) platelets, blood coagulation and hemostasis, (11) bleeding disorders, (12) coagulation disorders, (13) thrombosis and thrombotic therapy, (14) blood transfusion and (15) pregnancy and neonatal hematology

Title	*Code*	*Semester/Duration*	*Credits*
HEAD AND NECK	ME-HAN-214	3 /Block3weeks	3

This is a three-week-block on the: anatomy of the head and neck. The student should: (1) identify the various parts of the skull bones, particularly the cranial cavity and facial skeleton, including all sutures and foramina, indicating the structures passing through them, (2) name and locate muscles; their attachments, nerve supply and action, on the skull bones, particularly the muscles of mastication and facial expression, (3) describe the walls, fissures, foramina, notches, and name and identify its contents, particularly the extraocular muscles and nerves, (4) Identify the various parts of the eyeball, and discuss the development, structure and function of each, (5) describe the morphology and structure of the various parts of the nasal cavity and their functions, including the paranasal sinuses (6) review the anatomy and histology of the oral cavity, including the salivary glands (7) describe the triangles of the neck and their contents, particularly lymph nodes and thyroid and parathyroid glands, (8) describe the skeleton and soft tissues of the larynx, its extrinsic and intrinsic muscles and their nerve supply and actions, (9) review the parts of the pharynx, its muscles and nerve supply, and (10) the various parts of the ear and their functions.

Title	*Code*	*Semester/Duration*	*Credits*
Introduction to medical terminology	DE-TERM-211	3/Longitudinal	2

To study medicine & often health science ,the students should be familiar with rules of medical language .this course prepare the students with the clues to formation & understanding words that describe the human body ,its component , conditions & functional processes In specific way the course is appropriate for health care administrations as well as health sciences students.

Title	Code	Semester/Duration	Credits
ENDOCRINE SYSTEM AND METABOLISM	DE-ENDO-215	3 or 4/3 weeks	3

This is a three-week- course that covers the basic and clinical aspects of endocrine glands and metabolic. It includes objectives on basic sciences integrated with clinical sciences and skills. It covers the: (1) anatomy, histology, development and secretions of these glands, (2) their functions, (3) diseases occurring as a result of reduced or increased production, (4) diagnostic tests and management, (5) related normal metabolic functions, (5) abnormalities causing disease like diabetes mellitus, their diagnosis, management and preventions of individuals and community, and (7) effect of metabolic and endocrine diseases to dental practice.

Title	Code	Semester/Duration	Credits
GASTROINTESTINAL SYSTEM	DE-GIT-218	3 or 4/4 weeks	4

This is a four-week- course that cover: (1) outline of the structure of the anterior abdominal wall, inguinal region, testes and scrotum, abdominal cavity, gastrointestinal tract (GIT), associated glands (liver, biliary tract, pancreas and spleen including innervations, (2) details of the structural and functional aspects of mastication, deglutition, digestion and absorption of food, (3) an ideas on gastrointestinal symptoms like nausea, vomiting, diarrhea, constipation, abdominal pain, abdominal distention etc,,(4) outline of common diseases like peptic ulcer, jaundice, infections and infestations, neoplasms, (5) common investigative procedures for GIT disease, (6) common surgical procedures, and (7) drugs used in common GIT disease. In all the above the emphasis should be made on the impact of such system on the knowledge background and activities of the practicing dentist

Title	Code	Semester/Duration	Credits
Immunology	DE-IMM-216	3/Block 2 weeks	2

This is a tow weeks block course that introduce : (1)basic aspect ,normal structure & function of immune system (2)mechanism of immune disorders (3)difference between innate & adaptive immunity (4)various types of hypersensitivity reactions (5)common features of autoimmune disorders.

Title	Code	Semester/Duration	Credits
ORAL ANATOMY, HISTOLOGY AND EMBRYOLOGY	DE-NAT-224	3 or 4/Block3 weeks	3

This is a three-week block the includes: the following student objectives: (1) describe the development of the teeth and mouth, as well as that of the branchial arches and their derivatives, (2) outline general anatomy of the head and neck, (3) outline basic anatomy of the thorax, abdomen and extremities, (4) basic anthropology, (5) describe (and recognize under the microscope) the histological features of epithelia, glands, muscles, periosteum, bone cartilage, adipose tissue, fibrous tissue, elastic tissue, lymph tissue, blood and blood vessesls, lungs, kidneys, spleen, liver, thymus, pancreas and other endocrine glands.

Title	*Code*	*Semester/Duration*	*Credits*
RESPIRATORY SYSTEM	DE-RES-222	3 or 4 /Block3 weeks	3

This is a three-week block in Semester 3 or 4 to include: (1) describing the anatomy of the thoracic cage, muscles, diaphragm, upper and lower respiratory tract (including nasal cavity, larynx, trachea, bronchial tree, lungs, pleura), mediastinum, mechanism of respiration, (2) physiological and biochemical bases of normal lung functions and volumes, gas exchange in lung and tissues, gas transfer, (3) pathological and microbiological aspects in airway obstruction, respiratory pathogens, respiratory infections, (4) skills of taking history and performing physical examination to elicit physical signs, prepare a list of differential diagnosis and suggest suitable investigations, (5) given one of the following problems/conditions: pneumonia, foreign body inhalation, bronchial asthma, pleural effusion, pneumothorax, tuberculosis, mediastinal masses, ca bronchus: use basic and clinical sciences to outline diagnostic criteria and management, and show impact on family and community, (6) role of inherited, environmental and occupational factors in respiratory disease, and the effect of respiratory disease on oral health, and consequences of oral disease on respiratory system and function..

Title	*Code*	*Semester/Duration*	*Credits*
CARDIOVASCULAR SYSTEM	ME-CVS-223	3 or 4 /Block3 weeks	3

This is a three-week-block on the: (1) structure, functions and disorders of the heart and blood vessels, (2) morphology of the heart, its blood supply, various blood vessels, (3) structure of cardiac muscle, (4) contraction of cardiac muscle, (5) electrical activity of the heart and normal ECG tracing, (6) cardiac cycle and cardiac output, (8) blood pressure regulation, hypertension, coronary arteries and ischemic heart disease, (9) rheumatic fever and valvular heart disease, (10) heart failure, (11) essential drugs used in cardiovascular disease, and (12) effects of cardiovascular disease on oral health, and the consequences of oral disease on the cardiovascular system and function.

Title	Code	Semester/Duration	Credits
NERVOUS SYSTEM AND SPECIAL SENSES	DE-CNS-225	3 or 4/Block6 weeks	6

This is a 6-week- course that covers the basic and clinical sciences of the nervous system including the special senses, all integrated with the necessary skills, around common problems. The content detailed in the comprehensive objectives below includes the anatomy of the central nervous system, peripheral and cranial nerves and plexuses, autonomic nervous system, their histological and developmental features, their functions, common problems, methods of examining the systems, diagnosis, management and prevention, all with vision and consideration for the needs of a practicing denstist..

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Title	Code	Semester/Duration	Credits
Introduction to Research	DE-REC-227	4 or 6 or ANY PRE SUMMAR/Block 2 weeks	2

This is a two-week- block, which focuses on the synthesis of professional knowledge, skills, and attitudes in preparation for professional employment and lifelong learning. Students are trained to perform small research projects in one of the medical topics that enable them to collect data, review literature, obtain results and discuss their findings in the form of presentations. The student should: (1) describe research methodology listing elements of research, (2) collect up to date information on a particular topic, using proper sampling techniques (3) execute a small research project and analyze obtained data, (4) discuss the significance of the results obtained and research conclusions, and (5) write down a research paper, and (6) present his findings in front of the class and discusses it with his colleagues and staff.

Title	Code	Semester/Duration	Credits
Medical Ethics & Professionalism	DE-ETHIC-226	4/Longitudinal	2

The course provide an opportunity for students to incorporate ethical principles & professionalism into their students experience. the student should be able to : (1)show an understanding of history of medicine (2)discuses the research ethics (3)understanding the terminology (4)manage a death episode (5)understanding medical behavior (6)able

to give an expert witness at court.

Title	Code	Semester/Duration	Credits
DENTAL PHARMACOLOGY	DE-PHARM-312	5 or 6/Block3 weeks	3

The three-week-block introduces the students to the general principles of drug use, actions and interactions, particularly those relevant to the practice of dentistry. The student should: (1) describe the sources and nature of drugs, (2) describe the forms, routes of administration of drugs and their absorption, distribution, metabolism and excretion, (3) discuss the factors modifying drug response and the adverse drug effects and interactions, (4) discuss the use of general and local anesthetics, hypnotics, and analgesics, antiseptics, astringents, obtundents, mummifying agents, bleaching agents, styptics, disclosing agents, dentifrices, and mouth washes, and those used in dental conditions, (5) outline the use of the major CNS, cardiovascular, respiratory, endocrine, gastrointestinal, autonomic, renal, chemotherapy, vitamins and hormones.

Title	Code	Semester/Duration	Credits
DENTAL AND ORAL MICROBIOLOGY	DE-MICRO-313	5 or 6/Block4 weeks	4

This block introduces microbiological sciences to dental students. The student should: (1) describe methods and equipment of sterilization, (2) discuss the causes of infection transmission in dentistry, (3) classify microbiological organisms, (4) describe the common bacterial infections, (4) discuss the etiology, presentations, diagnoses and management of microbiological disorders affecting the oral cavity and teeth.

Title	Code	Semester/Duration	Credits
DENTAL MATERIALS	DE-MAT-315	5 /Block 4 weeks	4

This 4-week-block introduces students to the properties, quality and uses of various types of materials utilized in dental practice. The student should: (1) enumerate the aims and scope of the science of dental material, (2)describe the structure and behaviour of matter, (3)describe the use of gypsum material used in dentistry, (4) describe the nature and use of impression materials, (5) describe the properties and used of synthetic resins, as denture base, restorative and reline material (6)describe the properties and use of metals and alloys, such as dental amalgam, gold foil, gold alloys, stainless steal, chrome and cobalt alloys, (7) describe the properties and use of welding and soldering material, (8) describe the properties and uses of dental porcelain, and porcelain furnace, (9) review the material and instruments used in tooth cutting, abrasive and polishing agents

and dye and counter dye materials.

Title	Code	Semester/Duration	Credits
DENTAL AND ORAL PATHOLOGY	DE-PATH--324	5 & 6 /Longitudinal	3/semester

This longitudinal details the pathology necessary for dental practice. The student should: (1)know the basic of oral & maxillofacial disease (2)the basic concepts of differential diagnosis (3)disorders of teeth ,bone & soft tissue (4)periapical disease (5)cysts of the jaw & oral soft tissues (6)odontogenic tumors (7)biopsy & cytology (8)connective tissue disorders (9)keratoses & related disorders of oral mucosa (10)oral epithelial tumors & melanocytic lesions (11)salivary glands disorders & tumors .

Title	Code	Semester/Duration	Credits
PROSTHODONTICS– 1, 2 , 3& 4	DE-PRO-324, 412, 523	5, 6,7, 8 314=Block 4 weeks 324 =Block 3 weeks 412 = Longitudinal	3 2 4

This is a an extended clerkship (12 weeks) in three blocks on the advantages, disadvantages, indications, contraindications and the materials and techniques of removable prosthodontics. **Stuent should know:** 1- terminology, Kinnedy classification rules, denture base, Surveying, Design Laboratory work for R.P.D framework,**2-** Diagnosis & treatment planning of edentulous patients, Impression Registration of maxillomandibular relationship, Selection of artificial teeth, Try in, Patients education & instruction, Post insertion problem.**3-** terminology for RPD, Phases of RPD service Diagnosis & treatment planning, Mouth preparation for RPD, Impression materials for RPD, Support for distal extension bases, fitting of RPD frame work, -Relining, rebasing & repair for RPD, Temporary RPD.**4-** immediate denture, over denture, copy denture, single complete denture, maxillofacial prosthodontics(obturators),

Title	Code	Semester/Duration	Credits
COMMUNITY DENTISTRY AND ENTAL PUBLIC HEALTH	DE-COM-323	6/Longitudinal	4

. This course describes the practice of dentistry in the community. The student should: (1) introduction to community dentistry and dental public health, (2) health education and health promotion, (3) overview of epidemiology and epidemiology of common oral diseases (4) overview of health system, planning and economy, (5) oral hygiene and community malpractice, (6) discuss the cost of dental services and the burden of that on the individual, family, employer and state

Title	Code	Semester/Duration	Credits
GENERAL MEDICINE	DEME-MED-411	6 /Block4 weeks	4

This is a 4-week continuous clearkship, which is interrupted by longitudinal courses for one half-day every week. During this 12-week clerkship, the student should(1) demonstrate good attitudes, ethics and professional behaviour in the practice of internal medicine (2) obtains full history relevant to the medical problem in general practice, perform appropriate physical examination, requests informative and cost-effective investigations, synthesizes information to reach (or suggest differential) diagnosis, select (or suggest) proper treatment, health promotion, prevention, protection, follow up and rehabilitation, including problems seen in emergency situations, on dental and oral health. (3) outline regnition of epidemic and endemic diseases, common respiratory, cardiovascular, gastrointestinal, renal, endocrine, rheumatic, and nervous system problems, (4) demonstrate knowledge of basic and clinical sciences , relevant to internal medicine and general dental practice practice, (5) recognize urgent and emergency dental and oral conditions, (6) analyze community problems related to medical disease, and (6) essential drugs used in common medical problems(malaria, hypertension, disorders of the motor systems. coronary heart disease, congestive heart failure, arrythmias, pneumonia, asthma, causes of dyspepsia, nephrosis, nephritis and renal failure, diabetes, vomiting diarrhoea, constipation, nutritional deficiencies, anemias, hematological malignancy, bleeding disorders, osteoarthritis, rheumatoid arthritis, SLE, and gout.

Title	Code	Semester/Duration	Credits
GENERAL SURGERY	DEME-SURG-421	6 /Block4 weeks	4

This is a four-week continuous clearkship, interrupted only by longitudinal courses for one half-day every week, The student should: (1) demonstrate good attitudes, ethics and professional behaviour in the practice of surgery (2) obtain full history relevant to the surgical problem, perform appropriate physical examination, requests informative and cost-effective investigations, synthesizes information to reach (or suggest differential) diagnosis, select (or suggest) proper treatment, health promotion, prevention, protection, follow up and rehabilitation, including problems seen in emergency situations in oral and dental practice, (3) demonstrate knowledge of basic and clinical sciences, particularly anatomy, pathology, microbiology and basic skills, relevant to dental and surgery, (4) recognize urgent and emergency surgical conditions, e.g. burns, acute abdomen, head injury, (5) diagnose and manage (or detail description of management of) goitre and thyroid disorders, acute abdomen, breast lump, , lymphadenopathy, biliary and liver

surgical conditions peptic ulcer, chest trauma, (6) outline diagnostic procedures and management of cardiac surgical problems, brain tumors, , (7)describe the anesthetics for preoperative and postoperative management, (7) basic operative skills, (8) essential drugs used in general surgery.

Title	*Code*	*Semester/Duration*	*Credits*
ORAL HYGIENE	DE-HYG-322	7/Longitudinal	4

This Longitudinal is practiced mainly in the community. The student should: (1) identify the ideal health behavior in dental hygiene (2) health promotion (3) behavioral change and communication skills,(4) oral indices, (5) life style and oral health discuss, (6) dental phobia, (7) dental caries and it's prevention in details, (8) dentifrice, (9) fluorosis, (10) (ART)a traumatic restorative treatment, (11) prevention of oral cancers, (12) prevention of periodontal disease, (13) prevention of malocclusion, (14) school health program, (15) field work.

Title	*Code*	*Semester/Duration*	*Credits*
ORAL AND MAXILLOFACIAL SURGERY- 1 and 2	DE-SURG-422, 512	7 and 9 422 = Longitudinal 512 = Longitudinal	 5 5

This 12-week-clerkship divided into 2 longitudinal to introduce students to the diagnosis and management of oral surgical problems. The student should: (1) state the indications for tooth extraction, (2) evaluate patient fitness for oral surgical procedures, (3) describe the techniques of tooth extraction including transalveolar technique and the use of elevators, (4) describe the complications of extraction and their management, (5) list the acute infections of the oro-facial region, and discuss their etiology, presentation and management, (6) describe the etiology, presentation and management of bone infection in the oro-facial region, cystic lesions of the jaw, precancerous conditions of the oral cavity, facial pain, oro-antral fistulae, odontogenic tumors, benign and malignant tumors, (7) outline the diagnosis and management of orthognastic surgery including craniofacial deformities, and reconstructive surgery of skeletal and soft tissue elements, and (8) show ability to take history, do thorough examination, request appropriate investigantion and carry out patient counseling and advice.

Title	Code	Semester/Duration	Credits
CONSERVATIVE DENTISTRY- 1 2 & 3	DE-CONS-411, 41113,511	7 , 8 & 9 411= Longit 413= Longit 511=Longit	 5 2 7

This fourteen-week-clerkship divided into two longitudinal to introduces the student to various restorative skills to a level acceptable to patients and the profession. The student should: (1) define conservative dentistry, (2)review knowledge on dental materials, (3) review knowledge on the etiology, classification, presentation and prevention of dental caries, (4)describe the instruments used in operative dentistry and their use, (5) describe the principles and techniques of cavity preparation, (6) describe the use of various restorative materials: amalgam, dental matrices, their selection and application, (7) discuss the biological bases of restorative dentistry, (8) describe tooth coloured resotorative material, (9) describe the pin-technique and pin-retained restorations, (10) describe the gold foil restorations, (11) describe the intra-coronal wax pattern and cast gold restorations, (12) review the vital aesthetic restorations, and (13) organize records of patient assessment. (13)do endodontic treatment(14) restore crown and bridge and describe crown and bridge failure and repair, (15) describe the fitting and cementation of the fixed prosthodontics, (16) discuss oral hygiene in fixed prosthodontics,

Title	Code	Semester/Duration	Credits
ORAL MEDICINE	DE-OMED-424	7&8/ longitudinal	2

This is a longitudinal course (in semester 7 & 8) that aims to promote the necessary skills of taking detailed history and recording, proper clinical examination, constructing a provisional diagnosis, ordering relevant investigations and interpret them and arriving at a definitive diagnosis and management. It also enable students to recognize wide range of disorders and diseases that affect the oral cavity; teeth, their supporting tissues; the surrounding structures with greater emphasis on the oral mucosa.

Additionally, the course enforces the concept of the strong relation between health and diseases of the oral cavity and the general health. Moreover, it emphasizes the impact of systemic diseases in the management of patients who require routine dental care.

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Title	Code	Semester/Duration	Credits
PERIODENTICs- 1 and 2	DE-PERI-427-423	7&8/Logit.	2 and 4

This 12-week-clerkship provides knowledge on the diseases of periodontium. The student should: (1) describe the anatomy and histology of the periodenium, (2) describe the definition, classification, formation, composition, and diagnosis of dental plaque, (3) describe the definition, classification, formation, effects on gingival and periodontal

disease, and diagnosis of dental calculus, (4) describe the microbiology of dental plaque associated with gingival and periodontal disease, (5) discuss periodentitis, gingivitis, and differentiate between them, (6) oral hygiene as related to gingival and periodontal disease, (7) describe the non-surgical management of periodontal disease, (8) discuss the indications and contra-indications of periodontal surgery, and (9) describe orthodontic management in periodontal disease..

Title	*Code*	*Semester/Duration*	*Credits*
PEDODONTICS- 1 and 2	DE-PEDO-426 and 511	8 and 9 426 = longitudinal 513 =	2 4

This is a clerkship of two longitudinal, which aims at the common dental problems in children. The student should:

(1) follow the development of a child and its dental maturation, including the developmental anomalies of the teeth and jaws (2) list the oral habits of children, (3) list the oral manifestations of infectious and neurologic diseases, (4) outline the dental management of children with special needs, (5) describe the special arrangements in local anesthesia and tooth extraction in children, (6) outline the indications and procedures of plaque control and topical fluoride therapy, fissure sealants, amalgam and composite restorations in children, stainless steel crowns, pulpal treatment in children, extraction of primary teeth, and space management appliances, and (7) manage oral trauma.

Title	*Code*	*Semester/Duration*	*Credits*
DENTAL RADIOLOGY	DE-RAD-424	8 / Longit	2

This longitudinal clerkship provides student with the technical and diagnostic abilities of oral (and related) radiology. The student should: (1) describe the history of radiology and main imaging modalities, (2) describe the physical basis of x-ray production, attenuation and abosorption, (3) explain the techniques of obtaining tomographs and pantomographs, (4) identify major anatomic structures in the routine skull and chest x-rays, (5) produce intra-oral radiographs, and describe their normal radiographic appearance, and that of a pantomograph, (6) identify the normal variations in the shape and number of teeth in x-rays, (7) discuss the radiological diagnosis of dental caries, trauma to teeth and jaw, (8) outline and suggest the radiological diagnosis of periodontal disease, apical and peripheral problems, teeth resorption, oral and peri-oral cysts, dysplastic disease, and benign and malignant tumors.

Title	***Code***	***Semester/Duration***	***Credits***
FORENSIC DENTISTRY	DE-LAW-415	8/Block 2 weeks	2

This is a tow-week-clerkship which introduces the expanding topic of forensic pathology, using dental and oral evidence in crime detection and identification of victims and suspects. The student should: (1) list the various components of dental structure and function used in forensic pathology, (2) identify individual he/ she encountered in his training on oral observations of shape, size and number of teeth, occlusal pattern and biting marks on the body of the victim or suspect.

Title	***Code***	***Semester/Duration***	***Credits***
Management of medically complex patient	DE-MCP-417	8/Block 2 weeks	2

This is two weeks block course focus on dental management of medically complex patient. The student should be:(1) able to take detailed history and perform proper clinical examination (2) identify oral manifestations of systemic diseases (3) modify dental treatment in medically complex patient if needed (4) prescribe premedication prior to treatment of medically complex patient if needed (5) know basic guidelines for managing medical emergency In dental clinic (6) able to refer patient to physician when needed.

Title	Code	Semester/Duration	Credits
ORTHODONTICS	DE-ORTHO-514	9/Longit	6

This is a 12-week-clerkship, which is mainly about orthodontic problems and their management. The student should: (1) discuss the etiology, classification and management of malocclusion (2) fabricate removable fixed appliances for preventive, interceptive and minor corrective procedures, (3) describe the developmental anatomy of skull and occlusion, (4) show familiarity with trace cephalometric roentgenograms and space analysis control, , (5) describe the anatomy of oral muscles, (6) discuss the principles of impression techniques and model preparation, (7) describe the therapeutic methods of obtaining space, (8) enumerate and list the principles and design of removable and fixed appliances, (9) outline the management of habits of mouth breathing, finger sucking, tongue thrust, and that of abnormal labial frenulum.

Title	Code	Semester/Duration	Credits
Graduation Project	DE-GRAD-515	9/Longitudinal	4

Longitudinal module reserved to writing a short thesis ,which can be a review or experimental research. no formal didactic timetable is needed since students had a previous course on research methodology. Students will contact their supervisors to decide on the topic title &advice students to start & progress In writing .the cost of research &examinations is the responsibility of the candidate.

Title	Code	Semester/Duration	Credits
COMPREHENSIVE DENTAL CLINICAL TRAINING	DE-CDCT-521	10/ 12 weeks	20

This is a twelve-week-clerkship. It is a practical one in which the student practices comprehensive dentistry across specialty borders, dealing with all cases from all aspects of care. The student may be given a predesigned logbook containing a number of major problems. The list includes interventions and skills of various levels (from P1-P4) ranging from those which he/she should do alone to those in which he/she can only observe an expert doing it. In all he/she has to get a signature from the supervisor who witnessed the moment of doing or seeing the skill or intervention.