

ORIGINAL ARTICLE

The Development and Modernization of Bachelor Curriculum of Faculty of Dentistry University of Gezira, 2012

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Introduction

The medical health faculties of Gezira University update and modernize their curricula regularly every five to ten years to cope with the continuous global modernization and development. In Gezira University there are two centres equipped with proper set up and eminent experts staff with high capability, specialized in designing, development and modernization of curricula .This development is essential to suit the community needs, international medical advances and maintain faculties excellence and confirm graduates competency.

The project of: *The Development and Modernization of Bachelor Curriculum of Faculty of Dentistry University of Gezira* is sponsored by the Islamic Bank for Development Jeddah and Ministry of Finance Sudan and has been launched in December 2011.

The Vice Chancellor of the University of Gezira formed a committee to manage the whole task of development of curricula for all faculties in agricultural and health sectors.

Faculty of Dentistry was established in 2001 in Wad Medani City the capital of Gezira State. It was the first dental faculty established outside Khartoum the capital of Sudan. The first batch (batch 24students) was graduated in 2007.The curriculum is community oriented problem based and problem solving .Many courses are studied with medical students particularly basic sciences as part of integration between the two faculties. The Faculty philosophy conforms to the Gezira University philosophy which is built on three pillars, training, service and research. There is strong partnership between Faculty of Dentistry and Ministry of Health. This partnership has bilateral benefits.

The first curriculum of the faculty was designed and implemented in 2001. The present curriculum is bachelor of Oral/Dental Sciences (BDS) in Dentistry. The number of academic semesters is ten, the academic courses are (69) and credit hours are (231).

This article describes how the task was managed and how the curriculum was developed, as well as its objectives, strategies methodology and process. It also includes the major changes in the new curriculum.

Justifications for the development and modernization of the curriculum of the Faculty of Dentistry are to:

- Keep pace of developments in medical science and basic research and genetics
- Keep pace with the rapid development in technology and dental materials used in the field of dentistry
- Cope with the changing needs of the community and the requirements of the labor market
- Concise with the national and international accreditation standards.

Methodology:

The higher committee which was formed by Vice Chancellor of Gezira University in cooperation with dean of faculty of dentistry put a concrete plan and then supported, followed up and supervised its different activities depending on experience of trained faculty staff in curriculum development and modernization. It used the model curriculum of ministry of higher education, as a reference and reviewed the existing curriculum, and feedbacks of students and graduates, and community leaders

In its methodology for the development of curriculum for the bachelor's level the Faculty followed the following steps:

The faculty exerted great efforts to develop and update the curriculum of the bachelor. This great effort executed by different committees at Faculty and departments levels as follows: *Faculty Curriculum Committee, Committee of Basic Sciences, Committee of the dental public health, Committee of Science of*

Dentistry, List of local experts and List of International experts. (Appendices)

Total numbers of meetings held were as follows:

- At the level of the faculty: 10 meetings
- At the level of categories: 10 meetings each department

Stages of curriculum development:

Stage\Phase I: This phase included the followings, setting a detailed action plan, provision of relevant references, nomination of experts, writing clear and detailed guidelines for faculty committees.

- The higher committee organized a 7 days training course in curriculum development-6 academic staff members of the Faculty of Dentistry attended the course and benefited from it.

Stage\Phase II:

In this stage: several preparatory meetings were held for reviewing the existing curriculum to identify deficiencies in the curriculum and to define the characteristics of the graduate. The product was presented in the primary workshop for developing and updating curricula of faculties in the health sector to approve the characteristics of the graduate, the tentative degree structure, and the degree to be awarded.

Stage\Phase III:

The curriculum was written after the introduction of modifications and observations that have been done in the primary workshop.

The higher committee during its meeting on 3.8.2012 to designed a uniform format for the final workshop

The curriculum committee studied the current curriculum and other relevant curricula and references.

- Experiences of internal and external (international) experts
- Experiences of the teachers of the faculty and other faculties of Gezira University

- Curriculum of the model faculty (Ministry of Higher Education and Scientific Research Sudan).
- Faculty of Dentistry, University of Khartoum
- Faculty of Dentistry Rabat National University
- Ajman University
- Western University (USA)
- European Society accreditation to the Faculty of Dentistry – University of King Abdul Aziz(KSA)
- Accreditation of the faculties of dentistry in Sudan
- European Society guidelines for dental education
- The views of students and graduates of the Faculty of Dentistry

During this phase the degree structure (curriculum plate) of the developed curriculum was designed (semesters, courses, contact hours, credit hours). All the courses were written in details according to a uniform format. Finally the faculty organized its workshop which approved the developed curriculum. The final report-including the developed curriculum and the details of all the events of the whole task-was prepared by the committee and submitted to the vice chancellor on 15/6/2012.

Curriculum model, outcome based and competency based curriculum.

The objectives of the curriculum:

General goals to:

- Provide the student with the clinical philosophy and skills that qualify him to solve the health problems of his community
- Provide the student with the skills of self-learning and continuous lifelong learning
- Provide the student with the skills of research and leadership in the fields of dentistry and community service

Competencies of the graduates:

1- Professional skills:

- Provide humane, ethical and compassionate care to all patients
- Recognize the role of lifelong learning and self-assessment in maintaining competency
- Understand the basis of scientific methods and apply this process to the practice of dentistry
- Understand and act in accordance with government/regulatory standards and legal requirements Sudan Medical Council (SMC).

II- Communication skills:

- Communicate with patients and relatives from culturally diverse backgrounds and manage their special needs related to care
- Communicate with peers, medical team, and the public at large

III- Information and Practice management:

- Apply critical thinking and problem solving skills in comprehensive care of patients
- Perform and monitor infection control and environmental safety measures according to current standards
- Apply information technology resources in contemporary dental practice and maintain patient records
- Understand the basic principle of practice management and have the skill to function successfully as the leader of the oral health care team

IV- Patient Care:

1- Patient Assessment:

- Identify a patient chief complain, general needs and expectations
- Perform a complete dental and clinical examination
- Obtain clinical radiographic and other investigations
- Obtain medical and dental consultation when appropriate
- Integrate subjective and objective clinical findings in the formulation of the diagnosis

2- Treatment planning

- Formulate an individual, comprehensive, sequenced treatment plan using diagnostic information from the assessment of the patient
- Identify the need for referral when appropriate

- Perform and evaluate preventive therapies
- Restore defective and missing teeth
- Manage patient with periodontal disease
- Manage patient with pulpal and periradicular disease
- Manage patient with occlusal disorder
- Manage patient with oral mucosal disorders
- Manage patient requiring oral surgical procedures
- Recognize and manage the behavioral preventive, developmental and treatment needs of children

The Structure of the Curriculum:

Structure of the developed curriculum

- The curriculum consists of (10) semesters, the duration of each semester (15) weeks.
- The curriculum includes (69) courses studied in (231) credit hours as shown in the table below

Table 1:

No.	Courses	No. of courses	Credit hours	
1	University requirements	11	23`	10%
2	Basic sciences	22	85	37%
3	Dental sciences	36	123	53%
Total		69	231	100%

Table 2: The Previous structure of the curriculum

No.	Courses	No. of courses	Credit hours	
1	University requirements	10	20	9%
2	Basic sciences	22	98	43%
3	Dental sciences	27	110	48%
Total		59	228	100%

Table 3: General features of the development of the curriculum

No.	Courses	No. of courses	Credit hours	
1	Un changed courses	10	30	13%
2	Deleted courses	1	2	1%
3	New courses	7	30	13%
4	Courses changed in position	25	83	36%
5	Courses changed in credit hours	34	111	48%
6	Courses changed their names	27	85	37
7	Courses changed their contents	41	148	64%
Total		69	-	-

Table 4: Distribution of credit hours for the semesters

No.	Semester	Credit hours	Theory	Practical
1	One	22	17	10
2	Two	24	17	14
3	Three	24	19	10
4	Four	22	18	8
5	Five	27	14	26
6	Six	24	16	16
7	Seven	27	17	20
8	Eight	20	10	20
9	Nine	22	9	26
10	Ten	19	5	28
Total		231	142	178

Teaching methods

- Lectures
- Seminars
- Duties
- Laboratory Practical
- Learning by solving problems
- Clinical training in (Dental hospital, health centers and rural residency)

جامعة الجزيرة - كلية طب الاسنان

Curriculum Bachelor of Dentistry - Curriculum Plate 2012

- منهج بكالوريوس طب و جراحة الاسنان - لوحة المنهج حسب الفصول الدراسية

SEMESTER ONE		الفصل الدراسي الاول:		
No	Course Name	الساعات المعتمدة	اسم المقرر	الرقم
1	Introduction to Study of Dentistry	(2+1)2	مدخل لدراسة طب الاسنان	1
2	Biochemistry I	(2+4) 5	الكيمياء الاحيائية I	2
3	Cell Biology and Histology	(2+2) 3	علم الانسجة و الخلايا	3
4	Man and His Environment	(2+3) 4	الانسان و بيئته	4
5	Basic Skills	(2+1) 2	المهارات الاساسية	5
6	Source of Islamic Knowledge	(0+2) 2	مصادر المعرفة الاسلامية	6
7	Arabic (Language Skills)	(0+2) 2	اللغة العربية "المهارات اللغوية"	7
8	English (Introductory Skills)	(0+2) 2	اللغة الانجليزية (Introductory Skills)	8
Total Credit Hours		22 (10+17)	مجموع الساعات المعتمدة	

SEMESTER TWO		الفصل الدراسي الثاني:		
No	Course Name	الساعات المعتمدة	اسم المقرر	الرقم
1	Growth and Development	(2+2) 3	النمو و التطور	1
2	Biochemistry II	(2+2) 3	الكيمياء الاحيائية II	2
3	Physics for Dentistry	(2+2) 3	الفيزياء لطب الاسنان	3
4	Microbiology and Immunology	(2+3) 4	علم الاحياء الدقيقة و المناعة	4
5	General Pathology	(2+3) 4	علم الامراض العام	5
6	Basis of Computer	(4+1) 3	اساسيات الحاسوب	
7	Arabic (writing and Arts of Expression)	(0+2) 2	اللغة العربية "الكتابة و فنون التعبير"	
8	English (Language in Use)	(0+2) 2	اللغة الانجليزية (Language in Use)	8
Total Credit Hours		(14+17)24	مجموع الساعات المعتمدة	

SEMESTER THREE		الفصل الدراسي الثالث:		
No	Course Name	الساعات المعتمدة	اسم المقرر	الرقم
1	Nutrition and Nutritional Biochemistry	(2+3) 4	التغذية و كيميائها الاحيائية	1
2	The Doctor and His Society and Doctor Figh and medical professionalism	(2+3) 4	الطبيب و مجتمعه وفقه الطبيب و مهنية الطبيب	2
3	Blood and Blood Related Problems	(2+3) 4	الدم و المشاكل المتعلقة به	3
4	Anatomy of The Head & Neck	(2+2) 3	تشريح الراس و العنق	4
5	Dental Morphology	(2+2) 3	الشكل الظاهري للاسنان	5
6	Medical Statistic	(0+2) 2	الاحصاء الطبي	6
7	Arabic (Dictionary & Terminology)	(0+2) 2	اللغة العربية "المعاجم و المصطلحات"	7
8	English (Register In Focus)	(0+2) 2	اللغة الانجليزية (Register In Focus)	8
Total Credit Hours		(10+19)24	مجموع الساعات المعتمدة	

SEMESTER FOUR		الفصل الدراسي الرابع:		
No	Course Name	الساعات المعتمدة	اسم المقرر	الرقم
1	Musculoskeletal System and Its problems	(2+3) 4	الجهاز العضلي الحركي و مشاكله	1
2	Pharmacology for Dentistry	(0+3) 3	علم الادوية لطب الاسنان	2
3	The Cardio- pulmonary System and Its problems I	(2+3) 4	الجهاز الدوري التنفسي و مشاكله	3
4	Dental Materials	(2+1) 2	مواد الاسنان	4
5	oral Histology& embryology	(2+2) 3	علم انسجة الفم و علم الاجنة	5
6	Goals of Islamic Shariaa	(0+2) 2	مقاصد الشريعة الاسلامية	6
7	Arabic (Applied Texts)	(0+2) 2	اللغة العربية " النصوص التطبيقية"	7
8	English (Professional Skills)	(0+2) 2	اللغة الانجليزية (Professional Skills)	8
Total Credit Hours		(8+18)22	مجموع الساعات المعتمدة	

EMESTER FIVE		الفصل الدراسي الخامس:		
No	Course Name	الساعات المعتمدة	اسم المقرر	الرقم
1	The Cardio-pulmonary System and Its problems II	(2+3) 4	الجهاز الدوري التنفسي و مشاكله II	1
2	Endocrine System and Its problems	(2+3) 4	جهاز الغدد الصم و مشاكله	2
3	General Surgery	(2+2) 3	الجراحة العامة	3
4	Primary health care in health centre and families	(2+2) 3	الرعاية الصحية الاولى بالمراكز الصحية والاسر	4
5	Gastro Intestinal System and Its problems	(2+3) 4	الجهاز المعدي المعوي و مشاكله	5
6	Field Training Research And Rural Development I	(16+1) 9	التدريب الميداني والبحث و برنامج تطوير الريف I	6
Total Credit Hours		(26+14)27	مجموع الساعات المعتمدة	

SEMESTER SIX		الفصل الدراسي السادس:		
No	Course Name	الساعات المعتمدة	اسم المقرر	الرقم
1	The Central Nervous System and Its problems	(4+4) 6	الجهاز العصبي المركزي و مشاكله	1
2	Urogenital System and Its problems	(2+2) 3	الجهاز البولي التناسلي و مشاكله	2
	Oral Pathology I	(2+1) 2	علم امراض الفم I	
3	Operative Dentistry I	(2+3) 4	العلاج التحفظي I	3
4	Prosthetic Dentistry I	(2+2) 3	الاستعاضة الصناعية I	4
5	Dental Radiology	(2+2) 3	علم الاشعة السنية	5
6	Oral Epidemiology and Preventive Dentistry	(2+2) 3	وبائيات امراض الفم وطب الاسنان الوقائي	6
Total Credit Hours		(16+16)24	مجموع الساعات المعتمدة	

SEMESTER SEVEN		الفصل الدراسي السابع:		
No	Course Name	الساعات المعتمدة	اسم المقرر	الرقم
1	Oral Pathology II	(2+2) 3	علم امراض الفم II	1
2	Operative Dentistry II	(2+3) 4	العلاج التحفظي II	2
3	Prosthetic Dentistry II	(2+2) 3	الاستعاضة الصناعية II	3
4	Oral Surgery I	(2+3) 4	جراحة الفم I	4
5	Endodontics I	(2+2) 3	علاج الجذور I	5
6	Periodontics I	(2+2) 3	امراض اللثة I	6
7	Management and Health Economy	(2+2) 3	الادارة و اقتصاديات الصحة	7
8	Field Training Research and Rural Development II	(6+1) 4	التدريب الميداني والبحث و برنامج تطوير الريف II	8
Total Credit Hours		(20+17)27	مجموع الساعات المعتمدة	

SEMESTER EIGHT		الفصل الدراسي الثامن:		
No	Course Name	الساعات المعتمدة	اسم المقرر	الرقم
1	Oral Surgery II	(2+3) 4	جراحة الفم II	1
2	Periodontics II	(2+1) 2	امراض اللثة II	2
3	Endodontics II	(2+1) 2	علاج الجذور II	3
4	Fixed Prothodontic I	(2+2) 3	التركيبات الثابتة I	4
5	Oral Medicine	(2+2) 3	طب الفم	5
6	Clinical Dentistry I	(10+1) 6	طب الاسنان السريري I	6
Total Credit Hours		(20+10)20	مجموع الساعات المعتمدة	

SEMESTER NINE		الفصل الدراسي التاسع:		
No	Course Name	الساعات المعتمدة	اسم المقرر	الرقم
1	Oral Surgery III	(2+1) 2	جراحة الفم III	1
2	Periodontics III	(2+2) 3	امراض اللثة III	2
3	Fixed Prothodontic II	(2+1) 2	التركيبات الثابتة II	3
4	Pedodontics I	(2+2) 3	طب اسنان الاطفال I	4
5	Orthodontics I	(4+2) 4	تقويم الاسنان I	5
6	Clinical Dentistry II	(12+0) 6	طب الاسنان السريري II	6
7	Forensic Dentistry	(2+1) 2	طب الاسنان الشرعي	7
Total Credit Hours		(26+9)22	مجموع الساعات المعتمدة	

SEMESTER TEN		الفصل الدراسي العاشر:		
No	Course Name	الساعات المعتمدة	اسم المقرر	الرقم
1	Pedodontics II	(2+2) 3	طب اسنان الاطفال II	1
2	Orthodontics II	(2+2) 3	تقويم الاسنان II	2
3	Clinical Dentistry III	(12+0) 6	طب الاسنان السريري III	3
4	Rural Residency	(12+1) 7	الاقامة الريفية	4
Total Credit Hours		(28+5)19	مجموع الساعات المعتمدة	

- **Total Credit Hours: 231**

National Admission Requirements:

The student must meet the admission requirements as determined by the list of admissions at the Ministry of Higher Education and Scientific Research, and must be nominated after competing depending on results in the Sudan Certificate Examination.

Registration Procedures:

Students are placed according to academic regulations for University studies for the year 2007.

Awarded Degree:

The University of Gezira awards the degree of Bachelor of oral\dental (BDS) in Dentistry for the students with a(10) semesters cumulative GPA of (2.00) and above after successfully completing the prescribed curriculum.

Appendices

List of local experts:

Name : Prof. Kamal Abbas, FDSRCS, MD,

Name : Prof. Ahmed Mohamed Soliman, FDSRCS, Ph.D

List of International experts:

Name : Prof. TS GUGUSHE, BSc (SA), BDS, DHSM, M dent (wit), South Africa.

Name: Prof. Kamal.Babker.Elnor
BDS,MSc, MDD, NORWAY

Conclusion:

The Faculty of Dentistry benefited from the guidelines of the University higher committee-curriculum development, implementation, support and supervision at all stages of the task. Also the tremendous efforts of the other dental staff members and addition to experience of the local and international experts lead to an established comprehensive modern model of dental curriculum which graduate competent dentists, adds to the excellence of the University of Gezira. The authors recommend it for other national Faculties of Dentistry.

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- 13-Experience of external experts (international)
- 14-Experiences of faculty teachers
- 15-Experiences of other faculty teachers
- 15-deanacadaffair@UofG.edu.sd