

# Republic of Yemen

Ministry of Higher Education & Scientific Research

Emirates International University



## Faculty of Dentistry

Department of Oral Surgery

Program of Doctor of Dental Surgery

## Course Specification of Implantology

Course No. ()



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Review committee:

Head of the Department

Quality Assurance head

Dean of Faculty

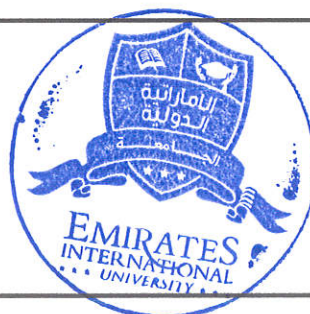


## I. Course Identification and General Information:

1	Course Title:	Implantology			
2	Course Code & Number:				
3	Credit Hours:	Credit Hours	Theory Hours		Lab. Hours
			Lecture	Exercise	
		2	1	--	1
4	Study Level/ Semester at which this Course is offered:	5 <sup>th</sup> Level / 2 <sup>nd</sup> Semester			
5	Pre –Requisite (if any):	Maxillo-facial Surgery I			
6	Co –Requisite (if any):	None			
7	Program (s) in which the Course is Offered:	Doctor of Dental Surgery			
8	Language of Teaching the Course:	English			
9	Study System:	Semester based System			
10	Mode of Delivery:	Full Time			
11	Location of Teaching the Course:	Faculty of Dentistry			
12	Prepared by:	Dr. Sam Da'er			

## II. Course Description:

This course provide the student with knowledge in the field of implant therapy in accordance with professional and scientific developments in the field of modern dental science. The student will master the elementary knowledge and skills for independent work in field of dental implants.





III. Course Intended Learning Outcomes (CILOs) : Upon successful completion of the course, students will be able to:		Referenced PILOs Learning out of program		
<b>A. Knowledge and Understanding:</b>		I, A or E		
a1	Describe Introduction to basic terms in implantology, materials in implantology and anatomic preconditions,			A1
a2	Explain indications and contraindications for implantation and planning preoperative preparations.			A5
a3	Identify the surgical techniques of implant insertion, implant supported crowns and bridges, implant overdentures, intraoperative and postoperative complications, importance of oral hygiene and methods for maintaining the health of peri-implant tissues.			A4
<b>B. Intellectual Skills:</b>				
b1	Analyze and correlate clinical laboratory data and special investigations to help formulate a proper relevant treatment plans			B2
b2	Discuss the advantages and disadvantages of relevant treatment plans with patients			B1
<b>C. Professional and Practical Skills:</b>				
c1	Correctly record patient history and perform an appropriate physical examination including intraoral and extraoral examination			C1, C2
c2	Display competency in managing edentulous patient and preservation of alveolar bone after teeth extraction.			C6
<b>D. Transferable Skills:</b>				



d1	Use advanced information technologies in preparation and delivery of topics related to dental implant.			D2
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**(A) Alignment of Course Intended Learning Outcomes (Knowledge and Understanding) to Teaching Strategies and Assessment Methods:**

	Course Intended Learning Outcomes	Teaching Strategies	Assessment Strategies
a1	Describe Introduction to basic terms in implantology, materials in implantology and anatomic preconditions,	<ul style="list-style-type: none"> <li>▪ Lectures</li> <li>▪ Discussion</li> </ul>	<ul style="list-style-type: none"> <li>▪ Quizzes</li> <li>▪ Midterm exam</li> <li>▪ Final exam</li> <li>▪ Oral exam</li> </ul>
a2	Explain indications and contraindications for implantation and planning preoperative preparations.	<ul style="list-style-type: none"> <li>▪ Lectures</li> <li>▪ Discussion</li> </ul>	<ul style="list-style-type: none"> <li>▪ Quizzes</li> <li>▪ Midterm exam</li> <li>▪ Final exam</li> <li>▪ Oral exam</li> </ul>
a3	Identify the surgical techniques of implant insertion, implant supported crowns and bridges, implant overdentures, intraoperative and postoperative complications, importance of oral hygiene and methods for maintaining the health of peri-implant tissues.	<ul style="list-style-type: none"> <li>▪ Lectures</li> <li>▪ Discussion</li> </ul>	<ul style="list-style-type: none"> <li>▪ Quizzes</li> <li>▪ Midterm exam</li> <li>▪ Final exam</li> <li>▪ Oral exam</li> </ul>

**(B) Alignment of Course Intended Learning Outcomes (Intellectual Skills) to Teaching Strategies and Assessment Methods:**

	Course Intended Learning Outcomes	Teaching Strategies	Assessment Strategies
b1	Analyze and correlate clinical laboratory data and special investigations to help formulate a proper relevant treatment plans	<ul style="list-style-type: none"> <li>▪ Lectures</li> <li>▪ Discussion</li> </ul>	<ul style="list-style-type: none"> <li>▪ Quizzes</li> <li>▪ Midterm exam</li> <li>▪ Final exam</li> <li>▪ Oral exam</li> </ul>
b2	Discuss the advantages and disadvantages of relevant treatment plans with patients	<ul style="list-style-type: none"> <li>▪ Lectures</li> <li>▪ Discussion</li> </ul>	<ul style="list-style-type: none"> <li>▪ Quizzes</li> <li>▪ Midterm exam</li> <li>▪ Final exam</li> <li>▪ Oral exam</li> </ul>

**(C) Alignment of Course Intended Learning Outcomes (Professional and Practical Skills) to Teaching Strategies and Assessment Methods:**





Course Intended Learning Outcomes		Teaching Strategies	Assessment Strategies
c1	Correctly record patient history and perform an appropriate physical examination including intraoral and extraoral examination	<ul style="list-style-type: none"> <li>▪ Demonstration</li> <li>▪ Debate</li> </ul>	<ul style="list-style-type: none"> <li>▪ Homework</li> </ul>
c2	Display competency in managing edentulous patient and preservation of alveolar bone after teeth extraction.	<ul style="list-style-type: none"> <li>▪ Demonstration</li> <li>▪ Debate</li> </ul>	<ul style="list-style-type: none"> <li>▪ Homework</li> </ul>
<b>(D) Alignment of Course Intended Learning Outcomes (Transferable Skills) to Teaching Strategies and Assessment Methods:</b>			
Course Intended Learning Outcomes		Teaching Strategies	Assessment Strategies
d1	Use advanced information technologies in preparation and delivery of topics related to dental implant.	<ul style="list-style-type: none"> <li>▪ Discussion</li> <li>▪ Brainstorming</li> </ul>	<ul style="list-style-type: none"> <li>▪ Homework</li> </ul>

#### IV. Course Contents:

##### A. Theoretical Aspect:

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours	Learning Outcomes (CILOs)
1	<b>Anatomy consideration in implant dentistry</b>	a. Surgical anatomy of the maxilla - Sensor innervation of the maxilla - Maxillary artery - Vein drainage of the maxilla - Lymph drainage of the maxilla - Muscle insertion of the maxilla b. Surgical anatomy of the mandible - Muscle insertion of the mandible - innervation of the mandible - Blood vessels of the mandible	1 <sup>st</sup> -2 <sup>nd</sup>	2	a1



No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours	Learning Outcomes (CILOs)
		c. Dissemination of dental infection			
2	<b>Clinical biomechanics in implant dentistry</b>	a. Loads applied to dental implants b. Mass, force and weight c. Force delivery and failure mechanism	3 <sup>rd</sup>	1	a2, b1
3	<b>Bone physiology, metabolism and biomechanics</b>	a. Osteology: maxilla, mandible and TMJ b. Specific methods of evaluation c. Bone Classification d. Modeling and remodeling e. Growth and maturation of the cortex f. Deposition of calcium g. Metabolic bone disorders h. Wound healing of the bone tissue	4 <sup>th</sup> -6 <sup>th</sup>	3	a1, b2
4	<b>Evaluation of the patient for implant treatment</b>	a. Diagnostic protocol and techniques in implant dentistry b. Forces factors related to health condition in patients c. Chewing dynamics d. Position of dental arches e. Risk factors	7 <sup>th</sup>	1	a2, b2
5	<b>Midterm Exam</b>		8 <sup>th</sup>	1	a1, a2, b1
6	<b>Pre-implant prosthodontics consideration: evaluation, specific criteria and pre-implant prosthodontics solution</b>	a. Maxillary anterior tooth position b. Vertical dimension c. Occlusal plane d. Lip angle e. Maxilla-mandibular arch relationship	9 <sup>th</sup> -11 <sup>th</sup>	3	a3, b2



No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours	Learning Outcomes (CILOs)
		<ul style="list-style-type: none"> <li>f. Existing occlusion</li> <li>g. Temporomandibular joint</li> <li>h. Fixed prosthodontics restorations</li> <li>i. Removable prosthodontics</li> <li>j. Esthetic evaluation</li> <li>k. Psychological profile</li> <li>l. Financial barrier</li> <li>m. Progressive load</li> </ul>			
7	<b>Surgical protocol of implant placement "STEP BY STEP"</b>	<ul style="list-style-type: none"> <li>a. Surgical set introduction</li> <li>b. implantology set introduction</li> <li>c. Implant positioning at partial edentulous patient</li> <li>d. Implant positioning at complete edentulous patient</li> <li>e. Surgical incision</li> <li>f. Pilot drill</li> <li>g. Twistdrill</li> <li>h. Bone spreading</li> <li>i. Treatment of the cortex before implant placement</li> <li>j. Implant and cover screw placement</li> <li>k. Selection of suture technique and surgical thread</li> <li>l. Bone replacement before, during and after implant insertion</li> <li>m. Medical treatment of patients with dental implants</li> <li>n. Complications during and after implant placement</li> </ul>	12 <sup>th</sup> -13 <sup>th</sup>	2	a2, a3
8	<b>Prosthodontic treatment in</b>	<ul style="list-style-type: none"> <li>a. Learning about prosthodontics abutments and tools in dental</li> </ul>	4 <sup>th</sup>	2	b2



No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours	Learning Outcomes (CILOs)
	<b>patients with dental implants</b>	<ul style="list-style-type: none"> <li>a. implantology</li> <li>b. Impression technique in dental implantology</li> <li>c. Role and importance of occlusal anatomy and height of artificial teeth in patients with dental implants</li> <li>d. Procedures and options for replacing one tooth</li> <li>e. Methods and possibilities of replacing more teeth in partially edentulous patients</li> <li>f. Procedures and possibilities for replacing all lost teeth with totally edentulous patients</li> </ul>			
9	<b>Sinus lift</b>	<ul style="list-style-type: none"> <li>a. Anatomy of maxillary sinus</li> <li>b. Learning about surgical and implant tools and materials used in sinus lift procedure</li> <li>c. Opening of the lateral wall</li> <li>d. Elevation of sinus mucosa-Schneiderian membrane</li> <li>e. Resorbable membrane placement</li> <li>f. placement and condensation of artificial bone</li> <li>g. Implant and SIS positioning</li> <li>h. Unresorbable membrane placement</li> <li>i. Selection of suture technique and surgical thread</li> <li>j. Medical treatment of patients</li> <li>k. Complications during and after sinus lift</li> </ul>	15 <sup>th</sup>	1	a3, b2





No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours	Learning Outcomes (CILOs)
10	Final Exam		16 <sup>th</sup>	16	a1-a3, b1-b2
<b>Number of Weeks /and Units Per Semester</b>			<b>16</b>	<b>16</b>	

### V. Teaching Strategies of the Course:

Lectures  
Debate  
Discussion  
Brainstorming  
Demonstration

### VI. Assessment Methods of the Course:

Quizzes  
Midterm exam  
Final exam  
Oral exam  
Homework

### VII. Assignments:

No.	Assignments	Week Due	Mark	Aligned CILOs (symbols)
1	Presentation	2 <sup>nd</sup> - 15 <sup>th</sup>	10	b1, b2, c1, c2, d1
<b>Total</b>			<b>10</b>	



### VIII. Schedule of Assessment Tasks for Students During the Semester:

No.	Assessment Method	Week Due	Mark	Proportion of Final Assessment	Aligned Course Learning Outcomes
1	Quizzes	4 <sup>th</sup> , 12 <sup>th</sup>	10	10%	a1-a3, b1-b2
2	Midterm exam	8 <sup>th</sup>	20	20%	a1, a2, b1
3	Assignments	2 <sup>nd</sup> - 15 <sup>th</sup>	10	10%	b1, b2, c1, c2, d1
4	Oral exam	16 <sup>th</sup>	10	10%	a1-a3, b1-b2
5	Final exam	16 <sup>th</sup>	50	50%	a1-a3, b1-b2
<b>Total</b>			<b>100</b>	<b>100%</b>	

### IX. Learning Resources:

#### 1- Required Textbook(s) ( maximum two ):

Carl E. Misch. 2008. Contemporary Implant Dentistry. Third edition. Missouri: Mosby Elsevier

#### 2- Essential References:

D. Wismeijer, S Chen, D Buser, F. Müller, S. Barter, ITI , 2016. Treatment Guide Implant therapy in the Geriatric Patient. Berlin. Quintessence Publishing..

#### 3- Electronic Materials and Web Sites etc.:

1- <http://www.pubmed.com>

### X. Course Policies: (Based on the Uniform Students' By law (2007))

<b>1</b>	<b>Class Attendance:</b> Class Attendance is mandatory. A student is considered absent and shall be banned from taking the final exam if his/her absence exceeds 25% of total classes.
<b>2</b>	<b>Tardiness:</b> A student will be considered late if he/she is not in class after 10 minutes of the start time of class.
<b>3</b>	<b>Exam Attendance/Punctuality:</b> No student shall be allowed to the exam hall after 30 minutes of the start time, and shall not leave the hall before half of the exam time has passed.
<b>4</b>	<b>Assignments &amp; Projects:</b> Assignments and projects must be submitted on time. Students who delay their assignments or





	projects shall lose the mark allocated for the same.
5	<b>Cheating:</b> Cheating is an act of fraud that results in the cancelation of the student's exam or assignment. If it takes place in a final exam, the penalties stipulated for in the Uniform Students' Bylaw (2007) shall apply.
6	<b>Forgery and Impersonation:</b> Forgery/Impersonation is an act of fraud that results in the cancelation of the student's exam, assignment or project. If it takes place in a final exam, the penalties stipulated for in the Uniform Students' Bylaw (2007) shall apply.
7	<b>Other policies:</b> The University official regulations in force will be strictly observed and students shall comply with all rules and regulations of the examination set by the Department, Faculty and University Administration.

## Faculty of Dentistry

### Department of Oral Surgery

#### Program of Doctor of Dental Surgery

## Course Plan (Syllabus) of Implantology

Course No. ()



### I. Information about Faculty Member Responsible for the Course:

Name of Faculty Member:		Office Hours					
Location & Telephone No.:							
E-mail:		SAT	SUN	MON	TUE	WED	THU

### II. Course Identification and General Information:

1	Course Title:	Implantology			
2	Course Code & Number:				
3	Credit Hours:	Credit Hours	Theory Hours		Lab. Hours
			Lecture	Exercise	
		2	1	--	1
4	Study Level/ Semester at which this Course is offered:	5th Level / 2nd Semester			
5	Pre -Requisite (if any):	Maxillo-facial Surgery I			
6	Co -Requisite (if any):	None			
7	Program (s) in which the Course is Offered:	Doctor of Dental Surgery			





8	Language of Teaching the Course:	English
9	Study System:	Semester based System
10	Mode of Delivery:	Full Time
11	Location of Teaching the Course:	Faculty of Dentistry
12	Prepared by:	Dr. Sam Da'er

### III. Course Description:

This course provide the student with knowledge in the field of implant therapy in accordance with professional and scientific developments in the field of modern dental science. The student will master the elementary knowledge and skills for independent work in field of dental implants.

### IV. Course Intended Learning Outcomes (CILOs) :

Upon successful completion of the Course, student will be able to:

	<b>A. Knowledge and Understanding:</b>
a1	Describe Introduction to basic terms in implantology, materials in implantology and anatomic preconditions,
a2	Explain indications and contraindications for implantation and planning preoperative preparations.
a3	Identify the surgical techniques of implant insertion, implant supported crowns and bridges, implant overdentures, intraoperative and postoperative complications, importance of oral hygiene and methods for maintaining the health of peri-implant tissues.
	<b>B. Intellectual Skills:</b>
b1	Analyze and correlate clinical laboratory data and special investigations to help formulate a proper relevant treatment plans
b2	Discuss the advantages and disadvantages of relevant treatment plans with patients



### C. Professional and Practical Skills:

c1	Correctly record patient history and perform an appropriate physical examination including intraoral and extraoral examination
c2	Display competency in managing edentulous patient and preservation of alveolar bone after teeth extraction.

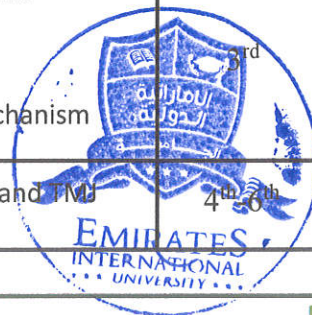
### D. Transferable Skills:

d1	Use advanced information technologies in preparation and delivery of topics related to dental implant.
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## V. Course Contents:

### A. Theoretical Aspect:

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours
1	<b>Anatomy consideration in implant dentistry</b>	a. Surgical anatomy of the maxilla - Sensor innervation of the maxilla - Maxillary artery - Vein drainage of the maxilla - Lymph drainage of the maxilla - Muscle insertion of the maxilla b. Surgical anatomy of the mandible - Muscle insertion of the mandible - innervation of the mandible - Blood vessels of the mandible c. Dissemination of dental infection	1 <sup>st</sup> -2 <sup>nd</sup>	2
2	<b>Clinical biomechanics in implant dentistry</b>	a. Loads applied to dental implants b. Mass, force and weight c. Force delivery and failure mechanism		1
3	<b>Bone physiology, metabolism and</b>	a. Osteology: maxilla, mandible and TMJ	4 <sup>th</sup> -6 <sup>th</sup>	3

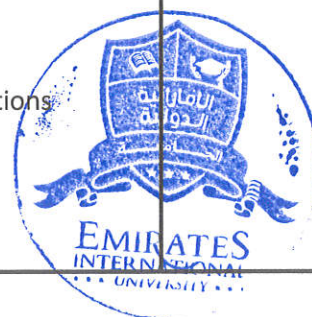




## V. Course Contents:

### A. Theoretical Aspect:

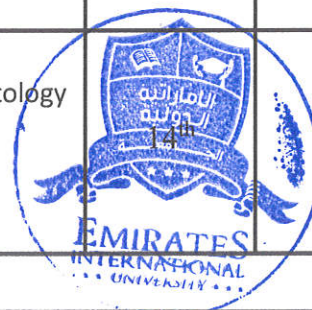
No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours
	<b>biomechanics</b>	<ul style="list-style-type: none"> <li>b. Specific methods of evaluation</li> <li>c. Bone Classification</li> <li>d. Modeling and remodeling</li> <li>e. Growth and maturation of the cortex</li> <li>f. Deposition of calcium</li> <li>g. Metabolic bone disorders</li> <li>h. Wound healing of the bone tissue</li> </ul>		
4	<b>Evaluation of the patient for implant treatment</b>	<ul style="list-style-type: none"> <li>a. Diagnostic protocol and techniques in implant dentistry</li> <li>b. Forces factors related to health condition in patients</li> <li>c. Chewing dynamics</li> <li>d. Position of dental arches</li> <li>e. Risk factors</li> </ul>	7 <sup>th</sup>	1
5	<b>Midterm Exam</b>		8 <sup>th</sup>	1
6	<b>Pre-implant prosthodontics consideration: evaluation, specific criteria and pre-implant prosthodontics solution</b>	<ul style="list-style-type: none"> <li>a. Maxillary anterior tooth position</li> <li>b. Vertical dimension</li> <li>c. Occlusal plane</li> <li>d. Lip angle</li> <li>e. Maxilla-mandibular arch relationship</li> <li>f. Existing occlusion</li> <li>g. Temporomandibular joint</li> <li>h. Fixed prosthodontics restorations</li> <li>i. Removable prosthodontics</li> <li>j. Esthetic evaluation</li> </ul>	9 <sup>th</sup> -11 <sup>th</sup>	3



## V. Course Contents:

### A. Theoretical Aspect:

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours
		<ul style="list-style-type: none"> <li>k. Psychological profile</li> <li>l. Financial barrier</li> <li>m. Progressive load</li> </ul>		
7	<b>Surgical protocol of implant placement "STEP BY STEP"</b>	<ul style="list-style-type: none"> <li>a. Surgical set introduction</li> <li>b. implantology set introduction</li> <li>c. Implant positioning at partial edentulous patient</li> <li>d. Implant positioning at complete edentulous patient</li> <li>e. Surgical incision</li> <li>f. Pilot drill</li> <li>g. Twistdrill</li> <li>h. Bone spreading</li> <li>i. Treatment of the cortex before implant placement</li> <li>j. Implant and cover screw placement</li> <li>k. Selection of suture technique and surgical thread</li> <li>l. Bone replacement before, during and after implant insertion</li> <li>m. Medical treatment of patients with dental implants</li> <li>n. Complications during and after implant placement</li> </ul>	12 <sup>th</sup> -13 <sup>th</sup>	2
8	<b>Prosthetic treatment in patients with dental implants</b>	<ul style="list-style-type: none"> <li>a. Learning about prosthetics abutments and tools in dental implantology</li> <li>b. Impression technique in dental implantology</li> </ul>		1





## V. Course Contents:

### A. Theoretical Aspect:

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours
		<p>c. Role and importance of occlusal anatomy and height of artificial teeth in patients with dental implants</p> <p>d. Procedures and options for replacing one tooth</p> <p>e. Methods and possibilities of replacing more teeth in partially edentulous patients</p> <p>f. Procedures and possibilities for replacing all lost teeth with totally edentulous patients</p>		
9	<b>Sinus lift</b>	<p>a. Anatomy of maxillary sinus</p> <p>b. Learning about surgical and implant tools and materials used in sinus lift procedure</p> <p>c. Opening of the lateral wall</p> <p>d. Elevation of sinus mucosa- Schneiderian membrane</p> <p>e. Resorbable membrane placement</p> <p>f. placement and condensation of artificial bone</p> <p>g. Implant and SIS positioning</p> <p>h. Unresorbable membrane placement</p> <p>i. Selection of suture technique and surgical thread</p> <p>j. Medical treatment of patients</p> <p>k. Complications during and after sinus lift</p>	15 <sup>th</sup>	1
10	<b>Final Exam</b>		16 <sup>th</sup>	16



## V. Course Contents:

### A. Theoretical Aspect:

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours
Number of Weeks /and Units Per Semester			16	16

## VI. Teaching Strategies of the Course:

- Lectures
- Debate
- Discussion
- Brainstorming
- Demonstration

## VII. Assessment Methods of the Course:

- Quizzes
- Midterm exam
- Final exam
- Oral exam
- Homework

## VIII. Assignments:

No.	Assignments	Week Due	Mark
1	Presentation	2nd- 15th	10
Total			10

## IX. Schedule of Assessment Tasks for Students During the Semester:





No.	Assessment Method	Week Due	Mark	Proportion of Final Assessment
1	Quizzes	4 <sup>th</sup> , 12 <sup>th</sup>	10	10%
2	Midterm exam	8 <sup>th</sup>	20	20%
3	Assignments	2 <sup>nd</sup> - 15 <sup>th</sup>	10	10%
4	Oral exam	16 <sup>th</sup>	10	10%
5	Final exam	16 <sup>th</sup>	50	50%
<b>Total</b>			<b>100</b>	<b>100%</b>

## X. Learning Resources:

### 1- Required Textbook(s) ( maximum two ):

Carl E. Misch. 2008. Contemporary Implant Dentistry. Third edition. Missouri: Mosby Elsevier

### 2- Essential References:

D. Wismeijer, S Chen, D Buser, F. Müller, S. Barter, ITI , 2016. Treatment Guide Implant therapy in the Geriatric Patient. Berlin. Quintessence Publishing..

### 3- Electronic Materials and Web Sites etc.:

<http://www.pubmed.com>

## XI. Course Policies: (Based on the Uniform Students' Bylaw (2007))

### Class Attendance:

1 Class Attendance is mandatory. A student is considered absent and shall be banned from taking the final exam if his/her absence exceeds 25% of total classes.

### Tardiness:

2 A student will be considered late if he/she is not in class after 10 minutes of the start time of class.

### Exam Attendance/Punctuality:

3 No student shall be allowed to the exam hall after 30 minutes of the start time, and shall not leave the hall before half of the exam time has passed.

### Assignments & Projects:

4 Assignments and projects must be submitted on time. Students who delay their assignments or projects shall lose the mark allocated for the same.

### Cheating:



	<p>Cheating is an act of fraud that results in the cancelation of the student's exam or assignment. If it takes place in a final exam, the penalties stipulated for in the Uniform Students' Bylaw (2007) shall apply.</p>
6	<p><b>Forgery and Impersonation:</b> Forgery/Impersonation is an act of fraud that results in the cancelation of the student's exam, assignment or project. If it takes place in a final exam, the penalties stipulated for in the Uniform Students' Bylaw (2007) shall apply.</p>
7	<p><b>Other policies:</b> The University official regulations in force will be strictly observed and students shall comply with all rules and regulations of the examination set by the Department, Faculty and University Administration.</p>

