



Department of Science of Dental Materials

MISSION OF DEPARTMENT OF DENTAL MATERIALS

Mission

Our mission is to incorporate effective teaching and learning methodologies that equips students with fully integrated knowledge of latest Dental Materials being used in the field of dentistry so that they are able to:

- Identify and select confidently the most appropriate materials used in dentistry
- Describe the composition, properties and application of dental materials in fields of dentistry
- Manipulate, handle and apply the materials properly in dentistry.

Introduction

Dentistry over the years has evolved into a highly complex field and materials play a crucial role in every aspect of treatment. Dental treatment not only includes the practice of medicine and surgery but also restoration and replacement of missing structures of oral cavity.

Science of dental materials teaches you the most up-to-date information on materials used in the dental office and laboratory today. Emphasizing practical, clinical use, as well as the physical, chemical, and biological properties of materials, this leading reference helps you stay current in this very important area of dentistry

Traditionally the subject of dental materials primarily includes material used in restorative dentistry including related auxiliary material. Currently, there is a trend to be more inclusive and include materials from specialties, which have traditionally been excluded like the endodontics and surgical specialties.

Learning Outcomes of Course of Dental Materials

After completing the course of Dental Materials, the student of 2nd Year BDS will be able to:

- Identify & Select Confidently the most appropriate materials used in dentistry
- Gain knowledge about the composition, properties and various uses in fields of dentistry
- Manipulate, handle and apply the materials properly in dentistry.

Teaching and learning methodologies

Teaching and learning methods are primarily focused more on promoting active learning through active participation of the learner. Actively learning students take charge of their own learning, actively seeking guidance and performance feedback from tutors, and routinely conducting self-assessment of their own learning needs.

Teaching and learning modalities

- Large Group Interactive Sessions (LGIS)
- Small Group Interactive Sessions (SGIS)
- Self-Directed Learning (SDL)
- PBL
- Flip Class
- Seminars

Following teaching modalities may be used for small group teaching:

1. Video demonstrations
2. Students' presentations
3. Discussions
4. Peer learning
5. Projects/ Assignments
6. Role play

Name	Science Of Dental Materials
Duration	325 Hrs
No of LGIS	120hrs
No of tutorials	45 hrs
No of Practical	160hrs

Total number of Hours: 325 Recommended

Reference Material

Text Books

- Applied dental materials, 9th edition, John F. McCabe and Angus W.G. Walls.
- Craig's Restorative Dental Materials, 14th edition, Ronald Sakaguchi, Jack Ferracane, John Powers.
- Phillip's Science of Dental Materials, 13th Edition, Anusavice, Chiayaishen and H. Ralph Rawls.
- Craig's Restorative Dental Materials, 15th Edition, Carmem S. Pfeifer, Jack Ferracane, and Ronald L. Sakaguchi,

Journals

- Dental Materials
- Dental Materials Journals

FACULTY OF DEPARTMENT OF DENTAL MATERIALS

**Dr. Shahreen Zahid (BDS, M Phil, CHPE) Professor
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Dr. Abdul Qadir (BDS, MSc (DMS), CHPE Assistant Professor

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Demonstrator**

COURSE OUTLINE

S.No.	Course content	LEARNING OBJECTIVES	TEACHING STRATEGY	ASSESSMENT TOOLS
1.	Overview of Dental Materials & their properties	<p>By the end of the session, students of 2nd year BDS will be able to:</p> <ul style="list-style-type: none"> Define all the terms and their definition. Describe the basic properties of all dental materials. Identify the dental applications of all dental materials. 	LGIS SDL	MCQs SEQs Quiz Structured Tutorials
2.	Impression Materials Elastic & Non Elastic Materials	<ul style="list-style-type: none"> Classify Impression Materials. Describe the Composition, uses and properties of these materials. Identify different types of impression trays, impression materials and impression techniques for patients. Demonstrate the manipulation of the impression materials effectively 	LGIS SGIS SDL Simulation Lab Demonstration Video demonstrations	MCQs SEQs Quiz Structured Tutorials OSCEs Formative assessments
3.	Gypsum Products and Investment Materials	<ul style="list-style-type: none"> Describe the classification types, composition, properties & uses. Differentiate the types of investment materials and Gypsum Products. Practice the Clinical implication of these materials. Practice the selection and manipulation of appropriate material. 	LGIS SGIS SDL Lab Demonstration	MCQs SEQs Structured Tutorials OSCEs
4.	Metallurgy and Ceramics <ul style="list-style-type: none"> Base and Nobel Metal Alloys Wrought & Stainless Steel Dental Porcelain Casting Soldering & welding 	<ul style="list-style-type: none"> Classify types, composition, properties & uses of metals and alloys used in dentistry Define types, composition, uses and properties of ceramics Describe all ceramic crown, PFMs, veneers, bridges Describe Casting Procedure and faults of casting Identify types of soldering and welding, Materials used. 	LGIS SGIS SDL Lab Demonstration	MCQs SEQs Structured Tutorials OSCEs
5.	Polymers <ul style="list-style-type: none"> Acrylic Resins 	<ul style="list-style-type: none"> Describe the process of polymerization and its steps 	LGIS SGIS	MCQs SEQs

		<ul style="list-style-type: none"> Classify the types, uses and properties of denture based resins Types, composition and uses of Denture lining materials Demonstrate the manipulation of the acrylic resin and identify its stages 	<p>SDL</p> <p>Lab Demonstration</p>	<p>Structured Tutorials</p> <p>OSCEs</p>
6.	<p>Restorative Materials</p> <ul style="list-style-type: none"> Direct Restorative Materials (Composite & Amalgam) GIC 	<ul style="list-style-type: none"> Describe the classification, composition, uses and properties of all restorative materials Explain its advantages and disadvantages Select according to use & class of cavity Demonstrate the manipulation of all restorative materials 	<p>LGIS</p> <p>SGIS</p> <p>SDL</p> <p>Simulation</p> <p>Lab Demonstration</p>	<p>MCQs</p> <p>SEQs</p> <p>Quiz</p> <p>Structured Tutorials</p> <p>OSCEs</p>
7.	Dental Cements	<ul style="list-style-type: none"> Describe the classification, composition, uses and properties of all dental cements Explain its advantages and disadvantages Select the cement according to use. Demonstrate the manipulation of dental cements 	<p>LGIS</p> <p>SGIS</p> <p>SDL</p> <p>Lab Demonstration</p>	<p>MCQs</p> <p>SEQs</p> <p>Quiz</p> <p>Structured Tutorials</p> <p>OSCEs</p>
8.	<p>Miscellaneous</p> <ul style="list-style-type: none"> Waxes Finishing & Polishing Materials Dental Implant Materials Endodontic Materials 	<ul style="list-style-type: none"> Describe the classification, composition, uses and properties of dental waxes identify advantages and disadvantages of different waxes used in dentistry Select the waxes according to use. Manipulate dental waxes Identify the types and materials used for implants Discuss properties and indications of different implant materials Describe the classification, composition, uses and properties of all endodontic materials Explain its advantages and disadvantages of different endodontic materials Demonstrate the manipulation of all endodontic materials 	<p>LGIS</p> <p>SGIS</p> <p>SDL</p> <p>Simulation</p> <p>Lab Demonstration</p>	<p>MCQs</p> <p>SEQs</p> <p>Structured Tutorials</p> <p>OSCEs</p>

THEORY MARKS DISTRIBUTION:

Total Marks of MCQs = 40 Marks

Total Marks of SEQs = 50 Marks (Each SEQ of 5 Marks)

Internal Assessment: 10Marks

Total Marks of Theory: 100 marks

PRACTICE MARKS DISTRIBUTION:

Total Marks of OSPE = 40 Marks

Total Marks of Viva = 50 Marks (25 Marks Internal Examiner, 25 Marks External Examiner)

Internal Assessment: 10 Marks

Total Marks of viva: 100 marks

