

SYLLABUS / COURSE DETAILS FOR:

SCIENCE OF DENTAL MATERIALS:

Introduction:

The subject of dental materials' science deals with the properties, composition, development and manipulation of materials used in the provision of dental treatments. It explores the origin, nature, chemistry, effects, and uses of all materials used in the processing, fabrication and provision of dental restorations and also includes aspects of toxicity and safety of these materials for staff and patients.

Learning Resources:

Textbooks

- Applied Dental Materials by John F. McCabe & W.J. Walls 8th edition, 1998.
- Dental materials and their selection, by William J.O' Brien. Third edition. Publisher Quintessence, 2002.
- Introduction to Dental Materials, by Richard Van Noort. 2nd or 3rd edition, Mosby
- Restorative Dental Materials, by R.G. Craig, Publisher Mosby 12th edition, 2006.
- Phillip's Science of Dental Materials. Edited by K.J. Anusavice, Publisher Saunders, 11th edition, 2003.
- Materials Science for Dentistry, by B W Darvell, 7th edition 2002.

Internet resource

- eJournals and eLibrary's utilizations to explore internet resources
- Journal of Dentistry
- Dental Materials (Journal)
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<i>Course description / Objective</i>	<i>Suggested Lecture Hours</i>
Introduction to Dental Materials <u>Properties of materials</u> 1. Physical properties of materials:- <ul style="list-style-type: none">• Characterization solid surfaces• Adsorption, absorption, and sorption.• Surface tension, wetting, capillary rise.• Forces involved in denture retention 2. Thermal, Electrical and other related properties of dental materials 3. Mechanical properties i.e. stress, strain, stress/strain relationship and other related properties.	4
Impression materials.	4
Gypsum products and investment materials.	3
Dental Waxes and other related thermoplastic	3

materials like Shellac Base Plate Wax.	
Separating media used in dentistry	1
<u>Polymers and their application in Prosthetics:-</u> Requirements of denture base materials. <ul style="list-style-type: none"> • Properties of Acrylic Resin as a denture base materials, their composition, manipulation and processing. • Alternative denture base materials. • Artificial teeth. • Types of Acrylic Resin polymerization i.e. heat cured Acrylic denture plastics, chemically accelerated plastics, fluid resin acrylic denture plastics, light cured denture plastics, repair, relining and rebasing materials • Tissue conditioning materials and soft liner. 	7
Adhesion i.e. Principal of bond strength, Enamel and Dentine bonding agents and bonding system.	
<u>Dental Cements</u> <ul style="list-style-type: none"> • Zinc Phosphate Cement. • Zinc Oxide/Eugenol, • Modified Zinc Oxide/Eugenol, • Ethoxy Benzoic Acid Cement, • Zinc Polycarboxylate , • Silico Phosphate Cement. • Glass Ionomer Cement and modifications 	3
<u>Composite Restorative Materials</u> Introduction of resin system, Bonding mechanism, Types of various composites, Properties of composites, All purpose composite i.e. composition, setting reaction, manipulation, acid-etch techniques, classification of composites and composite for special applications.	4
<u>Amalgam as a filling material</u> <ul style="list-style-type: none"> • Dental amalgam alloys • Amalgamation process • Properties of amalgam 	3
<u>Metals and metallurgy:</u> <ul style="list-style-type: none"> • Extraction of metals from their ores and their purification. • Micro leakage, creep, galvanism, cold working/strain hardening, Annealing 	4

<ul style="list-style-type: none"> • Methods of joining the metals i.e. welding and soldering. • Tarnish and corrosion and their types. • Alloys and its types. • Dental casting gold alloys its composition, properties uses. • Base metal casting alloys, their composition, properties and comparison with casting gold alloys. • Wrought alloys, i.e. steel and stainless steel. • Porcelain and bonded porcelain as a dental ceramic, classification of dental porcelain, composition, properties, manufacturing and firing and their uses. • Maxillofacial materials used in dentistry. • Abrasion and polishing materials 	
<u>Miscellaneous Topics</u> Dental implants, finishing and polishing materials, endodontic materials, preventive materials, introduction to advanced biomaterials, tissue engineering	4

SYLLABUS / COURSE DETAILS FOR:

BEHAVIORAL SCIENCE:

Introduction:

This involves any of the various interrelated disciplines, such as psychiatry, psychology, sociology, and anthropology, that observe and study human activity, including psychologic and emotional development, interpersonal relationships, values, and mores.

Course Description & Objectives:	Lecture Hours
Introduction to behavioral sciences and its importance in health: Bio-Psycho-Social Model of Health Care and the Systems Approach Normality vs. Abnormality Link of Health with Behavioral Sciences (Psychology, Sociology, Anthropology) Importance of behavioral sciences in health Correlation of brain, mind and Behavioral Sciences Roles of a doctor Desirable Attitudes in Health Professionals	2
Understanding, Behavior, Sensation and	8