**LECTURE OUTLINE:**

**1.**      **Introduction to the course. Alginate impression and diagnostic casts.**

****        **Definition of an impression**

****        **Types of impression materials**

****        **Setting reaction of alginate impression material**

****        **Types of alginate impression materials (regular-and fast-setting material) and their properties (working, mixing time and setting)**

****        **Definition of a diagnostic cast**

****        **Types of materials used for pouring a diagnostic cast**

****        **Setting reaction**

***Reference: Restorative Dental Materials by Robert G. Craig. C.V. Mosby; 11th***

***edition (July 26, 2001)***

**2.**      **Introduction to Fixed Prosthodontics. (pp. 1- 9)**

****        **Definition of Fixed Prosthodontics**

****        **Terminology and concepts**

****        **Classification of Fixed Partial Dentures**

****        **Components of Fixed Partial Denture**

***Additional Reference: Glossary of Prosthodontic Terms- GPT#8***

**3.**      **Fundamentals of Occlusion & Articulators. ( pp. 11-33 & 54-55)**

****        **Centric relation**

****        **Mandibular movements**

****        **Determinants of mandibular movements**

****        **Effects of anatomical determinant**

****        **Definition & Importance of anterior guidance**

****        **Interrelation with vertical and horizontal overlap of anterior teeth**

****        **Influence on posterior tooth morphology**

****        **Steps in the fabrication of custom anterior guide table**

****        **Arcon vs non-arcon (eg. Whipmix & Hanau)**

****        **Facebow**

**o**       **Arbitrary**

**o**       **Kinematic**

****        **Registration of condylar movement**

**4.**     **Treatment planning for the replacement of missing teeth. (pp. 85-102)**

****        **Options of treatment including dental implants**

****        **Selection of type of prosthesis**

**-**         **Abutment evaluation**

**-**         **Crown root ratio/ Root configuration**

**-**         **Periodontal ligament area**

****        **Biomechanical considerations**

****        **Special Problems and management**

**-**         **Pier abutments**

**-**         **Treated molar abutments**

**-**         **Canine replacement FPD**

**-**         **Cantilever FPD**

**5.**      **Principles of tooth preparation. (pp.119-133)**

****        **Preservation of tooth structure**

****        **Retention and resistance (taper, freedom of displacement, length, substitution of internal features and path of insertion).**

****        **Structural durability (occlusal reduction, functional cusp bevel & axial reduction).**

****        **Marginal integrity (finish line configuration)**

****        **Preservation of the periodontium**

**Preparations for full veneer crowns.**

****        **Indications**

****        **Advantages/disadvantages**

****        **Tooth preparation procedure**

**6.**      **Retention and resistance and its theoretical and practical attainment. (pp. 119-125)**

****        **Taper and length**

****        **Freedom of displacement**

****        **Substitution of internal features**

****        **Path of insertion**

**7.**      **Metal ceramic crown preparation. (pp. 142-151)**

****        **Definition of metal ceramic crown**

****        **Advantages**

****        **Indication and contraindication**

****         **Steps in the preparation of anterior and posterior metal ceramic crown**

****         **Types of facial finish margin used in metal ceramic crown preparation**

**8.**      **Introduction to ceramics and metal ceramic restorations. (pp.455-456)**

****        **History of metal ceramic restorations**

****        **Composition of porcelain**

****        **Different layers of porcelain**

****        **Bonding mechanisms of ceramic to alloy**

**9.**      **All ceramic crowns. (pp. 151-153)**

****        **Introduction to all ceramic**

****        **crowns**

****        **Advantages and disadvantages**

****        **Different types of all-ceramic crowns**

****        **Indications and contra-indications**

****        **Steps in the preparation of all ceramic crown**

**10.**  **Impressions. (pp. 281-304)**

****        **Definition**

****        **Ideal requirements of a good impression**

****        **Comparison of impression materials**

****        **Advantages and disadvantages of the commonly used impression materials in fixed prosthodontics**

****        **Custom tray fabrication**

****        **Procedure for impression making (different techniques i.e. custom tray and putty wash impression techniques)**

****        **Disinfection of impressions**

**11.** **Fabrication of a working cast and dies. (pp.309-333)**

****        **Requirements for a good cast**

****        **Definition of a working cast and a die**

****        **Basic working cast and die systems**

**(1)**   **Working cast with a separate die:**

**-**         **Advantages/disadvantages**

**-**         **Techniques (procedure)**

**(2)**   **Working cast with a removable die:**

**-**         **Advantages/disadvantages**

**-**         **Requirements**

**-**         **Different systems and techniques (procedures)**

**(3)**   **Preparation of a die:**

**-**         **Die-trimming  procedure**

**-**         **Die-spacer application**

**12.** **Waxing patterns. (pp. 335-353)**

****        **Direct technique/indirect technique**

****        **Wax pattern fabrication**

**i.**     **coping**

**ii.**   **axial contour and emergence profile**

**iii.** **occlusal morphology**

**a.**   **cusp to marginal arrangement**

**b.**   **cusp to fossa arrangement**

**iv.** **Marginal finishing**

**13. Wax-up procedure, cut-back and framework design for metal ceramic restoration. (pp. 457-468 & 502-506)**

****     **Significance of wax-up to full**

****     **contours followed by cut-back**

****     **Coping design for single restoration and FPD**

****        **All wax technique**

****        **Plastic shell technique**

**14.** **Investing and Casting. (pp.365-382)**

****      **Requirements of an investment**

****      **material**

****        **Gypsum bonded investment**

****        **Phosphate bonded investment**

****        **Shrinkage compensation**

****      **Sprue former attachment (diameter, length & location)**

****        **Investing procedure**

****        **Cleaning of casting**

****        **Common casting defects and their causes**

**15.** **Preparation for porcelain Laminate veneers. (pp. 441-445)**

****        **Introduction to all types of partial veneer crown preparation**

****        **Indications/Contraindications**

****        **Advantages/Disadvantages**

****        **Materials and equipments**

****        **Tooth preparation procedure**

****        **Fabrication of provisional restoration**

**16. Preparation of metal coping for porcelain application. (pp. 468-470)**

****           **Rationale of preparation**

****           **Alloy surface treatment**

****           **Heat treatment**

****           **Steps of preparation**

**17.** **Porcelain application, staining, glazing and polishing of metal ceramic restoration. (pp.471- 481)**

****     **Procedure of porcelain application**

**a)**           **Opaque porcelain application**

**b)**           **All-porcelain margin fabrication**

**c)**            **Dentin and enamel porcelain application**

****        **Characterization of staining (external stains)**

****        **Porcelain surface treatment**

**a)**     **Natural glaze or autoglaze**

**b)**     **Applied overglaze**

**c)**      **Polishing**

**18. Alloys used in fabricating metal ceramic restoration. (pp. 456-457).**

****     **Chemistry of metal ceramic alloy**

****     **Terminology and classification**

****     **Requirements of alloys for porcelain bonding**

****     **Bonding mechanism**

****     **Chemistry of bonding**

****     **Porcelain metal bond failure**

***Additional Reference:  (pp. 225-236) Dental Materials & their Selection by William O'Brien. Quintessence Publishing (IL); 3rd edition (June 2002)***

**19.** **Fitting, finishing and delivery of cast restorations. (pp.385-400)**

****        **Significance of finishing and polishing cast restorations**

****        **Armamentarium: Different abrasives and polishing**

****        **Procedure of preliminary finishing of metal restorations in sequence (Try-in)**

**i.**        **Proximal contacts**

**ii.**      **Margins (completeness of seating)**

**iii.**    **Occlusion**

**iv.**    **Contours**

**v.**      **Esthetics**

****       **List the different types of cements used for final cementation of cast restoration.**

****       **Pre-cementation polishing of gold**

****       **restorations**

****       **Post-cementation finishing of gold restorations**

**20.** **Direct provisional restorations. (pp. 247-255)**

****     **Indication**

****     **Types of pre-fabricated direct restoration for anterior and posterior teeth**

****     **Techniques of using pre-fabricated provisional restoration for anterior and posterior teeth**

****     **Fabrication of direct provisional restoration for an endodontically treated tooth**

**21.** **Provisional restorations. (pp.225-238)**

****        **Definition**

****        **Ideal requirements of a good provisional restorations**

****        **Types of provisional restorations prefabricated*vs.*custom restorations**

****        **Direct/Indirect/Combination techniques**

**-**         **Advantages**

**-**         **Disadvantages**

****        **Resins for provisional restorations**

****        **Techniques for fabricating custom made provisional  restorations (FPD)**

****        **Cementation**

**22.** **Pontic Design. (pp. 485-506)**

****        **Definition**

****        **Different pontic designs**

****        **Pontic modification**

****        **Pontic fabrication**

**(a)**   **An all metal mandibular posterior FPD with a hygienic/conical pontic**

**(b)**   **A metal-ceramic maxillary posterior FPD with a modified ridge lap pontic**

****        **Post-insertion hygiene**

**23.** **Resin bonded fixed partial dentures. (pp. 537- 561)**

****        **Definition of Resin bonded fixed partial dentures**

****        **Advantages and disadvantages**

****        **Indication and contraindication**

****        **Steps in the preparation of Resin bonded fixed partial dentures**

**24.** **Solder joints and other connectors. (pp. 509-530)**

****           **Definition**

****           **Ideal requirements of dental solder**

****           **Uses of dental solder**

****           **Procedure of:**

**-**         **Soldering a fixed partial denture**

**-**         **Adding proximal contacts**

**-**         **Soldering metal ceramic alloys**

**i.**        **Pre-veneer metal ceramic alloy soldering**

**ii.**      **Post-veneer metal ceramic alloy soldering**

**25.** **Restoration of endodontically treated teeth. Part I. (pp. 194-201)**

****       **Rationale of restoring endodontically treated tooth**

****       **Pre-fabricated dowel with amalgam and resin core**

****       **Esthetic posts**

****       **Fiber post with composite build up**

**26.**  **Restoration of endodontically treated teeth. Part II. (pp. 202-206)**

****         **Parapost system - different**

****         **components and its uses**

****         **Custom cast dowel cores**

****         **(direct/indirect)**

****         **Procedure for preparation of custom dowel core**

**i.**        **Canal preparation**

**ii.**      **Resin pattern fabrication**

**iii.**    **Finishing and cementation of the custom dowel core**

**27.** **Preparation of extensively damaged vital teeth. (pp. 181-193)**

****        **Principles of substitution**

**-**         **Box forms**

**-**         **Grooves**

**-**         **Pins**

****        **Bases and cores**

****        **Modifications for damaged vital teeth**

****        **Orthodontic adjuncts to restoring damaged teeth**

**-**         **Regaining interproximal space**

**-**         **Extrusion of teeth**