

# **American College of Prosthodontics Digital Curriculum Development Framework-Content**

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## **Introduction**

The primary intent of this document is to provide dental schools with the information they need to develop curriculum on Digital Dentistry. The document provides a comprehensive list of topic and gives the opportunity to dental schools to pick and choose what elements they think is necessary for their particular school and to organize the overall curriculum to incorporate objectives, metrics, and knowledge base.

The secondary intent of this outline is to provide guidance to individuals as to what type of document they could provide *American College of Prosthodontics* to share on *Prosthopedia*. Documents may be shared in the following formats: handouts, reading lists, powerpoints, and videos.

## **Summary of the framework-content**

- Foundational Knowledge of Digital Dentistry
- Educational and Self-Assessment tools
- Applying Science in Digital Dentistry
- Step-by-Step of Computer Aided Design/Computer Aided Manufacturing
- Step-by-Step Protocol for Implant Planning

## Framework-Content

### Foundational Knowledge of Digital Dentistry

- History of Digital Dentistry
- Fundamentals of digital dentistry
- Terminology (Glossary)
- Imaging (Photography, Radiology, Surface)
- Science behind scanning
  - Chairside*
  - Laboratory*
  - Facial*
- Science behind production
  - Milling*
  - 3D Printing*
- Over view on digital systems
  - Workflows*
  - Modern digital lab and office*
- Basics of 3D Radiology
- Electronic Health Record
- Assessment and diagnosis of CBCT and digital radiograph
- Merging datasets – DICOM, stl, etc

### Educational and Self-Assessment tools

- Scanning and Comparing
- Dental Anatomy (Digital assessment of wax-up)
- Tooth Preparations (Digital assessment of tooth preparation)
- Virtual Occlusion (learning tool)
- Removable Partial Design (learning tool)
- Complete denture tooth set up (learning tool)

### Applying Science in Digital Dentistry

- Fundamentals of tooth preparation
  - Full coverage restoration*
  - Partial coverage restoration*
- Materials used for production
  - Metal alloy*
  - Ceramic*
  - Composite Resin*

*PMMA*

*Wax pattern*

-Luting Agent

### **Digital Impression**

-Chairside Digital Impression

*Tissue management*

*Technique*

Abutment tooth

Implant

*Errors*

*Maintenance*

-Lab side surface imaging

*Abutment tooth*

*Implant*

*Full arch edentulous*

*Partial Denture*

*Maintenance*

### **Computer aided Design**

-Single tooth

*Full coverage*

*Partial Coverage*

-Partial Fixed Dental Prosthesis

-Model Builder

-Complete Denture

-Partial Denture

-Surgical guide

-Occlusal Device

-Implant Restoration

*Abutment- Restoration (cement retained)*

*Screw Retained single crown*

*Partial Fixed Dental Prosthesis*

*Fixed full arch*

*Bar*

### **Computer aided manufacturing**

-Milling units

*3, 4 and 5 axes milling units*

*Dry and wet milling units*

*Burs for production*

*Maintenance*

*Production*

Study model

Single restoration

Partial Fixed Dental Prosthesis

Complete Denture

Partial Denture

Implant Restoration

Abutment- Restoration (cement retained)

Screw Retained single crown

Partial Fixed Dental Prosthesis

Fixed full arch

Bar

-3D printing

*Production*

Study model

Master (definitive) model

Tooth born

Implant

Partial Denture Framework

Single crown

Occlusal Device

Surgical guide

Others

*Maintenance*

**Processing protocols**

-Processing machines

*Zirconia*

*Metal alloy*

*Ceramic*

-Stain and Glaze Protocol

*Zirconia*

*Ceramic*

*Composite Resin*

**Single Unit Full Coverage- Anterior and Posterior**

-Current workflows

-Procedure from start to insertion

-Laboratory communication

**Fixed Partial Dental Prosthesis**

-Current workflows

-Procedure from start to insertion

-Laboratory communication

### **Complex fixed restorations**

- Current workflows
- Procedure from start to insertion
- Laboratory communication

### **Implant supported single restorations**

- Current workflows
- Radiographic/CBCT analysis and Interpretation
  - Prosthetic guided planning and placement*
  - Surgical guide fabrication and utilization*
- Procedure from start to insertion
- Insertion and maintenance
- Laboratory communication

### **Implant supported removable and fixed –Full arch**

- Current workflows
- Diagnosis and treatment planning
- Radiographic/CBCT analysis and Interpretation
  - Prosthetic guided planning and placement*
  - Surgical guide fabrication and utilization*
- Procedure from start to insertion
- Insertion and maintenance
- Laboratory communication

### **Removable Dental Prosthesis**

- Current workflows
- Procedure from start to insertion
- Laboratory communication

### **Complete Dentures**

- Current workflows
- Procedure from start to insertion
- Laboratory communication

### **Digital Smile Analysis**

- Current workflows
- Procedure from start to insertion
- Laboratory communication