



# **INSTRUCTIONAL PACKAGE**

DAT 113  
Dental Materials

202110  
Fall 2021

# INSTRUCTIONAL PACKAGE

## Part I: Course Information

Effective Term: 202110

COURSE PREFIX: DAT113

COURSE TITLE: Dental Materials

CONTACT HOURS: 6

CREDIT HOURS: 4

### **RATIONALE FOR THE COURSE:**

1. Explain the importance of the study of dental materials for the allied oral health practitioner.
2. Explain why it is necessary that the allied oral health practitioner have an understanding of dental materials for the delivery of dental care.
3. Describe and demonstrate the safety measures that are needed to work with various dental materials and lab equipment.
4. Describe the utilization, composition, properties, care and storage, and hazard communication of selected dental materials

### **COURSE DESCRIPTION:**

This course is a study of physical and chemical properties of matter and identification, characteristics, and manipulation of dental materials.

### **PREREQUISITES/CO-REQUISITES:**

#### **PREREQUISITES:**

Admittance into the Expanded Duty Dental Assisting Program

#### **CO-REQUISITES:**

DAT 118 Dental Morphology

DAT 127 Dental Radiography

DAT 154 Clinical Procedures

DAT 174 Office Rotations

### **REQUIRED MATERIALS:**

Please visit the [BOOKSTORE](#) online site for most current textbook information. Use the direct link below to find textbooks.

Enter the semester, course prefix, number and section when prompted and you will be linked to the correct textbook.

### **TECHNICAL REQUIREMENTS:**

Access to Desire2Learn (D2L), HGTC's student portal for course materials.

2021-2022

MyHGTC and college email access.

### **STUDENT IDENTIFICATION VERIFICATION:**

Students enrolled in online courses will be required to participate in a minimum of one (1) proctored assignment and/or one (1) virtual event to support student identification verification. Please refer to your Instructor Information Sheet for information regarding this requirement.

### **CLASSROOM ETIQUETTE:**

As a matter of courtesy to other students and your professor, please turn off cell phones and other communication/entertainment devices before class begins. If you are monitoring for an emergency, please notify your professor prior to class and switch cell phone ringers to vibrate.

\*Please refer to the HGTC Dental Sciences Program Manual for additional policies on classroom etiquette.

## **Part II: Student Learning Outcomes**

### **COURSE LEARNING OUTCOMES and ASSESSMENTS\*:**

1. Describe and demonstrate the safety measures that are needed to work with various dental materials and lab equipment.
2. Describe the utilization, composition, properties, care and storage, and hazard communication of selected dental materials.
3. Upon completion of this course, the student will be able to:
4. Explain the importance of the study of dental materials for the allied oral health practitioner.
5. Explain why it is necessary that the allied oral health practitioner have an understanding of dental materials for the delivery of dental care.
6. Describe and demonstrate the safety measures that are needed to work with various dental materials and lab equipment.
7. Describe the utilization, composition, properties, care and storage, and hazard communication of selected dental materials

***\*Students – please refer to the Instructor’s Course Information sheet for specific information on assessments and due dates.***

### **GENERAL EDUCATION OUTCOMES:**

#### **LECTURE OUTCOMES**

##### **Module 1**

**Material Covered:** Ch. 37 Dental Cements, Bases, Liners, and Bonding Agents

**Assessments:** Lab Competencies, Quiz, Unit Test, & Final Exam

##### **Objectives:**

1. Explain the importance of the study of dental materials for the allied oral health practitioner.
2. Explain etchants and their function

3. Discuss restorative dentistry and the various materials and techniques involved, including cavity detection and cavity cleaners, disinfectants, and desensitizers.
4. Describe the steps of cavity preparation
5. Describe the purpose of using cement bases. List the types of materials that can be used and explain the placement procedure.

### **Module 2**

**Material Covered:** Ch. 38 Restorative materials and Matrix, and Wedge

**Assessments:** Lab Competencies, Quiz, Unit Test, & Final Exam

#### **Objectives:**

1. Explain the properties, composition, and manipulation of dental amalgam
2. Explain the properties and manipulation of various composite restorations.
3. Explain the use of glass ionomer, resin, resin-reinforced glass ionomer, and compomer restorative materials.
4. Define matrix, wedge and list the uses and types of matrices.
5. Describe the functions, parts, placement, and removal of the tofflemire matrix.
6. Discuss the functions and placement of the wedge.

### **Module 3**

**Material Covered:** Ch. 39 Laboratory Materials and Techniques

**Assessments:** Lab Competencies, Quiz, Unit Test, & Final Exam

#### **Objectives:**

1. Identify materials used in the dental laboratory and perform associated procedures.
2. Explain the process of debriding and disinfecting impressions, bite registrations, wax bites, and facebow registrations
3. Identify use of a dental articulator and facebow for dental casts or study models.
4. Identify various classifications and uses of waxes in dentistry.

### **Module 4**

**Material Covered:** Ch.30 Enamel Sealants

**Assessments:** Lab Competencies, Quiz, Unit Test, & Final Exam

#### **Objectives:**

1. Explain the purpose of using dental sealants and where they are placed.
2. List the indications and contraindications of placing sealants.
3. Discuss the role of the dental assistant in the placement of dental sealants.
4. Describe the types of sealant materials, including composite, glass ionomer, and filled and unfilled sealants.
5. List and describe the steps of the application procedure.

### **Module 5**

**Material Covered:** Ch. 24 Endodontics

**Assessments:** Lab Competencies, Quiz, Unit Test, & Final Exam

#### **Objectives:**

1. Define endodontics and describe what an endodontist does.
2. Identify the materials used in endodontics and their functions.
3. Describe endodontic procedures and the responsibilities of the dental assistant.

### **Module 6**

**Material Covered:** Ch. 26 Dental Implants

**Assessments:** Lab Competencies, Quiz, Unit Test, & Final Exam

**Objectives:**

1. Explain the considerations for dental implants, including patient preparedness.
2. List the indications and contraindications for dental implants.
3. List and describe the types of dental implants and explain the surgical procedures for placing the implants.
4. Discuss postoperative homecare and maintenance for the patient with dental implants.

**Module 7**

**Material Covered:** Ch. 33 Fixed prosthodontics and Gingival Retraction

**Assessments:** Lab Competencies, Quiz, Unit Test, & Final Exam

**Objectives:**

1. Describe the role of the dental assistant in all phases of fixed prosthodontic treatment.
2. Describe various types of fixed prosthesis and their functions.
3. Describe dental materials used in fixed prosthesis.
4. Identify the general steps for the procedure for fixed prosthesis.
5. Explain the steps for placing and removing the gingival retraction cord.

**Module 8**

**Material Covered:** Ch. 35 Cosmetic Dentistry and Teeth Whitening.

**Assessments:** Lab Competencies, Quiz, Unit Test, & Final Exam

**Objectives:**

1. Explain the role of the dental assistant in cosmetic dentistry.
2. Describe the types of restorations that are placed, and materials used for cosmetic restorations.
3. Explain how teeth are whitened, causes of intrinsic and extrinsic tooth staining.
4. Explain the benefits of whitening techniques used in dentistry.
5. List and describe types of whitening techniques.
6. Describe the procedures for dental office whitening for vital and non-vital teeth, and for home whitening and over the counter whitening materials.
7. Explain information given to the patient about outcomes, procedures, responsibilities, and precautions related to teeth whitening.

**Module 9**

**Material Covered:** Ch. 36 Removable Prosthodontics

**Assessments:** Lab Competencies, Quiz, Unit Test, & Final Exam

**Objectives:**

1. Explain the dental assistant's role in removable prosthetic treatment.
2. Outline the steps of the diagnostic appointment and list the materials needed.
3. List the homecare instructions for partial and complete dentures.
4. Explain the types and steps of reline procedures.
5. List the steps to polish a removable prosthetic appliance.

**LAB OBJECTIVES**

**Lab 1**

**Objectives:**

1. Explain initial and final set of gypsum and the factors that affect the setting time, setting expansion, and strength.
2. Explain the procedure for mixing and handling gypsum products to create diagnostic casts.
3. Prepare model plaster or stone for pouring.

4. Pour plaster in edentulous and dentulous molds free of defects

### **Lab 2**

#### **Objectives:**

1. Pour the anatomic portion of maxillary and mandibular diagnostic casts.
2. Pour the base portion of maxillary and mandibular diagnostic casts.
3. Trim maxillary and mandibular diagnostic casts.
4. Fabricate a study model

### **Lab 3**

#### **Objectives:**

1. Demonstrate tray selection, mixing alginate, loading and seating the tray, and removing the impression.
2. Demonstrate the ability to take an acceptable alginate impression.
3. Demonstrate the proper handling of alginate impressions.
4. Apply troubleshooting to problems experienced with alginate impressions.

### **Lab 4**

#### **Objectives:**

1. Make a registration of a patient's bite in centric occlusion
2. Assemble the cartridge of impression material and load into the impression tray.
3. Demonstrate proper disinfection techniques for impression materials and prepare them for transport to the dental laboratory.

### **Lab 5**

#### **Objectives:**

1. List the steps and the procedures for in-office professional whitening.
2. Fabricate home whitening trays.
3. Demonstrate proper enamel shade using a shade guide.
4. Demonstrate the ability to instruct a patient on home whitening.

### **Lab 6**

#### **Objectives:**

1. Apply the mixing technique for 4 types of cement:
  - Glass Ionomer
  - Polycarboxylate
  - Zinc Phosphate
  - Zinc Oxide/Eugenol & Base

### **Lab 7**

#### **Objectives:**

1. Apply topical fluoride gel, foam, or varnish correctly
2. List the components of sealant material.
3. Recite the steps for applying sealants.
4. Apply sealants to synthetic teeth.

### **Lab 8**

#### **Objectives:**

1. Describe the safety and infection control precautions taken by the operator when using abrasives.
2. Relate patient education instructions for prevention and removal of stain from tooth surfaces and restorations.
3. Finish and polish a preexisting amalgam restoration.

### **Lab 9**

**Objectives:**

1. Demonstrate how to clean a partial or complete dentures.
2. Demonstrate to a patient the home care regimen for both a partial or complete denture.

**Lab 10****Objective:**

1. Demonstrate the proper mixing and handling of dental acrylics.

**Lab 11****Objective:**

1. Demonstrate the fabrication of a custom acrylic impression tray.

***\*Students – please refer to the Instructor’s Course Information sheet for specific information on assessments and due dates.***

## Part III: Grading and Assessment

**EVALUATION OF REQUIRED COURSE MEASURES/ARTIFACTS\*:**

Students’ performance will be assessed and the weight associated with the various measures/artifacts are listed below.

**EVALUATION\***

Lecture	60% of the overall grade
Tests	40%
Quizzes	40%
Final Exam	20%
	100%
Lab	40% of the overall grade
Competencies	60%
Final Study Model	40%
	100%

***\*Students, for the specific number and type of evaluations, please refer to the Instructor’s Course Information Sheet.***

**GRADING SYSTEM:**

A=90-100

B=80-89

C=77-79

D=70-76

F=69 and below

The final grade is based upon your performance in the lecture and laboratory portions of the course. You will be required to pass BOTH the lecture and the laboratory portion of the course with a 77% or higher to be eligible to progress in the curriculum.

Grades earned in courses impact academic progression and financial aid status. Before withdrawing from a course, be sure to talk with your instructor and financial aid counselor about the implications of that course of action. Ds, Fs, Ws, WFs and Is also negatively impact academic progression and financial aid status.

The Add/Drop Period is the first 5 days of the semester for **full term** classes. Add/Drop periods are shorter for accelerated format courses. Please refer to the [academic calendar](#) for deadlines for add/drop. You must attend at least one meeting of all of your classes during that period. If you do not, you will be dropped from the course(s) and your Financial Aid will be reduced accordingly.

## Part IV: Attendance

Horry-Georgetown Technical College maintains a general attendance policy requiring students to be present for a minimum of 80 percent (80%) of their classes in order to receive credit for any course. Due to the varied nature of courses taught at the college, some faculty may require up to 90 percent (90%) attendance. Pursuant to 34 Code of Federal Regulations 228.22 - Return to Title IV Funds, once a student has missed over 20% of the course or has missed two (2) consecutive weeks, the faculty is obligated to withdraw the student and a student may not be permitted to reenroll. **Instructors define absentee limits for their class at the beginning of each term; please refer to the Instructor Course Information Sheet.**

**For online and hybrid courses**, check your Instructor's Course Information Sheet for any required on-site meeting times. Please note, instructors may require tests to be taken at approved testing sites, and if you use a testing center other than those provided by HGTC, the center may charge a fee for its services.

## Part V: Student Resources



### THE STUDENT SUCCESS AND TUTORING CENTER (SSTC):

The SSTC offers to all students the following **free** resources:

1. **Academic tutors** for most subject areas, **Writing Center support**, and **college success skills**.
2. Online **tutoring** and academic support resources.
3. Professional and interpersonal communication **coaching** in the EPIC Labs.

Visit the [Student Success & Tutoring Center](#) website for more information. To schedule tutoring, contact the SSTC at [ssc@hgtc.edu](mailto:ssc@hgtc.edu) or self-schedule in the Penji iOS/Android app or at [www.penjiapp.com](http://www.penjiapp.com). Email [ssc@hgtc.edu](mailto:ssc@hgtc.edu) or call SSTC Conway, 349-7872; SSTC Grand Strand, 477-2113; and SSTC



Georgetown, 520-1455, or go to the [Online Resource Center](#) to access on-demand resources.



## **STUDENT INFORMATION CENTER: TECH Central**

TECH Central offers to all students the following free resources:

1. **Getting around HGTC:** General information and guidance for enrollment, financial aid, registration, and payment plan support!
2. Use the [Online Resource Center \(ORC\)](#), including Office 365 support, password resets, and username information.
3. **In-person workshops, online tutorials and more services** are available in Desire2Learn, Student Portal, Degree Works, and Office 365.
4. **Chat with our staff on TECH Talk**, our live chat service. TECH Talk can be accessed on the student portal and on TECH Central's website, or by texting questions to (843) 375-8552.

Visit the [Tech Central](#) website for more information. Live Chat and Center locations are posted on the website. Or please call (843) 349 – TECH (8324), Option #2.

### ***Student Testing:***

Testing in an **online/hybrid** course may be accomplished in a variety of ways:

- *Test administered within D2L*
- *Test administered in writing on paper*
- *Test administered through Publisher Platforms*

*Further more tests may have time limits and/or require a proctor.*

*Proctoring can be accomplished either face-to-face at an approved site or online through our online proctoring service. To find out more about proctoring services, please visit the [Online Testing](#) section of the HGTC's Testing Center webpage.*

### **DISABILITY SERVICES:**

HGTC is committed to providing an accessible environment for students with disabilities. Inquiries may be directed to HGTC's [Accessibility and Disability Service webpage](#). The Accessibility and Disability staff will review documentation of the student's disability and, in a confidential setting with the student, develop an educational accommodation plan.

Note: It is the student's responsibility to self-identify as needing accommodations and to provide acceptable documentation. After a student has self-identified and submitted documentation of a disability, accommodations may be determined, accepted, and provided.

### **STATEMENT OF EQUAL OPPORTUNITY/NON-DISCRIMINATION STATEMENT:**

Horry-Georgetown Technical College prohibits discrimination and harassment, including sexual harassment and abuse, on the basis of race, color, sex, national or ethnic origin, age, religion, disability, marital or family status, veteran status, political ideas, sexual orientation, gender identity, or pregnancy, childbirth, or related medical conditions, including, but not limited to, lactation in educational programs and/or activities.

### **TITLE IX REQUIREMENTS:**

All students (as well as other persons) at Horry-Georgetown Technical College are protected by Title IX—regardless of their sex, sexual orientation, gender identity, part- or full-time status, disability, race, or national origin—in all aspects of educational programs and activities. Any student, or other member of the college community, who believes that he/she is or has been a victim of sexual harassment or sexual violence may file a report with the college’s Chief Student Services Officer, campus law enforcement, or with the college’s Title IX Coordinator, or designee.

\*Faculty and Staff are required to report incidents to the Title IX Coordinators when involving students. The only HGTC employees exempt from mandatory reporting are licensed mental health professionals (only as part of their job description such as counseling services).

### **INQUIRIES REGARDING THE NON-DISCRIMINATION/TITLE IX POLICIES:**

**Student and prospective student** inquiries concerning Section 504, Title II, and Title IX and their application to the College or any student decision may be directed to the Vice President for Student Affairs.

**Dr. Melissa Batten, VP Student Affairs**

*Title IX Coordinator*

Building 1100, Room 107A, Conway Campus

PO Box 261966, Conway, SC 29528-6066

843-349-5228

[Melissa.Batten@hgtc.edu](mailto:Melissa.Batten@hgtc.edu)

**Employee and applicant** inquiries concerning Section 504, Title II, and Title IX and their application to the College may be directed to the Vice President for Human Resources.

**Jacquelyne Snyder, VP Human Resources**

*EEO and Title IX Coordinator*

Building 200, Room 212A, Conway Campus

PO Box 261966, Conway, SC 29528-6066

843-349-5212

[Jacquelyne.Snyder@hgtc.edu](mailto:Jacquelyne.Snyder@hgtc.edu)