



COURSE OUTLINE

DIVISION: Workforce Development

COURSE: DLA 1209 Infection Control

Date: October 2018

Credit Hours: 1.5

Prerequisite(s): Admission into the Dental Assisting Program

Delivery Method: **Lecture** **1.5 Contact Hours (1 contact = 1 credit hour)**
 Seminar **0 Contact Hours (1 contact = 1 credit hour)**
 Lab **0 Contact Hours (2-3 contact = 1 credit hour)**
 Clinical **0 Contact Hours (3 contact = 1 credit hour)**
 Online
 Blended

Offered: **Fall** **Spring** **Summer**

CATALOG DESCRIPTION:

This course introduces the student to microbiology as it relates to infection control. Basic concepts, procedures and current regulatory mandates related to infection control and the management of hazardous materials will be presented. Current OSHA and CDC guidelines for compliance will be presented.

GENERAL EDUCATION GOALS ADDRESSED

[See last page for Course Competency/Assessment Methods Matrix.]

Upon completion of the course, the student will be able:

[Choose up to three goals that will be formally assessed in this course.]

- To apply analytical and problem solving skills to personal, social, and professional issues and situations.
- To communicate successfully, both orally and in writing, to a variety of audiences.
- To construct a critical awareness of and appreciate diversity.
- To understand and use technology effectively and to understand its impact on the individual and society.
- To develop interpersonal capacity.
- To recognize what it means to act ethically and responsibly as an individual and as a member of society.
- To recognize what it means to develop and maintain a healthy lifestyle in terms of mind, body, and spirit.
- To connect learning to life.

EXPECTED LEARNING OUTCOMES AND RELATED COMPETENCIES:

[Outcomes related to course specific goals. See last page for more information.]

Upon completion of the course, the student will be able to:

1. *Demonstrate a basic understanding of infection control rationale, recommendations, and regulations as stated in the OSHA Bloodborne Pathogen Standard.*
 - 1.1 Identify the modes of disease transmission in the dental practice and give an example of each.
 - 1.2 Identify the diseases of major concern to dental healthcare workers.
 - 1.3 Explain three goals of an infection control program.
 - 1.4 Describe the roles of the Occupational Safety and Health Administration, Centers for Disease Control and Prevention, and Environmental Protection Agency as they relate to the well-being of dental healthcare workers.
 - 1.5 Describe the responsibilities of the employer under the OSHA Bloodborne Pathogen Standard.
 - 1.6 Explain how employees are categorized according to the OSHA Bloodborne Pathogen Standard.

2. *Demonstrate a basic understanding of the requirements, uses, and methods of donning personal protective equipment.*
 - 2.1 Discuss the term “chain of asepsis” and the importance of using universal precautions beginning with the steps and performance of a proper handwashing technique.
 - 2.2 Explain the requirements for protective clothing, masks, eyewear, and glasses.
 - 2.3 Identify the recommended types of personal protective equipment and describe the guidelines for the use of each type.

- 2.4 Describe the method for donning and removing personal protective equipment.
- 2.5 Describe the types and causes of latex allergies, and explain the methods of latex avoidance.
3. *Demonstrate a basic understanding of surface and equipment asepsis.*
 - 3.1 State the reasons for using surface covers as a means of infection control.
 - 3.2 State the types and give examples of specific uses of surface covers.
 - 3.3 Explain the process of cleaning and disinfecting a treatment room for patient care.
 - 3.4 Discuss the types and characteristics of acceptable disinfecting solutions used for surface disinfection.
 - 3.5 Explain proper storage and aseptic retrieval of dental supplies and instruments during dental procedures.
 - 3.6 Describe three methods of reducing dental unit waterline contamination.
4. *Demonstrate a basic understanding of the procedures that prepare contaminated instruments for reuse.*
 - 4.1 Differentiate between sterilization and disinfection, and give indications for each.
 - 4.2 Identify the three categories of dental instruments according to the Center for Disease Control and Prevention guidelines, give examples of each, and explain the appropriate method(s) of sterilization and/or disinfection of each.
 - 4.3 Describe the process of precleaning contaminated instruments.
 - 4.4 Describe the process of preparing and packaging instruments for sterilization in an autoclave, chemiclave or dry heat sterilization.
 - 4.5 Explain sterilization procedures using dry heat, chemical vapors, and steam heat.
 - 4.6 Differentiate between biological, chemical, and physical methods of monitoring sterilization and give indications and uses for each.
 - 4.7 Explain the components and state three goals of a well-designed instrument processing area.
 - 4.8 Explain the indications and limitations for the use of a chemical sterilant.
 - 4.9 Discuss recommended dental handpiece asepsis procedures and guidelines.
5. *Demonstrate a basic understanding of laboratory and radiographic aseptic procedures.*
 - 5.1 Discuss disinfection procedures for dental impressions, bite registrations, and contaminated appliances that are to be sent to the dental laboratory.
 - 5.2 Discuss the disinfection procedures for appliances being returned to the patient from the dental laboratory.
 - 5.3 Describe the disinfection/sterilization procedures necessary to keep laboratory equipment free of microorganisms.
 - 5.4 Describe infection control procedures required when exposing and processing radiographs.

6. *Demonstrate a basic understanding of regulations and procedures for dental office waste management.*
 - 6.1 Describe the types of dental office wastes and the management of each.
 - 6.2 Discuss methods for clean-up and disposal of wastes, including the handling of sharps and disposal of hazardous materials.
 - 6.3 Describe the record keeping procedures necessary if wastes are disposed of by an approved waste hauler.

7. Demonstrate a basic understanding of office safety procedures as outlined in the OSHA Hazard Communication Standard.
 - 7.1 Discuss the management duties of the office safety coordinator.
 - 7.2 Describe the responsibilities of the employer under the OSHA Hazard Communication Standard.
 - 7.3 Identify five job-related health and safety hazards for employees in dental offices and explain the methods of prevention of each.
 - 7.4 Describe the management of an exposure incident in accordance with OSHA regulations.
 - 7.5 Describe the information found in each of the nine sections of a Material Safety Data Sheet.
 - 7.6 Locate essential information on a MSDS and create an appropriate warning label.
 - 7.7 State precautions and measures to be used for fire control, emergency escape routes, and first-aid in the dental office.

8. *Demonstrate a basic understanding of microbiology and the disease process*
 - 8.1 Discuss the role of microorganisms in infection control
 - 8.2 Identify the morphologic, structural, and growth characteristics of bacteria, viruses, fungi, and protozoans.
 - 8.3 Identify the stages of an infectious disease.
 - 8.4 Explain why the study of microbiology is important for the dental assistant.
 - 8.5 Name the three factors that influence the ability of a pathogen to cause disease.
 - 8.6 Identify the factors that influence a patient's resistance to infection.
 - 8.7 Identify the host's reaction/interaction with pathogenic organisms.
 - 8.8 Discuss the microbiology of caries and periodontal disease.

9. *Demonstrate a basic understanding of bloodborne pathogens and the risk they pose for dental healthcare workers.*
 - 9.1 Name the bloodborne infections that are of major concern to dental healthcare workers and describe the methods to prevent transmission in the dental setting.
 - 9.2 List the symptoms of bloodborne infections including oral manifestations.

10. *Demonstrate a basic understanding of immunity and recommended immunizations for dental healthcare workers.*
 - 10.1 Differentiate between active and passive immunity.
 - 10.2 Compare natural and artificial immunity.
 - 10.3 Define antigen, antibody, and immunoglobulin and describe the immune response.

- 10.4 List the immunizations recommended for dental healthcare workers and state why it is important to keep these up to date.
- 10.5 Complete a research paper on immunizations, immunity and why they are important.

MAPPING LEARNING OUTCOMES TO GENERAL EDUCATION GOALS

[For each of the goals selected above, indicate which outcomes align with the goal.]

Goals	Outcomes
First Goal	
To communicate successfully, both orally and in writing, to a variety of audiences.	9.1, 9.2, 10.1, 10.2, 10.3, 10.4, 10.5
Second Goal	
To recognize what it means to develop and maintain a healthy lifestyle in terms of mind, body, and spirit.	5.1, 5.2, 5.3, 5.4, 8.1, 8.2, 8.3, 8.4, 8.5, 8.6, 8.7
Third Goal	
To connect learning to life.	1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 2.1, 2.2, 2.3, 2.4, 2.5

COURSE TOPICS AND CONTENT REQUIREMENTS:

- I. Infection control rationale and regulations
 - A. Pathways for cross-contamination
 - B. Goal of infection control
 - C. Recommendations and regulations
 - D. OSHA Bloodborne Pathogens Standard
- II. Personal protective equipment
 - A. Gloves
 - B. Handwashing
 - C. Masks
 - D. Protective eyewear
 - E. Protective clothing
- III. Surface and equipment asepsis
 - A. Surface covers
 - 1. Types and uses

- 2. Advantages/disadvantages
 - B. Precleaning and disinfection
 - 1. Procedures
 - 2. Types of disinfectants
 - C. Aseptic distribution of dental supplies
 - D. Dental unit waterline asepsis
- IV. Instrument processing
 - A. Sterilization versus disinfection
 - B. Instrument processing procedures
 - 1. Presoaking - holding
 - 2. Precleaning
 - 3. Corrosion control, drying, lubrication
 - 4. Packaging
 - C. Sterilization of instruments
 - 1. Steam sterilization
 - 2. Chemical vapor sterilization
 - 3. Dry heat sterilization
 - D. Sterilization monitoring
 - 1. Biological
 - 2. Chemical
 - 3. Physical
 - E. Handling of processed instruments
 - F. Design of the instrument processing area
 - G. Handpiece asepsis
 - H. Sterilization of heat-labile items
 - I. Other methods of sterilization
- V. Laboratory and radiographic asepsis
 - A. Laboratory asepsis
 - 1. Protective barriers
 - 2. Contaminated prostheses
 - 3. Impressions
 - 4. Grinding, polishing, and blasting
 - 5. Returning completed cases
 - B. Radiographic asepsis
 - 1. Protective barriers
 - 2. Exposure procedures
 - 3. Darkroom procedures
 - 4. Daylight loader procedures
- VI. Waste management
 - A. Infectious waste
 - B. Contaminated waste
 - C. Teeth and other tissues
 - D. Sharps
 - E. Record keeping
- VII. Office safety
 - A. Duties of Safety Coordinator
 - B. Hazard Communication Standard
 - 1. Purpose
 - 2. Scope and application

3. Hazard determination
- C. Written Hazard Communication Program
- D. Hazardous chemicals
 1. Inventory
 2. Labels/warnings
 3. Material Safety Data Sheets
- E. Employee training
 1. Safety measures
 2. Fire prevention
 3. Emergency plans/duties
- VIII. Microbiology
 - A. Role of microorganisms in infection control
 - B. Characteristics of microorganisms
 1. Bacteria
 2. Viruses
 3. Fungi
 4. Protozoa
 - C. Steps in disease development
 - D. Pathogenic properties of microorganisms
 - E. Host defense mechanisms
 - F. Emerging diseases
 - G. Microbiology of caries
 - H. Microbiology of periodontal disease
- IX. Bloodborne pathogens
 - A. Viral hepatitis
 1. Types
 2. Transmission
 3. Symptoms
 4. Risk for the dental team and patient
 - B. HIV disease
 1. HIV infection vs. AIDS
 2. Oral manifestations of AIDS
 3. Transmission
 4. Risk for the dental team and patient
- X. Immunization
 - A. Types of immunity
 - B. Importance of immunization
 - C. Recommended vaccinations
 1. Tetanus
 2. Influenza
 3. Hepatitis B
 4. Measles, mumps, rubella (MMR)

INSTRUCTIONAL METHODS:

- Lecture
- Class discussion
- Biology Lab
- Group Project

- Power Points
- Visual aids – videos
- Research Papers
- Writing center
- Library
- Demonstrations
- Exams and quizzes

INSTRUCTIONAL MATERIALS:

Text: *Infection Control and Management of Hazardous Materials for the Dental Team*, Sixth Edition, Miller, Elsevier, 2018

Videos - What if Saliva were Red?
 Hazard Communication Program
 Principles and Fundamentals of Infection Control
 Clinical Procedures
 Sterilization and Disinfection

STUDENT REQUIREMENTS AND METHODS OF EVALUATION:

- Reading assigned materials, note taking, research paper and participation in classroom discussion is expected of students.
- Written examinations are used to evaluate student progress. A minimum of four exams and a comprehensive final exam will be given. All exam grades are averaged equally to determine the final grade.
- A grade of “C” is required for promotion through and graduation from the Dental Assisting Program. The following grading scale will be used as a guide in determining the final letter grade for this course:

A= 90-100
 B= 80-89
 C= 70-79
 D= 60-69
 F= 0-59

OTHER REFERENCES

Centers for Disease Control (CDC)
 Occupational Safety and Health Administration (OSHA)
 IVCC Dental Assisting Program Policies for Asepsis, Infection and Hazard Control Handout
 SDS (MSDS) Binder in Dental Lab
 Equipment Operator Manuals in binder in lab or online
 Sterilization items label in lab or online
 Disinfectant items label in lab or online

Course Competency/Assessment Methods Matrix

(Dept/# Course Name)		Assessment Options																														
For each competency/outcome place an "X" below the method of assessment to be used.	Assessment of Student Learning	Article Review	Case Studies	Group Projects	Lab Work	Oral Presentations	Pre-Post Tests	Quizzes	Written Exams	Artifact Self Reflection of Growth	Capstone Projects	Comprehensive Written Exit Exam	Course Embedded Questions	Multi-Media Projects	Observation	Writing Samples	Portfolio Evaluation	Real World Projects	Reflective Journals	Applied Application (skills) Test	Oral Exit Interviews	Accreditation Reviews/Reports	Advisory Council Feedback	Employer Surveys	Graduate Surveys	Internship/Practicum /Site Supervisor Evaluation	Licensing Exam	In Class Feedback	Simulation	Interview	Written Report	Assignment
	Direct/ Indirect	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	I	I	I	I	D	D						
Assessment Measures – Are direct or indirect as indicated. List competencies/outcomes below.																																
Demonstrate a basic understanding of infection control rationale, recommendations, and regulations as stated in the OSHA Bloodborne Pathogen Standard.		X	X	X	X	X		X	X			X			X								X			X	X	X			X	X
Demonstrate a basic understanding of the requirements, uses, and methods of donning personal protective equipment.		X	X	X	X	X		X	X			X			X								X			X	X	X			X	X
Demonstrate a basic understanding of surface and equipment asepsis		X	X	X	X	X		X	X			X			X								X			X	X	X			X	X

Demonstrate a basic understanding of the procedures that prepare contaminated instruments for reuse.		X	X	X	X	X		X	X			X									X			X	X	X			X	X
Demonstrate a basic understanding of laboratory and radiographic aseptic procedures.		X	X	X	X	X		X	X			X									X			X	X	X			X	X
Demonstrate a basic understanding of regulations and procedures for dental office waste management.		X	X	X	X	X		X	X			X									X			X	X	X			X	X
Demonstrate a basic understanding of office safety procedures as outlined in the OSHA Hazard Communication Standard.		X	X	X	X	X		X	X			X									X			X	X	X			X	X
Demonstrate a basic understanding of microbiology and the disease process.		X	X	X	X	X		X	X			X									X			X	X	X			X	X
Demonstrate a basic understanding of bloodborne pathogens and the risk they pose for dental healthcare workers.		X	X	X	X	X		X	X			X									X			X	X	X			X	X
Demonstrate a basic understanding of immunity and recommended Immunizations for dental healthcare workers.		X	X	X	X	X		X	X			X									X			X	X	X			X	X