



# **ILLINOIS VALLEY COMMUNITY COLLEGE**

## **COURSE OUTLINE**

**DIVISION:** Workforce Development

**COURSE:** DLA 1205 Preventative Dentistry I

Date: Spring 2021

Credit Hours: 1.5

Prerequisite(s): Acceptance into the Dental Assisting Program; DLA 1209

Delivery Method:

<input checked="" type="checkbox"/> <b>Lecture</b>	<b>1.5 Contact Hours (1 contact = 1 credit hour)</b>
<input type="checkbox"/> <b>Seminar</b>	<b>0 Contact Hours (1 contact = 1 credit hour)</b>
<input type="checkbox"/> <b>Lab</b>	<b>0 Contact Hours (2-3 contact = 1 credit hour)</b>
<input type="checkbox"/> <b>Clinical</b>	<b>0 Contact Hours (3 contact = 1 credit hour)</b>
<input type="checkbox"/> <b>Online</b>	
<input type="checkbox"/> <b>Blended</b>	

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

IAI Equivalent – **Only for Transfer Courses**–go to <http://www.itransfer.org>:

### **CATALOG DESCRIPTION:**

This course includes discussion on the causes and treatments of dental caries and periodontal disease with emphasis on diet, nutrition, proper home care, preventative agents, and the dental assistant's role in prevention. Personal oral health is stressed, and students will prepare and present programs to patient's regarding personal oral hygiene.

## 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 appreciation for 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:

- 1.0 Demonstrate a basic understanding of the scope of preventive dentistry.**
  - 1.1 Identify the need for preventive dentistry and discuss the cost of dental neglect.
  - 1.2 Identify the two major types of dental disease, describe them, list causes and solutions for each.
  - 1.3 Explain how diagnosis, oral and dietary guidance, fluorides, restorative dentistry, recall programs, developmental guidance, and sports guards relate to the preventive dentistry program.
- 2.0 Demonstrate a basic understanding of concepts for oral hygiene assessment**
  - 2.1 Discuss soft dental deposits and oral biofilm, as well as microorganisms within oral biofilm and with patients the impact of dental deposits on oral health.
  - 2.2 Discuss hard dental deposits, including calculus formation
  - 2.3 Describe assessments of dental deposits and how essential they are for effective care planning
  - 2.4 Explain the responsibility of record keeping and documentation

- 3.0 Demonstrate an understanding of tooth brushing, flossing, and the use of various oral hygiene aids.**
  - 3.1 Describe the purpose of brushing and flossing in the control of dental plaque.
  - 3.2 List and give uses for oral hygiene aids used to remove plaque.
  - 3.3 Explain the effects of poor tooth brushing techniques.
  - 3.4 Discuss dentifrices and mouth rinses, including types and composition
  - 3.5 List the various materials used for treating sensitive teeth and explain how desensitizing agents work.
- 4.0 Demonstrate a basic understanding of dental caries.**
  - 4.1 Describe the complete process of tooth decay.
  - 4.2 List factors which contribute to tooth decay.
  - 4.3 Describe the remineralization process of enamel and the conditions necessary for this process.
- 5.0 Demonstrate a basic understanding of periodontal disease.**
  - 5.1 Identify reversible/non-reversible periodontal conditions.
  - 5.2 Discuss the strategies needed to prevent dental disease.
  - 5.3 Discuss the importance of the students' need for personal oral hygiene and self-motivation.
  - 5.4 Discuss bringing about behavior change in patients.
  - 5.5 Discuss phases of a plaque control program.
  - 5.6 Identify and explain the steps for a complete and thorough periodontal diagnosis.
- 6.0 Demonstrate a basic understanding of the etiology and progression of periodontal disease.**
  - 6.1 Explain the progression of periodontal disease from the accumulation of plaque to periodontitis; and be able to distinguish these diseases from each other.
  - 6.2 Identify the factors which contribute to the severity of periodontal disease.
  - 6.3 Identify and explain the make-up of the periodontium of a tooth.
  - 6.4 State the indications/contra-indications for periodontal treatment.
- 7.0 Demonstrate a basic understanding of periodontic procedures and the role of the dental assistant in these procedures.**
  - 7.1 Describe the role of the assistant and the hygienist in the specialty of periodontics.
  - 7.2 Describe the procedures involved in a periodontal exam and record a patient's condition.
  - 7.3 Describe the specialized periodontal procedures.
  - 7.4 Identify periodontal instruments and know their uses; the student will also be able to select the proper armamentarium for specific periodontal procedures.
  - 7.5 Explain post-operative instructions to a patient who has undergone various periodontal treatments
- 8.0 Demonstrate a basic understanding of patient education and motivation as it applies to preventive dentistry.**
  - 8.1 Identify the five aspects of preventive dentistry that when used in combination makes a program successful.
  - 8.2 Communicate to the patient the need for prevention.

- 8.3 Explain motivation and the approaches to it; discuss the importance of understanding the patients' motivations, emotions, and dental attitudes; observe verbal and non-verbal clues.
- 8.4 Explain the five-step process in learning new skills/habit patterns.
- 8.5 Identify possible visual aids to be used in patient education.
- 8.6 Role-play situations to aid students in motivating their patients
- 9.0 Demonstrate a basic understanding of community dentistry.**
  - 9.1 Explain the role of preventive dentistry in the community dentistry program.
  - 9.2 Identify special needs groups who are helped by or depend on community dentistry programs for their oral health care.
  - 9.3 Discuss various preventive dentistry programs for use in a public school or day care facility.
  - 9.4 Tobacco Cessation
- 10.0 Demonstrate a basic understanding of the importance of diet in dental health.**
  - 10.1 Explain to the patient how food habits are established, such as environmental.
  - 10.2 Explain to the patient the relationship of carbohydrates to the development of dental diseases.
  - 10.3 Instruct and evaluate the patient in the proper maintenance of a food diary.
  - 10.4 Explain to a patient the relationship of nutrition to oral health in situations such as: post-surgery-soft diet, new denture diet, and orthodontics.
- 11.0 Demonstrate a basic understanding of nutrition and its impact on dental health and general health.**
  - 11.1 Define the following terms: nutrition, diet, and digestion.
  - 11.2 Describe the role of nutrition in dentistry
  - 11.3 Explain how diet and nutrition are important to the general health, as well as dental health of a patient
  - 11.4 Identify the four major food groups, as well as foods found in each group. Note the primary nutritional contributions of each group
  - 11.5 Identify the six key nutrients and describe their primary functions. Also, identify sources of key nutrients
  - 11.6 Identify common nutritional deficiencies and the symptoms that may be manifested in the mouth.
  - 11.7 Demonstrate competence in dietary evaluation and counseling.
- 12.0 Demonstrate a working understanding of Topical Fluoride**
  - 12.1 Basic information about fluoride
  - 12.2 Describe fluoride and its use in dentistry
  - 12.3 Fluoride in food and liquids
  - 12.4 Fluoride in medications and supplements
  - 12.5 Differences between topical and systemic fluoride
  - 12.6 Indications and contraindications for topical fluoride
  - 12.7 Benefits of topical fluoride
  - 12.8 Topical fluoride application
    - Professional use
    - Home use
    - Determining appropriate method
  - 12.9 Preparation of teeth

- 12.10 Armamentarium
- 12.11 Fluoride preparations
  - Sodium fluoride
  - Acidulated phosphoric fluoride
  - Stannous fluoride
  - Varnish
- 12.12 Adverse reactions
- 12.13 Patient education
- 12.14 Care of fluoridated products
- 12.15 Post-treatment instructions
- 12.16 Frequency of fluoride treatment

## MAPPING LEARNING OUTCOMES TO GENERAL EDUCATION GOALS

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

Goals	Outcomes
<b>First Goal</b>	
To construct a critical awareness of and appreciate diversity.	9.1 Explain the role of preventive dentistry in the community dentistry program. 9.2 Identify special needs groups who are helped by or depend on community dentistry programs for their oral health care. 9.3 Discuss various preventive dentistry programs for use in a public school or day care facility.
<b>Second Goal</b>	
To communicate successfully, both orally and in writing, to a variety of audiences.	8.1 Identify the five aspects of preventive dentistry that when used in combination makes a program successful. 8.2 Communicate to the patient the need for prevention. 8.3 Explain motivation and the approaches to it; discuss the importance of understanding the patients' motivations, emotions, and dental attitudes; observe verbal and non-verbal clues. 8.4 Explain the five-step process in learning new skills/habit patterns. 8.5 Identify possible visual aids to be used in patient education. 8.6 Role-play situations to aid students in motivating their patients
<b>Third Goal</b>	
To recognize what it means to develop and maintain a healthy lifestyle in terms of mind, body, and spirit.	11.1 Define the following terms: nutrition, diet, and digestion. 11.2 Describe the role of nutrition in dentistry. 11.3 Explain how diet and nutrition are important to the general health, as well as dental health of a patient.

	<p>11.4 Identify the four major food groups, as well as foods found in each group. Note the primary nutritional contributions of each group.</p> <p>11.5 Identify the six key nutrients and describe their primary functions. Also, identify sources of key nutrients.</p> <p>11.6 Identify common nutritional deficiencies and the symptoms that may be manifested in the mouth.</p> <p>11.7 Demonstrate competence in dietary evaluation/counseling.</p>
--	--

## **COURSE TOPICS AND CONTENT REQUIREMENTS:**

1. Introduction to prevention
  - a. Philosophy of preventive dentistry
  - b. Costs of dental neglect
  - c. Major diseases associated with prevention
    - i. Dental caries
    - ii. Periodontal disease
  - d. Aspects of preventive dentistry
    - i. Diagnosis
    - ii. Personal oral hygiene
    - iii. Diet guidance and control
    - iv. Fluorides
    - v. Restorative dentistry
    - vi. Preventive recall program
    - vii. Developmental guidance
    - viii. Prevention of sport injuries
    - ix. Patient education and motivation
2. Concepts for Oral Hygiene Assessment
  - a. Hard and soft deposits
    - i. Location
      1. Supragingival
      2. Subgingival
    - ii. Amount
      1. Slight
      2. Moderate
      3. Heavy
    - iii. Extent and distribution
      1. Generalized
      2. Localized
    - iv. Risk factor for dental caries and periodontal diseases
      1. Oral biofilm (bacterial plaque or dental plaque)
  - b. Dental deposits
    - i. Oral biofilm
    - ii. Microorganisms within oral biofilm
      1. Supragingival microorganisms (aerobic gram-positive aerobic rods and cocci)
        - a. Streptococcus mitis

- b. Streptococcus sanguinis
      - c. Streptococcus gordonii
      - d. Streptococcus oralis
    - 2. Subgingival microorganisms (gram negative spirochetes and motile rods)
      - a. Fusobacterium nucleatum
      - b. species of Prevotella and Treponema
      - c. Campylobacter rectus
      - d. Bacteria associated with periodontitis (anerobic)
        - i. Porphyromonas gingivalis
        - ii. Prevotella intermedia
        - iii. Tannerella forsythia
        - iv. Filifactor and Peptostreptococcus
        - v. Aggregatibacter actinomycetemcomitans
    - iii. Stages of oral biofilm formation
      - 1. Initial adherence
        - a. Acquired pellicle
      - 2. Lag phase
      - 3. Rapid growth bacterial colonization
        - a. Matrix
        - b. Inflammation
      - 4. Steady state
        - a. Biofilm colony matures
    - iv. Materia alba and food debris
  - c. Clinical assessment of oral biofilm
    - i. Direct vision
    - ii. Disclosing agents
    - iii. Assessment
  - d. Dental calculus
    - i. Supragingival
      - 1. Chalky-white appearance
    - ii. Subgingival
      - 1. Dark green to brown-black color
    - iii. Formation
      - 1. Calcified plaque
    - iv. Composition
      - 1. Inorganic components
      - 2. Organic components
  - e. Record keeping and documentation
    - i.
3. Dental caries
  - a. Definition of caries
  - b. Dental caries process
    - i. Demineralization
    - ii. Remineralization
  - c. White spot lesion
  - d. Risk factors
  - e. Protective factors

- f. Baby bottle tooth decay
- 4. Fluoride therapies
  - a. Ingested fluoride
    - i. Community water fluoridation
    - ii. Fluoride in food and beverages
    - iii. Prescription fluoride supplements
    - iv. Toxicity
  - b. Topical fluoride
    - i. Self-applied OTC and prescription
      - 1. Rinses
      - 2. Gels and pastes
    - ii. Professionally applied
      - 1. Gel
      - 2. Foam
      - 3. Rinse
      - 4. Varnishes
  - c. Children and fluoride
  - d. Dentifrices/toothpastes
  - e. School-based programs
  - f. Acute fluoride toxicity
  - g. Non fluoride caries-preventative agents
    - i. Chlorhexidine
    - ii. Xylitol
    - iii. Amorphous calcium phosphate (ACP)
    - iv. Casein phosphopeptides-amorphous calcium phosphate (CPP-ACP)
      - 1. MI Paste
    - v. Calcium sodium phosphosilicate
    - vi. Tricalcium phosphate
    - vii. Sodium bicarbonate
    - viii. Probiotics
  - h. Xerostomia
- 5. Periodontal disease
  - a. Risk factors
    - i. Modifiable
    - ii. Nonmodifiable
  - b. Assessment instruments
  - c. Periodontal screening
  - d. Healthy periodontium
  - e. Clinical appearance of gingiva
  - f. Disease periodontium
    - i. Gingivitis
    - ii. Periodontitis
  - g. Immunopathology
  - h. Signs of gingival disease
    - i. Gingivitis
    - ii. Periodontitis
  - i. Radiographs
- 6. Preventive aids
  - a. Toothbrushing



- i. Manual
        - 1. Parts of the toothbrush
      - ii. Power toothbrushes
      - iii. Toothbrushing Instruction
        - 1. Duration and frequency
        - 2. Pressure
      - iv. Methods
      - v. Softs and hard tissue lesions
      - vi. Tongue cleansing
    - b. Interdental and supplemental oral self-care devices
      - i. Selecting self-care devices
        - 1. Floss
          - a. Benefits
          - b. Type
          - c. Methods
          - d. Holders and threaders
        - 2. Water jets
        - 3. Brushes and tips
        - 4. Toothpicks, toothpick holders, and triangular toothpicks
        - 5. Rubber tip stimulators
        - 6. Tongue cleaners
        - 7. Additional devices
      - ii. Oral piercings
      - iii. Types of floss
    - c. Dentifrices
      - i. Purpose and definition
      - ii. Forms
      - iii. Components
        - 1. Non-medical ingredients
        - 2. Therapeutic effects, therapeutic agents, and medicinal ingredients
          - a. Desensitizing agents
      - iv. Adverse health effects
      - v. Patient recommendations
    - d. Mouth rinses
      - i. Cosmetic
      - ii. Therapeutic
7. Patient education and motivation
  - a. Approaches to motivation
  - b. Steps in learning skills and habit patterns
  - c. Example plaque control education
  - d. Tobacco cessation
8. Diet and dental health
  - a. Role of carbohydrates
  - b. Diet counseling
  - c. Patient involvement
  - d. Four basic food groups
  - e. Special diet needs
  - f. Food diary and analysis

## 9. Nutrition

- a. Definitions
  - i. Nutrition
  - ii. Diet
  - iii. Digestion
- b. Key nutrients
  - i. Identification and functions
- c. Food composition and functions
  - i. Carbohydrates
    - 1. Functions and classifications
    - 2. Food sources
  - ii. Fats (lipids)
    - 1. Definition and function
    - 2. Basic units of fat
    - 3. Food sources
    - 4. Other lipids
    - 5. Body handling of fat
  - iii. Protein
    - 1. Definition, functions, structural need
    - 2. Food sources
    - 3. Deficiency and body's use of protein
  - iv. Vitamins
    - 1. General characteristics
    - 2. Classifications
  - v. Minerals
    - 1. General characteristics
    - 2. Function and types of minerals
  - vi. Water
    - 1. Function and sources
- d. Factors in a balanced diet
  - i. RDA; body differences
  - ii. Food groups
  - iii. Nutritional deficiencies
- e. Nutrition and oral health
- f. Digestion

## 10. Periodontal disease

- a. The problem
  - i. influencing factors
  - ii. Tissue reaction
  - iii. Removal of irritants
- b. Causative factors
- c. Periodontium
  - i. Gingiva
    - 1. Types of gingiva
    - 2. Specialized mucosa
  - ii. Periodontal ligament
    - 1. Functions
    - 2. Types of tissue

- iii. Alveolar bone
    - iv. Cementum
  - d. Characteristics of healthy gingiva
  - e. Factors that influence periodontal tissue reaction
    - i. Local irritation
    - ii. Local functioning
    - iii. Systemic
      - 1. Hormones, nutrition, drugs, heredity
  - f. Periodontal disease in children/adolescents
  - g. Progression of periodontal disease
    - i. Plaque and calculus
    - ii. Gingivitis
    - iii. Acute necrotizing ulcerative gingivitis
    - iv. Periodontitis
    - v. Periodontal pocket
    - vi. Periodontal abscess
    - vii. Bone loss
    - viii. Cysts
  - h. Indication/contraindications for treatment
- 11. Periodontics
  - a. Procedures for treatment of periodontal disease
    - i. Initial exam and phases of periodontal treatment; the assistant's role in treatment
    - ii. Non-surgical treatment
    - iii. Surgical treatments
  - b. Instruments and tray set-ups
  - c. Medications
  - d. Post-op instructions
- 12. Community dentistry
  - a. Role of preventive dentistry
  - b. Special needs groups
  - c. Types of preventive programs

### **INSTRUCTIONAL METHODS:**

- Power Points
- Online discussions
- Hands-on Demonstration
- Blackboard
- Visuals aids - DVD, models, charts, video clips
- Computers - Internet research
- Research Project
- Patient Education Projects

**INSTRUCTIONAL MATERIALS:**

- Text: Dental Assisting: A Comprehensive Approach, Fifth Edition, Phinney/Halstead, Cengage Learning, 2018.
- Darby and Walsh Dental Hygiene Theory and Practice, Fifth Edition, Bowen/Pieren, Elsevier, 2020
- [www.ADA.org](http://www.ADA.org)
- <http://www.choosemyplate.gov/>
- Harris, Norman O, Franklin Garcia-Godoy and Christine Nielsen Nathe. Primary Preventative Dentistry, 8th Edition. Pearson, 2014.
- Models and charts

**STUDENT REQUIREMENTS AND METHODS OF EVALUATION:**

- Reading assigned materials, note taking, and participation in discussion and role plays are expected of students
- Examinations, role plays, and media recordings are used to evaluate student progress.
- Various projects will be assigned throughout the semester and must be completed with a 'C' or higher in order to successfully complete the course.
- A grade of "C" is required for graduation from the Dental Assisting Program. The following grading scale will be used as a guide in determining the final grade for this course:

A = 90-100%

B = 80 - 89%

C = 70 - 79%

D = 60 - 69%

F = 0 - 59%

**OTHER REFERENCES**

## Course Competency/Assessment Methods Matrix

DLA 1205	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 the scope of preventive dentistry.				X	X	X		X	X			X	X	X						X			X						X	X					X
Demonstrate a basic understanding of dental plaque.			X	X	X		X	X				X	X	X						X			X						X	X					X
Demonstrate a basic understanding of tooth brushing, flossing, and the use of various oral hygiene aids.			X	X	X		X	X				X	X	X						X			X						X	X					X
Demonstrate a basic understanding of dental caries.			X	X	X		X	X				X	X	X						X			X						X	X					X

Demonstrate a basic understanding of periodontal disease.				X	X	X		X	X			X	X	X					X			X					X	X			X
Demonstrate a basic understanding of the etiology and progression of periodontal disease.				X	X	X		X	X			X	X	X					X			X					X	X			X
Demonstrate a basic understanding of periodontic procedures.				X	X	X		X	X			X	X	X					X			X					X	X			X
Demonstrate a basic understanding of patient education and motivation as it applies to preventive dentistry.				X	X	X		X	X			X	X	X					X			X					X	X			X
Demonstrate a basic understanding of community dentistry.				X	X	X		X	X			X	X	X					X			X					X	X			X
Demonstrate a basic understanding of the types and uses of preventive dental materials.				X	X	X		X	X			X	X	X					X			X					X	X			X
Demonstrate a basic understanding of the importance of diet in dental health.				X	X	X		X	X			X	X	X					X	X		X					X	X			X
Demonstrate a basic understanding of nutrition and its impact on dental health and general health.				X	X	X		X	X			X	X	X					X	X		X					X	X			X