

**PALOMAR COLLEGE**  
**COURSE OUTLINE OF RECORD FOR**  
**DEGREE CREDIT COURSE**

\_\_\_\_\_ Transfer Course  X  A.A. Degree applicable course  
(check all that apply)

**COURSE NUMBER AND TITLE:** DA 57 – Dental Sciences and Anatomy

**UNIT VALUE:** 4

**MINIMUM NUMBER OF SEMESTER HOURS:** 64

**BASIC SKILLS REQUIREMENTS:** Appropriate language skills

**ENTRANCE REQUIREMENTS**

**PREREQUISITE:** Admission to the Dental Assisting Program

**COREQUISITE:** None

**RECOMMENDED PREPARATION:** None

**SCOPE OF COURSE:**

Introduction of dental terminology, histology, embryology, tooth growth, eruption, and anatomy; head and neck anatomy, and physiology of the body. Form and function of individual teeth, occlusion, oral pathology, diet and nutrition, relation of oral health to general health, microbiology, disease control and dental pharmacology. *Graded only.*

**SPECIFIC COURSE OBJECTIVES:**

Successful students will:

1. Define the body tissues in general anatomical terms.
2. List, locate and describe the major tissues of a tooth.
3. Explain the development of deciduous and succedaneous dentitions.
4. List and identify all major landmarks of the oral cavity.
5. Differentiate between the skull of a newborn infant and that of an adult.
6. Identify and locate all of the cranial and facial bones.
7. List and describe the muscles of mastication.
8. Describe the functions of the salivary glands.
9. Isolate and identify the major nerves and arteries of head and face.
10. Identify the major body systems and their functions.
11. Explain different types of anesthetics and explain rationale for utilization.
12. Explain different methods of injecting local anesthetics.
13. Identify and locate specific landmarks for injections.
14. Utilize dental terminology appropriately.
15. Compare and contrast the four types of teeth. Describe the design and specialized functions of each type and classify them as anterior or posterior teeth.

16. Explain the Universal Numbering System for both the primary and permanent dentition.
17. Identify the number and types of teeth in the primary dentition; state the specialized functions of the permanent dentition and describe the special characteristics of these teeth.
18. Identify each of the permanent and primary teeth in terms of number of cusps and roots, and unusual anatomic landmarks. The correct terminology should be used in describing these landmarks.
19. Identify Angle's classification of normal occlusion and malocclusion.
20. Identify the major drugs covered by the Controlled Substance Act.
21. Compare the major routes of drug administration and identify the procedures to be followed when handling medications.
22. Identify the types of drugs used in dentistry for the control of anxiety and compare mild and strong analgesics.
23. Compare and contrast the specialized uses and problems (in dentistry) of the antibiotics: penicillin, tetracycline, and erythromycin.
24. Explain the use of vasoconstrictors, antihistamines, corticosteroids, and atropine sulfate.
25. Explain the components of a written prescription.
26. Analyze the assistant's role in preventing drug abuse in the dental office.
27. Explain body defenses, inflammation, healing and repair and identify the classifications of lesions.
28. Identify the major diseases of the teeth and surrounding tissues of the oral cavity.
29. Identify the oral manifestations, and implications for dental treatment of diseases such as oral cancer, TMJ disorders, tic douloureux, herpes, and nutritional disorders.
30. Explain the role of carbohydrates in nutrition.
31. Explain the role of fats in the diet and identify three types of fatty acids and their sources.
32. Evaluate the role of protein in the diet and identify the difference in incomplete protein and essential amino acids.
33. Analyze essential vitamins and minerals by stating their primary function and listing one good source of each.
34. Explain why foods are divided into the four major food groups, identify foods found in each group, and identify the primary nutritional contributions of each group.
35. Evaluate the role of nutrition in dental caries.
36. Identify the oral manifestations, and implications for dental treatment of secondary oral disorders including hepatitis and AIDS.
37. Identify the key nutrients and explain their primary functions.
38. Define the following terms: infection, contamination, exogenous infection, endogenous infection, virulence, bacteremia, septicemia, pyemia, toxemia, sapremia, opportunists and carrier.
39. List at least three microbes that are part of the normal microflora of the following areas: skin, mouth (including gingival crevice), respiratory tract, eye, nose, vagina.
40. Contrast and compare the following terms: communicable disease and noncommunicable disease, exogenous infection and endogenous infection.
41. Identify three communicable diseases and three noncommunicable diseases.
42. Describe in writing the two classes into which microbes fall that causes infections.
43. Define the following type of infections: acute infection, chronic infection, primary infection, secondary infection, latent infection, mixed infection, localized infection, generalized infection, and focal infection.
44. List the five portals of entry and give two examples of microorganisms that can enter by each portal.
45. Define the following terms: microbiology, aerobic, anaerobic, facultative, parasitic, pathogen, saprophyte, inclusion bodies, and interferon.
46. List the six major groups of microorganisms.
47. List the three general shapes of bacteria.
48. List one type of bacteria that exist as chains, one that exists in clusters and one that exists in clusters of two.
50. List the general size range for the three shapes of bacteria.

## **CONTENT IN TERMS OF SPECIFIC BODY OF KNOWLEDGE:**

- I. Oral Histology
  - A. Anatomical Parts
    - 1. Crown
    - 2. Roots
    - 3. Enamel
    - 4. Dentin
    - 5. Cementum
    - 6. Pulp
  - B. Periodontium
    - 1. Attachment apparatus
    - 2. Gingiva
    - 3. Alveolar process
- II. Oral Embryology (Development)
  - A. Embryonic Development of the Face and Oral Cavity
  - B. Growth Phases of a Tooth
    - 1. Initiation
    - 2. Calcification
    - 3. Eruption
  - C. Primary Embryology
    - 1. Pregnancy and prenatal phases
    - 2. Embryonic development of the face and oral cavity
    - 3. Post-natal facial development
  - D. Developmental Periods
    - 1. Head and face
    - 2. Mandible
    - 3. Maxilla
    - 4. Alveolar process
    - 5. Primary teeth
    - 6. Permanent teeth
- III. Microscopic Anatomy
  - A. Tissues and Cells
    - 1. enamel
    - 2. dentin
    - 3. cementum
    - 4. epithelial
    - 5. alveolar
    - 6. periodontium
    - 7. fibroblasts
    - 8. odontoblast
    - 9. ameloblasts
    - 10. cementoblasts
- IV. Anatomy of the Head and Neck
  - A. Cranial Bones
  - B. Facial Bones
    - 1. Maxillary landmarks
    - 2. Mandibular landmarks
  - C. Composition of Cranial/Facial Bones
    - 1. Locations

- 2. Functions
- 3. Divisions/sutures
- D. Paranasal Sinuses
  - 1. Location
  - 2. Function
- E. Foramina
  - 1. Locations
  - 2. Functions
- V. Oral Structures
  - A. Salivary Glands
    - 1. Locations
    - 2. Functions
  - B. Oral Epithelium
    - 1. Oral mucosa
    - 2. Labial mucosa
    - 3. Palatal mucosa
  - C. Glosso/Tongue
    - 1. Taste receptors
      - a. Locations
      - b. Responses
    - 2. Type of tissue
  - D. Muscles of Mastication
    - 1. Locations
    - 2. Origins
    - 3. Insertions
    - 4. Functions
  - E. Innervation of the Face
    - 1. Circulatory
      - a. Cranial
      - b. Facial
      - c. Teeth
    - 2. Nerves
      - a. Cranial
        - 1. Locations
        - 2. Functions
      - b. Facial
        - 1. Locations
        - 2. Functions
      - c. Teeth
        - 1. Names of each
        - 2. Locations
        - 3. Functions
- VI. Anesthesiology
  - A. Topical
    - 1. Agents
    - 2. Description of action/effectiveness
    - 3. Application procedure
  - B. Local
    - 1. Agents
    - 2. Description of action/effectiveness
    - 3. Application process
  - C. General

- 1. Agents
- 2. Description of action/effectiveness
- 3. Application process
- D. Analgesia
  - 1. Agents
  - 2. Description of action/effectiveness
  - 3. Application process
- E. Nitrous Oxide Sedation
  - 1. Agents
  - 2. Effectiveness
  - 3. Application process
  - 4. Stages/planes to be recognized
- VII. Major Body Systems
  - A. Skeletal System
  - B. Muscular System
  - C. Circulatory System
  - D. Lymphatic and Immune System
  - E. Nervous System
  - F. Respiratory System
  - G. Digestive System
  - H. Urinary System
  - I. Endocrine System
  - J. Reproductive System
  - K. Stages of Growth
- VIII. Major Body Systems in Relation to Head and Neck
  - A. Skeletal System
    - 1. Components
    - 2. Major functions
    - 3. Types of bone
  - B. Muscular System
    - 1. Components
    - 2. Major functions
    - 3. Types of muscles
  - C. Circulatory System
    - 1. Components
    - 2. Major functions
    - 3. Location and function of the heart
    - 4. Types of blood vessels
  - D. Lymphatic and Immune System
    - 1. Structures
    - 2. Specialized cells
  - E. Respiratory System
  - F. Digestive System
    - 1. Structures
    - 2. Swallowing
- IX. Morphology
  - A. Types of teeth
  - B. Dental arches
  - C. Quadrants
  - D. Anterior and posterior teeth
  - E. Numbering system
  - F. Anatomic features

- 1. Surfaces
- 2. Line and point angles
- G. Primary and permanent dentition
- H. Specific anatomy
- X. Pharmacology
  - A. Drug names
    - 1. Brand
    - 2. Generic
  - B. Council on Dental Therapeutics
  - C. Controlled Substance Act
    - 1. Schedule I
    - 2. Schedule II
    - 3. Schedule III
    - 4. Schedule IV
    - 5. Schedule V
  - D. Prescription writing
  - E. Ordering narcotics
  - F. Handling drugs
  - G. Terminology of drug effects
  - H. Drug abuse
  - I. Dental signs and symptoms of drug abuse
  - J. Routes of drug administration
  - K. Antibiotics
  - L. Antifungal agents
  - M. Vasoconstrictors
  - N. Antihistamines
  - O. Corticosteroids
  - P. Atropine sulfate
  - Q. Oxygen
  - R. Analgesics
- XI. Agents for the control of anxiety
  - A. Anti-anxiety
  - B. Sedative and hypnotics
  - C. Barbituates sedative - hypnotics
  - D. Premedication
- XII. Oral Pathology
  - A. Terms defines
  - B. Body defenses
  - C. Inflammation
  - D. Healing and repair
  - E. Healing after surgery
  - F. Classification of oral lesions
    - 1. Below the surface
    - 2. Above the surface
    - 3. Flat or even with surface
    - 4. Either raised or flat
  - G. Diseases of the teeth
    - 1. Premature eruption
    - 2. Impaction
    - 3. Ankylosis
    - 4. Attrition
    - 5. Erosion

6. Abnormal resorption
7. Dental caries
- H. Diseases of the dental pulp
  1. Hyperemia
  2. Pulpalgia
  3. Pulpitis
  4. Periapical abscess
- I. Diseases of the oral soft tissue
  1. Periodontal disease
  2. Gingivitis
  3. Periodontitis
  4. Periodontosis
  5. Periodontal pocket
  6. Periodontal abscess
  7. Bone loss
  8. Pericoronitis
  9. Acute necrotizing ulcerative gingivitis
  10. Leukoplakia
  11. Candidiasis
  12. Herpes
    - a. Herpes simplex virus type I
    - b. Herpes simplex virus type II
  13. Aphthous ulcer
  14. Cellulitis
  15. Conditions of the tongue
- J. Oral manifestations of nutritional disorders
  1. B complex
  2. Pellagra
  3. Anemia
  4. Rickets
  5. Scurvy
- K. Temporomandibular joint disorders
- L. Tic douloureux
- M. Oral cancer
  1. Benign tumors
  2. Malignant tumors
  3. Leukemia
  4. Smokeless tobacco
  5. Prevention of oral cancer
  6. Warning signs
  7. Dental implications of radiation treatment
  8. Dental implications of chemotherapy
- N. Secondary oral disorders
  1. Measles
  2. Mumps
  3. Tetanus
  4. Anorexia nervosa
  5. Tuberculosis
  6. Syphilis
  7. Hepatitis
    - a. Hepatitis A
    - b. Hepatitis B

- c. Hepatitis C
- 8. AIDS
- XIII. Nutrition
  - A. Definitions
  - B. Key nutrients
    - 1. Carbohydrates
    - 2. Proteins
    - 3. Fats
    - 4. Water
    - 5. Vitamins
      - a. Fat soluble
      - b. Water soluble
    - 6. Minerals
  - C. Food Groups
    - 1. Milk
    - 2. Vegetable and fruit
    - 3. Meat
    - 4. Bread and cereal
  - D. The role of nutrition in preventive dentistry
  - E. Special diets for dental patients
    - 1. Soft
    - 2. Post extraction
    - 3. Injured anterior teeth
    - 4. Orthodontic patient
    - 5. Wired jaws
    - 6. The periodontal patient
    - 7. New dentures

**REQUIRED READING:**

Torres, H., and A. Ehrlich. Modern Dental Assisting. 7<sup>th</sup> edition. Philadelphia: W. B. Saunders, 2003.

**SUGGESTED READING:**

Taber, Clarence Wilbur. Taber's Cyclopedic Medical Dictionary. 19th Ed. Philadelphia: F.A. Davis Company, 2001.

**REQUIRED WRITING:**

In addition to in-class writings, students are required to transcribe assigned terms into a typewritten three-ring notebook.

**OUTSIDE ASSIGNMENTS:**

**Students are expected to spend a minimum of three hours per unit per week in class and on outside assignments, prorated for short-term classes.**

**INSTRUCTIONAL METHODOLOGY:**

**Check all that apply:**

- lecture
- laboratory
- lecture-laboratory combination
- directed study

**DISTANCE LEARNING:**

**This course may be offered as a distance learning course and meets Title 5 regulations 55370, 55372, 55374, 55376, 55378, and 55380.**

Yes  No

**If yes, check all that apply:**

- Television Course (Video one-way, e.g. ITV, video cassette, etc.)
- Online Course (Text one-way, e.g. newspaper, correspondence, electronic file, etc.)
- Two-Way Video Conferencing (Two-way interactive video and audio)
- One-Way Video Conferencing (One-way interactive video and two-way interactive audio)
- Computer Assisted Instruction (A specialized form of mediated instruction relying primarily on student access to information and prepared lessons or teaching materials through a computer terminal, but not under immediate supervision of a qualified instructor.)

**GRADING POLICY AND STANDARDS** (include methods of determining whether the stated objectives have been met by students):

Exams	45%
Final exam	25%
Notebook value	15%
Research paper	<u>15%</u>
Total	100%

Grading policy is in compliance with college standards described in the Palomar College catalog and the Faculty Manual.

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

**IS COURSE REPEATABLE FOR REASON(S) OTHER THAN DEFICIENT GRADE?**

Yes  No  Number of times course may be taken for credit: 1

If yes, identify specific provision of Title 5 Division 2 section(s), 55761-55763 and 58161 which qualifies course as repeatable:

**CONTACT PERSON:** Denise Rudy, Ext. 2573

**SIGNATURES ON FILE:**