



Wayne County Community College District

COURSE SYLLABUS

DA 106 Dental Applied Sciences and Medical Emergencies

CREDIT HOURS: 4.00

CONTACT HOURS: 60.00

COURSE DESCRIPTION: This course provides an in depth study of oral anatomy as well as medical emergencies in the dental office. Topics covered in oral anatomy include: head and neck anatomy, tooth anatomy and morphology, embryology, and histology. Dental charting for adults and children will also be covered. Medical emergencies will include: emergency carts/kits, administration of oxygen and emergency drugs, and the management of medical emergencies including the allergic reactions, syncope, circulatory, respiratory, epilepsy, diabetic and drug related emergencies. Monitoring of nitrous oxygen, face mask placement and emergency signs will also be discussed.

PREREQUISITES: Program Approval

EXPECTED COMPETENCIES:

Upon completion of this course, the student will be familiar with:

Medical and Dental Emergencies

- Name four (4) vital signs and give their normal range.
- Discuss methods used to monitor vital signs and their importance in emergency prevention.
- Discuss the importance of having accurate and updated health! medical history for each patient in relationship to preventing a medical emergency.
- List standard equipment in a dental emergency kit.
- Discuss circulatory emergencies, their signs and symptoms, i.e. -syncope, shock and orthostatic (postural) hypotension
- Discuss Cardiopulmonary Resuscitation as it relates to Dental emergencies.
- cardiovascular and cerebrovascular emergencies
- Discuss respiratory emergencies, their signs and symptoms, i.e. hyperventilation, asthma, emphysema airway obstruction convulsive disorders.
- Discuss allergic reactions, signs symptoms.
- Discuss diabetic related emergencies, signs and symptoms.
- Discuss hemorrhagic emergencies.
- Discuss office hazards and general preventive measures.
- Discuss the legal problems/responsibilities of emergency care.
- Recognize signs and symptoms of an emergency situation.

Nitrous Oxide:

- Describe the methods used to manage the pain and anxiety related to dental procedures
- Identify the attachments used with and oxygen/nitrous oxide tank
- Discuss the role of nitrous oxide in the care of the dental patient
- Demonstrate the ability to assist in the administration of nitrous oxide



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- Explain the importance of the demand-valve resuscitator
- Demonstrate the operation of the oxygen/nitrous oxide tank
- Describe the hazards of nitrous oxide oxygen sedation
- Describe the four stages of anesthesia
- Discuss the advantages of using nitrous oxide
- Discuss the contraindications to nitrous oxide use
- Discuss and assemble the necessary equipment Describe what a scavenger system is
- Assess a patient's medical history for contraindications
- Describe to a patient what to expect during nitrous oxide administration
- List signs and symptoms of when nitrous oxide administration. should be halted
- Discuss methods to reduce the exposure to nitrous oxide
- List indications for use of Nitrous Oxide Sedation
- Identify Contraindications for use of Nitrous Oxide Sedation
- Identify parts of the nitrous oxide system
- Discuss the role of the nitrous oxide in the care of dental patients
- Demonstrate the ability to assist in the monitoring of nitrous oxide to a competency (RDA required function)

Embryology and Histology

- Identify the terms and timelines for the three prenatal phases of pregnancy.
- Describe how the human face develops and changes during the zygote and embryo phases.
- Define the life cycle of a tooth and identify the changes.
- Define embryology and histology.
- Identify the substances of enamel, dentin, cementum and pulp, and their identifying marks.
- Identify the components of the periodontium and considerations of the alveolar bone.
- Describe the structures of the gingiva and mucosa.

Tooth Morphology

- Identify each dental arch and quadrants using correct terminology.
- List the primary and permanent teeth by name and location.
- Explain the eruption schedule of the primary and permanent teeth.
- Identify the different divisions of the tooth, including clinical and anatomical divisions.
- Identify the surfaces of each tooth and their location.
- Label and describe each anatomical landmark.
- Describe each permanent tooth according to location, anatomical features, morphology, function, position, and other identifying factors.
- Describe each deciduous (primary) tooth according to its location, anatomical features, morphology, function, position and other identifying factors.
- Identify each tooth using the correct terms and FDI, Palmer, and Universal system codes numbers.

Head and Neck Anatomy

- List and identify the landmarks of the face and the oral cavity.
- Identify the bones of the cranium and face.
- Identify the landmarks on the maxilla and mandible.



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- Identify the temporomandibular joint and its movement.
- List and identify the muscles of mastication, facial expression, the floor of the mouth, the tongue, the throat, the neck and the shoulders, and explain their functions.
- List and identify the nerves of the maxilla and the mandible.
- Identify the arteries and veins of the head and neck.
- Identify the location of the major and minor salivary glands.
- Describe and locate the divisions of the trigeminal nerve.

Dental Charting:

- Explain why charting is used in dental practices.
- Identify charts that use symbols to represent conditions in the oral cavity.
- List and explain the systems used for charting the permanent and deciduous dentitions.
- Define G.V. Black's six classifications of cavity preparation.
- List common abbreviations used to identify simple, compound, and complex cavities.
- Describe basic dental charting terminology
- Explain color indicators and identify charting-symbols
- Record and chart existing restorations and missing teeth for adult and pediatric patients

Competencies:

- Identify the Primary and Permanent Dentition According to the Universal Numbering System
- Identify the Surfaces of Anterior and Posterior Teeth
- Charting of Teeth
- Nitrous Oxide
- Professional Evaluation

ASSESSMENT METHODS:

Student performance may be assessed by examination, quizzes, case studies, oral conversation, group discussion, oral presentations. The instructor reserves the option to employ one or more of these assessment methods during the course.

GRADING SCALE:

90%-100%	= A
80%-89.9%	= B
70%-79.9%	= C
60%-69.9%	= D
<60%	= E