**Course Syllabus**

Wayne County Community College District

DA 126 Pathology, Pharmacology & Medical/Dental Emergencies

**CREDIT HOURS:** 3.00

**CONTACT HOURS:** .00

**COURSE DESCRIPTION:**
The topics discussed during the course include: emergency carts/kits, administration of oxygen, emergency drugs, allergic reactions, syncope emergencies, circulatory emergencies, respiratory emergencies, epilepsy, diabetes and drug related emergencies. The course provides a basic knowledge of the names, uses, and effects of drugs commonly used in dentistry. The course includes concepts of developmental/growth disturbances, diseases of microbiological origin, injury and repair, metabolic and disease disturbances, and oral manifestations of various diseases and conditions.

**PREREQUISITES:** DA 106

**EXPECTED COMPETENCIES:**
Upon successful completion of this course, the student will:

**DENTAL ASSISTING COMPETENCIES**

Competencies can be described by several basic characteristics. They are 1) a combination of knowledge, psychomotor skill, communication skill and/or attitude; and 2) independently performed at or above an acceptable level of a defined standard.

As a participating member of the health care team the dental assistant plays an integral role in the delivery of dental services to individuals and populations of all ages, including the medically compromised, mentally or physically challenged and socially or culturally disadvantaged. Each dental assisting course in the curriculum will strive to facilitate and certify the competence of the dental assisting student.

Upon completion of DA 202, the student will continue to acquire the following skills, knowledge and values as outlined in the document □ Competencies for the Dental Assisting Graduate.
Competencies for the Dental Assisting Graduate

Upon completion of this program, the student will be able to:

- Collect diagnostic and treatment data.
- Manage infection hazard control.
- Perform clinical supportive treatments.
- Take diagnostic radiographs
- Perform dental laboratory procedures
- Provide patient oral health instructions.
- Assist in managing medical emergencies
- Model professional behaviors, ethics, and appearance
- Carry out dental office procedures
- Perform expanded functions legal in Michigan

Topical Lecture Objectives

Microbiology

- Describe the various classifications of microorganisms including viruses, bacteria (according to their shape), protozoa and fungi.
- Demonstrate an understanding of infectious disease, air and blood borne pathogens.
- Discuss microorganism of dental importance, i.e. hepatitis, herpes, AIDS, TB, syphilis,
gonorrhea, etc.
- Describe the various modes of disease transmission.
- Discuss the relationship between infection and host resistance and types of immunity.
- Understand the importance of infection control and regulations.
- Discuss the relationship between infection and host resistance.
- Discuss the various types of immunity.
- Discuss the phases of a disease and the routes of transmission.
- Demonstrate an understanding of infectious diseases and blood borne pathogens.

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
• Cardiovascular and cerebrovascular emergencies
• A Review of CPR
• 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.
• Discuss the rationale of taking medical histories and vital signs in relationship to preventing a medical emergency.

Oral Pathology

• Apply pathologic concepts and definitions in the pathologic process
• List and define the eight diagnostic categories that contribute to the diagnostic process.
• Assist the dentist with procedures for the diagnosis and treatment of pathological conditions.
• Explain the process of inflammation, repair and wound healing
• Define and contrast the terms "hyperplasia" and "hypertrophy".
• Define and contrast the terms "metaplasia", "dysplasia", "hypoplasia", and "atrophy".
• Distinguish between chronic and acute inflammation.
• Explain the role of inflammation in periodontal and pulpal disease.
• Describe and contrast the primary function of the immune response to the primary function of the inflammatory response.
• Identify the types of hypersensitivity reactions and provide an example of each.
• Distinguish between hereditary, developmental and infectious disease.
• Identify one example each of a bacterial, viral, fungal, and parasitic infection.
• Define the term "neoplasia".
• Distinguish between benign and malignant neoplasms.
• Provide examples which illustrate the nomenclature of benign and malignant tumors.
• Define the term "opportunistic infection" and give an example of a systemic opportunistic infection and one example of an oral opportunistic infection.
• Using clinical photographs, identify oral lesions on the basis of their clinical appearance.
• Describe and compare the following dental abnormalities: attrition, abrasion, and erosion.
• Define and differentiate between the following based upon the clinical and
radiographic characteristics of each: pulpitis, periapical abscess, and periapical granuloma.

- Compare and contrast recurrent intraoral herpes simplex infection to recurrent aphthous
  - stomatitis.
- Describe the differences between odontogenic and nonodontogenic cysts.
- Describe the oral manifestations of squamous cell carcinoma.
- Describe the clinical manifestations of each type of oral candidiasis.
- Define pronounce and spell key terms related to oral/dental pathology.
- Explain the steps in performing an oral examination.
- Describe inflammation and repair process of body tissues
- Discuss how disease in various body organs can have a direct/indirect effect of the oral
  - tissues.
- Discuss developmental and other dental abnormalities including etiology, pathogenesis, features and treatment
- Discuss and describe diseases of the head and neck including
  - vascular, nerve related diseases and disease of the bone
  - their etiology, pathogenesis, clinical features and basic treatment
- Describe systematic diseases their effect on the oral cavity and their influence on the care of the dental patient.
- List and define anomalies developmental disorders related to the teeth.
- Discuss diseases of the gingival, periodontal membrane alveolar and tongue including their etiology, pathogenesis, clinical features and basic treatment.
- Discuss diseases of the salivary glands including bacterial, viral and mycotic disorders.
- Discuss the purpose of and the general procedures for performing biopsies.

**Pharmacology**

- Recognize and discuss the various drug classifications and the use of the PDR.
- Discuss the various methods of administering drugs including the laws governing the use
  - and dispensing of drugs.
- Discuss common drug action and interactions.
- Describe terminology and dosage.
- Write a prescription dictated by a dentist using recognized forms and symbols.
- Describe analgesics, hemostatic, blood anticoagulants and anticonvulsive drugs.
- Describe the effects of antibiotics, central nervous stimulants and depressants, nitrous oxide and corticosteroids.
Nitrous Oxide

- Describe the methods used to manage the pain and anxiety related to dental procedures
- Identify the attachments used with an 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
- 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
- Monitor a patient 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

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

GRADING SCALE:
A  = 94% to 100%
B  = 87% to 93%
C  = 80% to 86%
D  = 73% to 79%
E  = less than 72%