

Fundamentals Of Dental Assisting

Section 1: Didactic Education: Fundamentals of Dental Assisting

Table 4. Educational Parameters of the Didactic Component of the Fundamentals of Dental Assisting Curriculum

Unit	Title	Number of Tasks
1	Introduction to the Dental Profession	33
2	Dentistry and the Law	56
3	Dental Terminology	191
4	Preventative Oral Health	53
5	Infection Control	200
6	Patient Management	66
7	Anatomy	80
8	Dental Equipment	50
9	Dental Instruments and Procedures	121
10	Clinical Records	84
11	Oral Pathology	68
12	Emergency Care	60
13	Dental Anesthesia	75
14	Chair-Side Assisting	66
15	Dental Materials	82
16	Introduction to Dental Radiography	190
Total		1,475

1.0 Introduction to the Dental Profession

- I) Number of Tasks to Master = 33
- II) Intended Outcome: Given information about the dental team, specialties, and dental assisting credentials, the student will perform 85% of the following tasks with accuracy on the didactic exam.
- III) Tasks:

1.01 The Dental Team

- A) Identify five members of the dental profession.
 - (1) Dentist
 - (2) Dental Assistant
 - (3) Dental Hygienist
 - (4) Business Assistant
 - (5) Dental Laboratory Technician
- B) Define the five members of the dental team.
 - (1) Dentist – Leader of the dental team, responsible for all of the treatment and care of the patient.
 - (2) Dental Assistant – Aids the dentist in diagnosis, treatment, and dental care.
 - (3) Dental Hygienist – Concerned with the prevention of dental disease, specializing in the cleaning, polishing, and radiographing teeth, periodontal treatment, and patient education.
 - (4) Business Assistant – Responsible for the smooth and efficient operation of the business office.
 - (5) Dental Laboratory Technician – Performs dental lab procedures according to a written prescription of a licensed dentist.

1.02 The Dental Specialties

- A) Describe the nine specialty fields of dentistry.
 - (1) Dental public health – Involves public/community education to control and prevent disease.
 - (2) Endodontics – Concerned with the cause, diagnosis, prevention, and treatment of diseases and injuries to the pulp and associated structures.
 - (3) Oral and maxillofacial radiology – Enhance imaging techniques to locate tumors and infectious diseases of the jaw, assist in trauma cases, and help pinpoint temporomandibular disorders, newest of the specialties.

- (4) Oral and maxillofacial surgery – Involves the diagnosis and surgical treatment of diseases, injuries, and defects of the oral and maxillofacial regions.
- (5) Oral pathology – Concerned with the nature of the diseases affecting the oral cavity and adjacent structures. Perform biopsies and work closely with oral surgeons to provide a diagnosis.
- (6) Orthodontics – Involves the diagnosis, prevention, interception, and treatment of all forms of malocclusion of the teeth and associated structures.
- (7) Pediatric dentistry – Concerned with the oral health care of children from birth to adolescence, often dealing with emotional or behavioral problems.
- (8) Periodontics – Concerned with the diagnosis and treatment of the oral tissues supporting and surrounding the teeth.
- (9) Prosthodontics – Concerned with the restoration and replacement of natural teeth with artificial replacements.

1.03 Dental Assisting Credentials

A) Define seven acronyms for identification of Dental Assistants.

- (1) CDA – Certified Dental Assistant.
- (2) CDPMA – Certified Dental Practice Management Administrator.
- (3) COA – Certified Orthodontic Assistant.
- (4) COSMA – Certified Oral and Maxillofacial Surgery Assistant.
- (5) RDA – Registered Dental Assistant.
- (6) RDAEF – Registered Dental Assistant in Expanded Functions.
- (7) EFDA – Expanded Function Dental Assistant.

B) Explain how each of the seven Dental Assisting credentials may be obtained.

- (1) CDA – Granted by the Dental Assisting National Board after successful completion of the national certification examination.
- (2) CDPMA – Granted by the Dental Assisting National Board to recognize successful completion of the specialty examination in Dental Practice Management.
- (3) COA – Granted by the Dental Assisting National Board to recognize successful completion of the specialty examination on Orthodontics.
- (4) COMSA – This credential is no longer granted but is still recognized. Granted by the Dental Assisting National Board to recognize successful completion of a specialty examination in Oral and Maxillofacial Surgery.
- (5) RDA – Given by some states to indicate that specific requirements have been met to practice expanded and advanced functions for that state.

- (6) RDAEF – Given by some states to indicate that specific requirements have been met to practice expanded and advanced functions in that state.
- (7) EFDA – Given by some states to indicate specific requirements have been met to practice expanded and advanced functions of that state.

2.0 Dental Ethics and the Law

- I) Number of Tasks to Master = 56
- II) Intended Outcome: Given information about legal, ethical and risk management considerations, the student will be able to perform 85% of the following tasks on the didactic examination.
- III) Tasks:

2.01 Legal Considerations

- A) Identify and give the function of five agencies that regulate dentistry.
 - (1) State Board of Dentistry
 - (2) Drug Enforcement Agency
 - (3) State Board of Pharmacy
 - (4) Occupational Safety and Health Administration
 - (5) Environmental Protection Agency
- B) Identify current prohibitions specified by Rule 35 of the Idaho Dental Practice Act.
- C) Define two types of law that affect dentistry.
 - (1) Civil law (i.e. malpractice suit)
 - a) Contract law
 - b) Tort law
 - (2) Criminal law (i.e. unlicensed dentistry, fraud)
- D) List who may be the subject of a law suit:
 - (1) Initiating Dentist
 - (2) Dental assistant
 - (3) Hygienist
- E) State the purpose of professional liability insurance.

F) Explain who owns the dental record.

2.02 Ethical Considerations

A) Define ethical behavior.

B) Define five ethical concepts that are important to a dental assistant.

- (1) Confidentiality
- (2) Respect for the profession
- (3) Respect for fellow staff and dentist
- (4) Maintain skills and knowledge
- (5) Refrain from services prohibited by state law

2.03 Risk Management Considerations

A) Define risk management.

B) List seven elements of an informed consent:

- (1) Description of treatment
- (2) Alternatives of treatment
- (3) Risk of complications
- (4) Prognosis
- (5) Cost
- (6) Time needed to complete
- (7) Age and mental capacity of patient

C) Explain three ways to obtain informed consent.

- (1) Implied consent
- (2) Verbal consent
- (3) Written consent

D) Describe thirteen ways to manage risk.

- (1) Informed consent
- (2) Review medical history
- (3) Emergency preparedness
- (4) Clear/Realistic patient expectations
- (5) Maintain high level of skill
- (6) Adequate patient safety equipment
- (7) Disclosure of unexpected events
- (8) Comprehensive/accurate treatment record
- (9) Never criticize previous treatment
- (10) Protect privacy of patient (HIPPA)

- (11) Document privacy of patient (HIPPA)
 - (12) Identify responsibility/obligations in the dentist/patient relationship
 - (13) How to respond to a threat of malpractice suit
- E) List six guidelines for managing chart entries as a legal record.
- (1) Keep a separate chart for each patient
 - (2) Correct errors properly
 - (3) Make chart entry during patient visit, do not rely on memory
 - (4) Write legibly, in ink, date and initial each entry
 - (5) The entry should be complete
 - (6) Never change or alter the chart after a problem arises

3.0 Dental Terminology

- I) Number of Tasks to Master = 191
- II) Intended Outcome: Given information about the value of dental terminology, prefixes, word roots and suffixes the student will perform the following tasks with 85% accuracy on the didactic examination.
- III) Tasks:

3.01 Dental Prefixes

A) List and define the following 83 dental prefixes:

- (1) a-; an- without, away from, not
- (2) ab- from, away negative, absent
- (3) ad- increase, toward
- (4) an- without, not
- (5) ana- up, throughout
- (6) ano- up
- (7) anti- opposed to, against, counteracting
- (8) auto- self
- (9) bi- two, twice, double
- (10) bio- life
- (11) brady- slow

(12)	canth-	corner of the eye
(13)	circum-	around
(14)	contra-	against, opposed
(15)	de-	from, lack of
(16)	demi-	half
(17)	dens-	tooth
(18)	dent-	tooth, teeth,
(19)	derma-	skin
(20)	di-	twice double
(21)	dia-	complete, through
(22)	dors-	back
(23)	dys-	bad, difficult, painful
(24)	e-/ec-	out of, from
(25)	ecto-	external, outside
(26)	edem/a-	swelling
(27)	endo-	within
(28)	epi-	over, upper, upon
(29)	erythr/o	red
(30)	eth/m-	sieve
(31)	eti/o	cause
(32)	ex-; ex/o	out away from, completely
(33)	extra-	beyond, outside
(34)	faci/a	face, appearance
(35)	fore-	in front of
(36)	gene-	origin, beget
(37)	hem/a/iblood	
(38)	hepa-	liver
(39)	homo-	same
(40)	hydra-	water
(41)	hyo-	U-shaped, horseshoe-shaped
(42)	hyper-	above, excessive, beyond

(43)	hypo-	less than, below, under
(44)	idio-	peculiar, one's own
(45)	inter-	in the midst, between
(46)	intra-	within
(47)	infra-	beneath, under, inferior
(48)	leuk/o	white
(49)	macro-	large
(50)	mal-	evil, sickness, disorder, bad, poor
(51)	mesi/o	middle
(52)	mucos/a	mucus membrane
(53)	myel/o	spinal cord, bone marrow
(54)	myo-	muscle
(55)	neo-	new
(56)	necr/a	death, dead
(57)	nephr/o	kidney
(58)	neuro-	nerve
(59)	nutri-	feed, nourish
(60)	pan-	all
(61)	para-	besides, beyond
(62)	peri-	around, about
(63)	poly-	many, much
(64)	post-	behind, after
(65)	pre-	before, in front of
(66)	pseudo-	false
(67)	ptery-	a wing
(68)	ptya/l	spit, saliva
(69)	pyo-	pus
(70)	re-	back, again
(71)	retro-	backwards
(72)	sub-	under, beneath, less normal
(73)	super-	above, superior, beyond

(74)	supra-	above, excessive
(75)	syn-	together, union
(76)	tachy-	fast
(77)	tic-	relation, belonging to
(78)	trans-	across, over, beyond, through
(79)	tri-	three, trice, third
(80)	ventro-	body front
(81)	ultra-	beyond, excess
(82)	un-	not
(83)	uni-	one

3.02 Dental Root Words

A) List and define the following 56 dental root words.

(1)	alve/o	alveolus (tooth socket bone)
(2)	amalg	soft mass
(3)	amel/o	tooth, enamel tissue
(4)	angio	vessel
(5)	ankyl	anchored, crooked
(6)	anter/o	before, in front of
(7)	apic/o	apex of the root, tip
(8)	brux/i/o	chew, grind
(9)	bucc	cheek
(10)	calcul	small stone, limestone
(11)	cardi/o	heart
(12)	carcin/o	cancer
(13)	cari/es/o	rottenness, decay
(14)	cephal/o	head
(15)	cheil/o	lip
(16)	clavi/o	a club
(17)	cocci	round, spherical, bacteria
(18)	colli	neck

(19)	coron/acrown	
(20)	cyan/o	blue
(21)	cyst	fluid filled sac
(22)	cyt	cell
(23)	decidu	shedding
(24)	dens/t	tooth
(25)	di	across, separate, apart
(26)	diastem/a	space, interval
(27)	dist/o	farthest from center
(28)	edem/a	swelling
(29)	edentul/o	without teeth
(30)	erythr/o	red
(31)	fluor/o	fluoride
(32)	foss/o	shallow depression
(33)	frene	frenum, connecting tissue
(34)	gingiv	gingival, gum tissue
(35)	gloss/o	tongue
(36)	halit/o	breath
(37)	hem/a/o	blood
(38)	incis/o	incisor tooth
(39)	infer/o	under, below
(40)	labi/o	lip area
(41)	labi/o	lip area
(42)	lacrim/o	tears
(43)	lingu/o	tongue
(44)	lip/i/o	fat
(45)	lith/o	stone
(46)	mandibul/a	lower jaw
(47)	mastic/o	chew
(48)	maxill/a/o	upper jaw
(49)	melan/o	black

(50)	mesi/o	middle, mid-line
(51)	muc/o	tissue lining an orifice
(52)	my/o	muscle
(53)	occlus/o	occlusion, jaw closing
(54)	orth/o	straight, proper order
(55)	stoma	mouth
(56)	tempor/o	temporal bone/joint

3.03 Dental suffixes

A) List and define the following 52 dental suffixes.

(1)	-ac, -ic, -ar	describes or shows relation to
(2)	-al	used to indicate connection with
(3)	-algia/-esia	pain, suffering,
(4)	-ia	state of being
(5)	-ase	enzyme
(6)	-cide	kill
(7)	-cise	cut into
(8)	-cyte	cell
(9)	-dema	swelling
(10)	-ectomy	surgical removal
(11)	-emia	blood
(12)	-eme/-tic/-sis	producing vomiting
(13)	-esthesia	sensation
(14)	-eum	a place where
(15)	-graph/y	picture, recording of a picture
(16)	-gram	graph, picture (used in radiology)
(17)	-iama	medicine, remedy
(18)	-iasis	abnormal condition
(19)	-im	not, in, into
(20)	-ism	state of, condition

(21)	-ist	specialist in, superlative
(22)	-itis	inflammation of
(23)	-ium	small
(24)	-ize	take away, remove
(25)	-lar	describing, about
(26)	-lith	stone
(27)	-logist	specialist
(28)	-logy	study of
(29)	-lysis	destruction
(30)	-nomy	science of
(31)	-oid	like, resembling
(32)	-ology	study of
(33)	-oma	tumor, swelling
(34)	-orrhea	flow, excessive flow
(35)	-otomy	cutting into, incision into
(36)	-osis	abnormal, condition of
(37)	-ous	pertaining to, full of
(38)	-path/o/y	disease
(39)	-phob	fear, dread
(40)	-plasty	surgical correction
(41)	-pnea	breathing
(42)	-rrhage	excessive flow
(43)	-rrhea	excessive
(44)	-scoli/otwisted	
(45)	-scopy	scan, visual exam
(46)	-sis	the act of
(47)	-stalsis	constriction, contraction
(48)	-tic	pertaining to
(49)	-tome	cutting instrument
(50)	-trophy	development, growth, nourishment
(51)	-um	pertaining to

(52) -y act, result of an act

4.0 Preventive Oral Health

- I) Number of Tasks to Master = 53
- II) Intended Outcome: Given information about preventive dentistry, plaque removal, fluoride, and nutrition, the student will be able to perform the following tasks with 85% accuracy on the didactic examination.
- III) Tasks:

4.01 Comprehensive Preventive Dentistry

- A) Explain the goal of preventive dentistry.
- B) Describe the five parts of a comprehensive preventive dentistry program.
 - (1) Nutrition
 - (2) Patient education
 - (3) Plaque control
 - (4) Fluoride therapy
 - (5) Sealants

4.02 Bacterial Plaque

- A) Explain the composition of plaque.
 - (1) Plaque consists of colonies of bacteria, food debris and saliva that attach to the teeth above and below the gumline.
- B) Explain the three steps of plaque formation.
 - (1) Pellicle formation Nutrition
 - (2) Bacteria attach to the pellicle
 - (3) Bacteria multiply and mature

4.03 Dental Calculus

- A) Define dental calculus.
 - (1) Dental calculus is mineralized bacterial plaque. It is a tenacious deposit that forms on the clinical crowns and roots of teeth.
- B) List the two types of dental calculus:

- (1) Supragingival calculus
- (2) Subgingival calculus

4.04 Dental Caries

A) Explain the five stages that must be present for the development of caries.

- (1) Cariogenic food, in the form of carbohydrates, are mixed in with the plaque.
- (2) Plaque and bacteria mix together and the pH of the plaque becomes more acidic.
- (3) Acid formation begins.
- (4) Frequent exposure of tooth to acid begins demineralization of the tooth structure.
- (5) Caries formation.

B) Define cariogenic.

- (1) Producing or promoting tooth decay.

C) List two factors that contribute to dental caries:

- (1) A diet high in cariogenic foods
- (2) Frequent exposure to sucrose

4.05 Periodontal Disease

A) List the main contributing factor in periodontal disease.

- (1) Bacterial plaque

B) List four contributing factors in periodontal disease:

- (1) Inadequate plaque control
- (2) Lack of patient compliance
- (3) Tobacco use
- (4) Systemic diseases

4.06 Patient Education

A) Evaluation of patients.

- (1) Oral health status and habits
- (2) Use appropriate disclosing aides
- (3) Provide individualized education plan
- (4) Evaluate patients' progress

B) List four factors in toothbrush selection:

- (1) Soft bristles
- (2) Easily cleaned
- (3) Replaceable every 3-4 months
- (4) Adapted to individual patient

C) Describe two tooth brushing techniques.

- (1) Bass or sulcular brushing technique
- (2) Rolling or circular brushing technique

D) List three flossing considerations:

- (1) Floss every 24 hours
- (2) Most effectively removes plaque between teeth
- (3) Choice of type depends on individual patient needs

E) Describe five special interdental aids.

- (1) Floss holder
- (2) Floss threader
- (3) Stimulators
- (4) Interproximal brush
- (5) Oral irrigation device

4.07 Fluoride

A) Describe two methods of fluoride delivery, advantages and disadvantages

- (1) Types of Systemic
- (2) Types of Topical

B) Explain the possible dangers of fluoride

- (1) Define dental fluorosis
- (2) Overdose

4.08 Nutrition

- A) Define cariogenic foods.
- B) Describe three effects cariogenic foods have on dental health
 - (1) Promotes plaque formation
 - (2) Promotes tooth decay
 - (3) Promotes periodontal disease
- C) Provide dietary assessment related to dental health.

5.0 Infection Control

- I) Number of Tasks to Master = 200
- II) Intended Outcome: Given information about disease transmission, infectious diseases, universal precautions, the treatment room, cleaning, sterilization, disinfecting, disinfectants, hazards, and instrument sterilization, the student will be able to perform the following tasks with 85% accuracy on the didactic examination.
- III) Tasks:

5.01 Disease Transmission

- A) Define pathogenic.
 - (1) Disease causing microorganisms
- B) Define spore.
 - (1) Highly resistant form of bacteria that are able to remain inactive under unfavorable conditions and can become active when conditions are favorable.
- C) Define five modes of disease transmission in a dental office.
 - (1) Direct transmission
 - (2) Indirect transmission
 - (3) Splatter or splash
 - (4) Airborne transmission
 - (5) Dental water lines
- D) List and explain three methods for airborne transmission:
 - (1) Splatter - large particles, such as tooth fragments and debris are released into the air during cavity preparations.

- (2) Mists – droplets transported via coughing causing respiratory infections.
- (3) Aerosols - microorganisms are found in the aerosols created by ultrasonic scalers, high-speed handpieces and the use of air-water syringes.

E) Define cross-contamination.

- (1) Cross-contamination refers to the spread of microorganisms from one source to another source.

F) List two methods in which cross-contamination can occur:

- (1) Person to person contact
- (2) Person to an inanimate object, and then to another person

G) List three ways to prevent cross-contamination:

- (1) Reduction of pathogenic microorganisms
- (2) Breaking the chain of disease transmission
- (3) Application of universal precautions

5.02 Infectious Diseases

A) List and explain the five types of hepatitis and the route of transmission for each type:

- (1) Hepatitis A - fecal and oral
- (2) Hepatitis B (HBV) - blood, saliva and body fluids
- (3) Hepatitis C - percutaneous, blood and contaminated needles
- (4) Hepatitis D (Delta) – co-infection with hepatitis B, blood, sexual contact and perinatal
- (5) Hepatitis E - fecal and oral, contaminated water

B) Explain five types of individuals at risk for contracting hepatitis B.

- (1) Patients with active or chronic liver disease
- (2) Military populations stationed in countries with a high incidence of hepatitis B
- (3) Infants born to HIV-infected mothers
- (4) IV drug users
- (5) Heterosexually active persons with multiple sexual partners

C) Explain the time interval for administering the hepatitis B vaccine.

- (1) Administered in three doses. Initial dose and then at one and six months

D) List two types of herpes viruses:

- (1) Herpes simplex virus-1
- (2) Herpes simplex virus-2

E) List three reasons to postpone treatment for a patient with an active herpetic lesion:

- (1) Contiguosness of the lesion
- (2) Transfer of the virus to other areas of the face
- (3) Irritation to the lesion from dental procedures can prolong healing

F) Define the term HIV.

- (1) Human immunodeficiency virus

G) List and explain three modes of transmission for HIV:

- (1) Perinatal - transmission across the placenta, during delivery or breast-feeding
- (2) Sexual contact - heterosexual or homosexual relations
- (3) IV drug users - shared or contaminated needles

H) List four other diseases of concern to dental health care workers:

- (1) Tuberculosis
- (2) Tetanus
- (3) Legionnaires'
- (4) Measles

5.03 Prevention of Disease Transmission

A) Define the four factors of disease transmission.

- (1) Virulence
- (2) Pathogenic organisms must be present in quantities and concentration sufficient to overtake the body defenses
- (3) A susceptible host must be present, one who cannot resist infection
- (4) Pathogens must have means of entering the body (portal of entry)

B) Explain eight methods used to prevent disease transmission.

- (1) Eliminating or controlling the organisms found in the oral cavity by brushing teeth or rinsing with an antiseptic mouthwash
- (2) Interruption of transmission of organisms by the use of rubber dam and high-speed evacuation system
- (3) Wearing protective eyewear, gloves and mask(universal precautions)

- (4) Sterilization of dental instruments by autoclaving
- (5) Use of disposables when possible
- (6) Immunization of dental personnel
- (7) Avoid procedures on patients with lesions of communicable diseases
- (8) Properly store all instruments and materials

5.04 OSHA Bloodborne Pathogens Standard

A) List the components required the OSHA Bloodborne Pathogen Standards:

- (1) Exposure control plan
- (2) Standard and Universal Precaution
- (3) Categorization of employees
- (4) Post exposure management
- (5) Employee Training
- (6) Hepatitis B Immunization

B) List OSHA Bloodborne Pathogens Standard Training Requirements:

- (1) Epidemiology, modes of transmission, and prevention of HBV and HIV
- (2) Risks to the fetus from HBV and HIV
- (3) Location and proper use of all protective equipment
- (4) Proper work practices using Universal Precautions
- (5) Meaning of color codes, biohazard symbol, and precautions to following handling infectious waste
- (6) Procedures to follow if needlestick or other injury occurs

C) Management of an Exposure Incident

- (1) Document routes of exposure
- (2) Document Source
- (3) Request Blood Screening of Source
- (4) Advise Employee to be tested
- (5) Provide prophylaxis treatment
- (6) Provide appropriate counseling
- (7) Evaluate post incident illness

5.05 Universal Precautions

A) Define universal precautions.

- (1) The same infection control procedure for any dental procedure must be used for ALL patients. All human blood and body fluids are treated as contaminated.

B) List and explain seven appropriate personal protective guidelines:

- (1) Uniform tops should be closed at the neck, disposable or easily laundered and have long-sleeves with fitted cuffs. Pants and socks should cover the legs and ankles.
- (2) Clinic attire must not be worn in the staff lounge or outside the dental office. Clothing must be changed daily.
- (3) Hair should be worn off the shoulders and away from the face. Facial hair should be covered with a face mask or shield.
- (4) Face masks must have a high bacterial filtration efficiency rate. Masks should be changed after each patient or after becoming splattered and/or saturated.
- (5) Protective eyewear should have wide side shields to protect the area around the eyes, and shatterproof lenses that are made of sturdy plastic.
- (6) Gloves should be impermeable to saliva, blood and bacteria and fit snug over the cuffs of the uniform.
- (7) Other barrier items such as dental dams

C) Describe the six guidelines for use of gloves.

- (1) Gloves must be worn by all dental staff during the patient's treatment
- (2) Torn or damaged gloves must be replaced immediately
- (3) Do not wear jewelry under gloves
- (4) Change gloves frequently. with each new patient or approximately every hour
- (5) Contaminated gloves should be removed before leaving the operatory during patient treatment
- (6) Hands must be washed after glove removal and before re-gloving

D) List three types of gloves worn:

- (1) Overgloves
- (2) Utility gloves
- (3) Non-sterile latex or non-latex

E) List three principles of effective handwashing:

- (1) Reduction of the bacterial flora on the skin
- (2) Removal of surface dirt and loosened debris
- (3) Provide disinfection with a long-acting antiseptic

F) List the seven steps for washing and drying of hands:

- (1) Remove all jewelry
- (2) Wet hands with warm water
- (3) Apply an ample amount of antibacterial liquid soap
- (4) Vigorously rub hands together under a stream of water
- (5) Rub together for a minimum of 15 seconds
- (6) Rinse hands with cool water
- (7) Using a paper towel, thoroughly dry your hands

G) State three guidelines for handling contaminated laundry.

- (1) Protective clothing should be laundered in the office and universal precautions are followed when handling the clothing
- (2) Disposable gowns are discarded daily, more often if visibly soiled
- (3) Contaminated clothing that is removed from the office must be in a leak-proof bag that is labeled "Biohazard"

5.06 Management of Hazardous Materials

A) List three organizations that regulate the profession of dentistry:

- (1) Occupational Safety and Health Administration (OSHA)
- (2) Centers for Disease Control (CDC)

- (3) Environmental Protection Agency (EPA)
- B) Define four classifications of waste.
 - (1) General waste
 - (2) Hazardous waste
 - (3) Contaminated waste
 - (4) Infectious or regulated waste
- C) List four methods for disposal of waste:
 - (1) Gloves, mask and barriers contaminated with body fluids or blood should be discarded in impermeable plastic bags as general waste
 - (2) Sharps should be placed in a puncture resistant, leak proof container and labeled as biohazard
 - (3) Blood, blood soaked materials, tissue and teeth should be placed in leakproof containers, labeled biohazard and disposed of according to state guidelines for infectious waste
 - (4) Proper disposal of liquid chemicals or solid chemicals may vary with local and state waste management agencies. Check with the local agencies in your area
- D) Explain the five parts of the OSHA hazard communication standard.
 - (1) Written
 - (2) Chemical inventory
 - (3) MSDS sheets
 - (4) Container labeling
 - (5) Employee training
- E) General protection against chemical hazards
 - (1) Hand and eye protection
 - (2) Ventilation
 - (3) Handling and Storage
 - (4) Disposal

5.07 Cleaning /Pre-cleaning

- A) Define cleaning/pre-cleaning.
 - (1) Initial removal of debris and reduction of bioburden
- B) List three appropriate methods for cleaning instruments prior to sterilization:
 - (1) Ultrasonic cleaning
 - (2) Soaking instruments in a disinfectant solution
 - (3) Automatic washers
- C) Explain three advantages of an ultrasonic cleaner.

- (1) Reduced risk to operator from contact with contaminated instruments
- (2) Penetration into difficult areas of instruments where brushes cannot reach
- (3) Improved effectiveness in removing debris and blood from instruments

D) List the four steps for cleaning instruments manually:

- (1) Wear heavy duty gloves, mask and protective eyewear. Dismantle instruments if parts are detachable
- (2) Use detergent and scrub instruments with a brush under running water
- (3) Brush away from the body and avoid splashing the surrounding area
- (4) Rinse instruments thoroughly and dry on paper towels

5.08 Disinfection

A) Define disinfection.

- (1) Killing or inhibiting pathogens by chemical means. Spores are not killed by disinfection

B) Define the term disinfectant.

- (1) Chemicals that are applied to inanimate objects (countertops) that cannot be sterilized

C) State the three types of disinfectants and their biocidal activity.

- (1) High level – inactivates all forms of bacteria, fungi, spores and viruses
- (2) Intermediate level – inactivates all forms of microorganisms except spores
- (3) Low level – inactivates vegetative bacteria and certain viruses, but does not destroy spores, tubercle bacilli or non-lipid viruses

D) List five properties of an ideal disinfectant:

- (1) Broad spectrum
- (2) Nontoxic
- (3) Easy to use
- (4) Fast acting
- (5) Economical

E) Explain the four recommended chemical disinfectants.

- (1) Chlorines. Sodium hypochlorite is unstable, use distilled water to improve stability. Economical, harmful to the eyes and skin
- (2) Glutaraldehydes. Solution is activated when the two containers are mixed. Not used as a surface disinfectant, toxic fumes. Caustic to skin and eye
- (3) Iodophores. Broad spectrum antimicrobial, hard water inactivates iodophores. Widely used for surgical scrubs, liquid soaps
- (4) Combination phenolics. Used as surface disinfectants. Broad spectrum with residual biocidal activity

5.09 Sterilization

A) Define sterilization.

- (1) A process (usually by heat) by which all forms of life (including spores) are completely destroyed

B) Explain the four approved methods for sterilization.

- (1) Moist heat (or steam under pressure) – Sterilization is achieved by the action of heat and moisture. Pressure is used to reach high temperatures
- (2) Dry heat – Sterilization is achieved by heat conducted from the exterior surface to the interior of the object
- (3) Chemical vapor steam – A combination of chemicals is heated under pressure which produce a gas-sterilizing agent
- (4) Ethylene oxide – Commonly used in hospitals. Gaseous sterilization using ethylene oxide

C) List two items that can be sterilized using dry heat:

- (1) Metal instruments in containers
- (2) Instruments that may corrode or rust if exposed to moisture

D) Explain two advantages for using steam under pressure.

- (1) All spores, microorganisms and viruses are destroyed quickly
- (2) Economical method for sterilizing instruments

E) List the temperatures for dry heat, steam under pressure and chemical vapor:

- (1) Dry heat – 320° F for two hours. 340° F for one hour
- (2) Steam under pressure – 250° F at 15 pounds of pressure for 15 minutes. 30 minutes for heavy or large loads

- (3) Chemical vapor – 260° to 270° F at 20 to 40 pounds of pressure. Minimum of 20 minutes after the desired temperature and pressure is reached

F) List two reasons for spore testing:

- (1) To ensure proper sterilization
- (2) To verify proper function of the sterilizer

G) Explain the frequency of spore testing.

- (1) Weekly testing is recommended

H) Explain Heat Process Monitoring.

5.10 Instrument Processing

A) List the seven steps for Instrument Processing:

- (1) Transport
- (2) Cleaning
- (3) Packaging
- (4) Sterilization
- (5) Storage
- (6) Delivery
- (7) Quality assurance

5.11 Treatment Room

A) List six features of an optimal treatment room:

- (1) Floor covering is easy to clean. No carpeting
- (2) Stools and dental chairs have a smooth surface that is easily disinfected
- (3) Water faucets should be electronic or foot-operated
- (4) Dental chairs are foot operated
- (5) Hoses are straight and removable
- (6) Syringes and handpieces are autoclavable

B) List four objects that require barrier protection:

- (1) Dental light handles
- (2) Head rest and dental chair
- (3) Air/water syringe
- (4) Saliva ejector and HVE handles

C) Explain the classification of surface categories for inanimate objects.

- (1) Critical. Penetrates soft tissue or bone. Example: Needles, dental instruments. *Sterilize or dispose*
- (2) Semi-critical. Touch intact mucous membranes and oral fluids but does not penetrate. Example: Ultrasonic handpiece, probe. *Sterilize or high level disinfectant*
- (3) Non-critical. Does not touch mucous membranes. *Intermediate level of disinfection*
- (4) Environmental surfaces. No contact with patient. *Intermediate to low level disinfection*

D) List six steps in cleaning and preparing the treatment room:

- (1) Wear heavy-duty gloves and mask
- (2) Flush handpieces
- (3) Select appropriate disinfectant and prepare according to manufacturer
- (4) Clean the surfaces with gauze soaked in a precleaning/disinfectant
- (5) Scrub the disinfectant over the surface
- (6) Wipe with disinfectant and leave the surfaces wet for manufacturers recommended time

Select appropriate disinfectant and prepare according to manufacturer.

5.12 Dental Unit Water Lines

A) List five features of an optimal treatment room:

- (1) Use water that meets EPA standards for drinking water
- (2) Consult dental manufacturer for methods to maintain quality of water
- (3) Follow manufacturer recommendations for monitoring quality of water
- (4) After each patient discharge air/water 20-30 seconds
- (5) Follow manufacturer recommendations for maintenance schedule

B) Methods to Reduce Bacterial Contamination of Dental Unit Waterlines

- (1) Flush water lines for several minutes each morning
- (2) Use self contained water system
- (3) Use periodic or continuous chemical germicides
- (4) Use sterile water for surgery
- (5) Purge water from surgery lines at end of day
- (6) Use microfilm cartridges
- (7) Use current techniques and technology
- (8) Follow manufacturer recommendations

6.0 Patient Management

- I) Number of Tasks to Master = 66
- II) Intended Outcome: Given information about utilizing effective communication skills, non-verbal communication, obtaining information and managing patient behavior the student will be able to answer 85% of the questions on the didactic exam.
- III) Tasks:

6.01 Utilizing Effective Communication Skills

A) List 10 alternative terms to use in effective communication:

- (1) Pull a tooth/remove a tooth
- (2) Shot, needle/injection
- (3) Pain, hurt/ discomfort
- (4) Plates, false teeth/dentures
- (5) Spit/rinse your mouth
- (6) Drugs/medication
- (7) Filling/restoration
- (8) Drill/prepare or handpiece
- (9) Yeah/yes
- (10) Cap/crown

B) List three rules of etiquette:

- (1) Do not use nicknames or terms of endearment in an office setting
- (2) Compliment and praise
- (3) Avoid the subjects of politics, religion, gender, ethnic, and off-color jokes

6.02 Non-Verbal Communication

A) Identify four key steps for improving telephone communications.

- (1) Smile
- (2) Identify the office, yourself, and ask, "How may I help you?"
- (3) Listen and be attentive
- (4) Take notes

B) Describe seven items important to non-verbal communication.

- (1) Good grooming versus bad grooming
- (2) Professional hair styles

- (3) The use of fragrances and deodorants
- (4) The appearance of hands and nails
- (5) The effect of oral hygiene
- (6) Professional attire
- (7) Make-up

C) Identify two effects of body language and posture.

- (1) Slouching
- (2) Crossed arms

D) List two examples of patient non-verbal cues:

- (1) Facial expressions
- (2) Body language

6.03 Greet the Patient

A) List eight items included in welcoming the patient as a guest:

- (1) Greet within 30 seconds
- (2) Survey the reception area
- (3) Sign in log
- (4) Review the schedule
- (5) Initiate the patient orientation
- (6) Establish a relationship
- (7) Use the patient's name
- (8) Take notes

B) List two areas of common courtesy and office etiquette that should be used when talking on the phone:

- (1) Common courtesy
- (2) Say please and thank you

C) Describe three steps in introductions:

- (1) Introduce sel.
- (2) Identify others by name and title
- (3) Maintain a schedule

6.04 Obtaining Information

A) List two steps in obtaining information from a telephone call:

- (1) Record all information on chart
- (2) Record information in ink and initial

B) List two patient forms to be completed by the patient before treatment:

- (1) Patient registration
- (2) Medical/dental history

6.05 Managing Patient Behavior

A) Identify six patient rights.

- (1) To be treated without discrimination
- (2) To be informed about treatment
- (3) To be informed about fees
- (4) To confidentiality
- (5) To be taught how to maintain dental health
- (6) To refuse treatment

B) Describe two ways to comfort the *anxious* patient.

- (1) Validate feelings
- (2) Accommodate patients' concerns

C) Define the difference between the *anxious* and the *phobic* patient.

- (1) Anxious – normal with enhanced feelings of concern
- (2) Phobic – irrational fears

D) List two methods of treating the *phobic* patient:

- (1) Behavior modification
- (2) Hospital dentistry – general anesthesia

E) List five steps to diffuse patient anger:

- (1) Let the patient release anger
- (2) Do not second-guess
- (3) Do not respond until the patient has fully vented
- (4) Use the three F's: Feel, Felt, Found
- (5) Avoid the urge to argue

F) Identify four special patient management situations.

- (1) Elderly
- (2) Children
- (3) Pregnant
- (4) Mentally/physically challenged

7.0 Anatomy

- I) Number of Tasks to Master = 80
- II) Intended Outcome: Given information about head and neck anatomy, oral anatomy, and dental anatomy, the student will be able to perform 85% of the following tasks with accuracy on the didactic examination.
- III) Tasks:

7.01 Head and Neck Anatomy

- A) Locate and mark five bones or bony areas of the face and skull on the model or diagram provided.
 - (1) Calvarium(frontal, parietal, occipital bones)
 - (2) Zygoma
 - (3) Maxilla
 - (4) Mandible
 - (5) Nasal bones
- B) Locate seven landmarks of the skull on the diagram or model provided.
 - (1) External auditory meatus
 - (2) Nasal fossae
 - (3) Orbits of the eye
 - (4) Styloid process
 - (5) Mental foramen
 - (6) Mandibular foramen
 - (7) TMJ- temporal mandibular joint
- C) Locate four sinuses on the model or diagram provided.
 - (1) Maxillary
 - (2) Ethmoid air cells
 - (3) Frontal
 - (4) Sphenoid
- D) Locate and mark eight muscles of mastication and facial expression
 - (1) Buccinator
 - (2) External pterygoid
 - (3) Internal pterygoid
 - (4) Masseter
 - (5) Mentalis
 - (6) Orbicularis oris

- (7) Temporal
- (8) Zygomatic major

E) Identify the nerves that supply the oral cavity

- (1) Maxillary
- (2) Nasopalatine
- (3) Anterior palatine
- (4) Anterior superior alveolar
- (5) Middle superior alveolar
- (6) Posterior superior alveolar
- (7) Buccal
- (8) Mandibular
- (9) Lingual
- (10) Mental
- (11) Incisive

7.02 Oral Anatomy

A) Locate and label 18 structures of the oral cavity.

- (1) Maxillary arch
- (2) Mandibular arch
- (3) Lips
- (4) Mucosa, buccal or labial
- (5) The dental alveolus
- (6) Gingiva, attached and free
- (7) Floor of the mouth
- (8) Hard palate
- (9) Soft palate
- (10) Tongue
- (11) Tonsillar pillars
- (12) Tonsils
- (13) Pharyngeal walls
- (14) Retromolar pad
- (15) Maxillary tuberosity
- (16) Vestibules, buccal or labial
- (17) Frenum
- (18) Teeth

B) Locate three of the main salivary glands.

- (1) Parotid gland
- (2) Sublingual gland
- (3) Submandibular gland

C) Locate and label three structures of the gingiva.

- (1) Gingival sulcus
- (2) Gingival papilla
- (3) Gingival margin

7.03 Dental Anatomy

A) Define the following six dental anatomy terms.

- (1) Primary dentition
- (2) Permanent dentition
- (3) Mixed dentition
- (4) Contact
- (5) Contour
- (6) Occlusion

B) Identify the four kinds of teeth.

C) Locate and label the three parts of a tooth.

- (1) Crown
- (2) Root
- (3) Neck

D) Locate and label five tissues of a tooth.

- (1) Enamel
- (2) Dentin
- (3) Pulp
- (4) Cementum
- (5) Periodontal ligament

E) Locate and label the six maxillary anterior teeth.

- (1) Maxillary central incisors (2)
- (2) Maxillary lateral incisors (2)
- (3) Maxillary canines (2)

F) Locate and identify the 10 maxillary posterior teeth.

- (1) Maxillary first premolar (2)
- (2) Maxillary second premolar (2)
- (3) Maxillary first molar (2)
- (4) Maxillary second molar (2)
- (5) Maxillary third molar (2)

G) Locate and identify the six mandibular anterior teeth.

- (1) Mandibular central incisors (2)
- (2) Mandibular lateral incisors (2)
- (3) Mandibular canine (2)

H) Locate and identify the 10 mandibular anterior teeth.

- (1) Mandibular first premolar (2)
- (2) Mandibular second premolar (2)
- (3) Mandibular first molar (2)
- (4) Mandibular second molar (2)
- (5) Mandibular third molar (2)

I) Locate the six surfaces of a tooth.

- (1) Mesial
- (2) Occlusal
- (3) Distal
- (4) Buccal
- (5) Lingual
- (6) Facial

8.0 Dental Equipment

I) Number of Tasks to Master = 50

II) Intended Outcome: Given information about equipment identification and equipment uses, the student will be able to perform 85% of the following tasks the necessary information, instruction, and equipment the student will be able to perform 85% of the following tasks with accuracy on the didactic examination.

III) Tasks:

8.01 Equipment Identification

A) Describe five pieces of lab equipment.

- (1) Lathe
- (2) Handpiece/lab engine
- (3) Model trimmer
- (4) Vacuum adapter “The Machine”
- (5) Vibrator

B) Describe 12 pieces of equipment found in the treatment room.

- (1) Patient chair
- (2) Stools – Doctor and assistant (show footrest, indicate differences)

- (3) Treatment light
- (4) Cart/console
- (5) Handpieces (High speed/low speed)
- (6) High velocity evacuation (HVE)
- (7) Saliva ejector
- (8) Curing light
- (9) Air-water syringe
- (10) Rheostat/foot control
- (11) Computer
- (12) Amalgamator/triturator

C) Describe three items found in the sterile area.

- (1) Ultrasonic instrument cleaner
- (2) Cold disinfectant/sterilant container
- (3) Autoclaves/sterilization equipment

D) Describe five items in the radiographic area.

- (1) Control panel
- (2) Conventional or intraoral x-ray head
- (3) Lead apron-thyroid x-ray head
- (4) Automatic processor-daylight
- (5) Extraoral equipment

8.02 Equipment Uses

A) Give the uses of five lab equipment items.

- (1) Lathe – polishes and grinds appliances
- (2) Handpiece/lab engine – trims and smooth smaller items outside the mouth
- (3) Model trimmer – trims plaster and stone models
- (4) Vacuum adapter – heats and adapts a variety of plastics to models i.e. bleaching trays, mouth guards
- (5) Vibrator – used in pouring models to remove bubbles from mix and aid in pouring

B) Give the uses of 12 treatment room items of equipment.

- (1) Patient chair – Provides support and supine-seating for the patient
- (2) Stools – Doctor stool – Provides adjustable seating for the operator while performing dental treatment
Assistant stool – Provides adjustable seating for the assistant while assisting in dental treatment
- (3) Treatment light – Provides illumination during dental treatment

- (4) Cart/console – Provides support supplies and easy access to equipment
- (5) Handpieces – Rotary instruments that are used intraorally to cut and polish. (See dental instruments)
- (6) High velocity evacuation – Assistant controlled device that removes fluids and reduces aerosols. (Show tips)
- (7) Saliva ejector – Low volume device for removing oral fluids. (Show tips)
- (8) Curing light – Sets selected acrylic materials
- (9) Air/water syringe – Provides air/water spray
- (10) Rheostat-foot control – Controls the rotary handpieces
- (11) Computer – Used chairside to record and transmit data
- (12) Amalgamator/triturator – Mixes amalgam filling material

C) Give the uses for three sterile area items.

- (1) Ultrasonic instrument cleaner – Removes debris from contaminated instruments
- (2) Cold disinfectant/sterilant container – Liquid for non-autoclavable items
- (3) Autoclaves/sterilization equipment – Sterilizes equipment and instruments

D) Give the uses of five pieces of radiographic equipment.

- (1) Control panel – Controls x-ray production
- (2) Conventional or intraoral x-ray head – Produces and directs x-rays
- (3) Lead apron – Provides patient protection during radiographs
- (4) Automatic processor – Processes x-ray film
- (5) Extraoral x-ray equipment – Takes x-rays outside the mouth

9.0 Dental Instruments and Procedures

- I) Number of tasks to master = 121
- II) Intended Outcome: Given information about hand/rotary instruments and dental procedures, the student will be able to perform 85% of the following tasks with accuracy on the didactic examination.
- III) Tasks:

9.01 Hand Instruments

- A) Define the term “Hand Instrument”.
- B) Describe four components of hand instruments.

- (1) Handle/shaft
- (2) Shank
- (3) Blade
- (4) Double-ended instruments

C) Describe six basic tray set-up instruments.

- (1) Mouth mirror
- (2) Explorer
- (3) Cotton pliers
- (4) Saliva ejector/high-volume evacuator
- (5) 3-way syringe tip
- (6) 2 x 2

D) Describe 17 restorative instruments.

- (1) Excavator/spoon excavator
- (2) Discoid-cleoid carver
- (3) Hollenback carver
- (4) Amalgam well
- (5) Amalgam carrier
- (6) Amalgam condenser/plugger
- (7) Plastic composite instrument
- (8) Burnisher
- (9) Mixing spatula
- (10) Matrix band
- (11) Tofflemire/matrix retainer
- (12) Wedge
- (13) Articulating paper
- (14) Articulating paper forceps
- (15) Cord packer
- (16) Hand cutting instruments
- (17) Decay locator

E) Describe six instruments of a rubber dam procedure.

- (1) Dental dam material
- (2) Dental dam frame
- (3) Dental dam hole punch
- (4) Dental dam clamp forceps
- (5) Dental dam clamps
- (6) Floss

F) Discuss five periodontal instruments.

- (1) Periodontal probe
- (2) Curette
- (3) Slimline ultrasonic scaler

- (4) Scalers
- (5) Periodontal knives

G) Describe 15 endodontic instruments.

- (1) Gates glidden
- (2) Barbed broach
- (3) Endodontic files
- (4) Endodontic syringe
- (5) Paper points
- (6) Gutta-percha
- (7) Lentulo spirals
- (8) Endodontic spreader
- (9) Endodontic explorer
- (10) Endodontic condenser
- (11) Endodontic excavator
- (12) Millimeter measure
- (13) Rubber stoppers
- (14) Pulp tester
- (15) Apex locator

H) Describe 16 oral surgery instruments.

- (1) Elevator
- (2) Forceps
- (3) Surgical curette
- (4) Rongeur
- (5) Bone file
- (6) Bard-Parker handle
- (7) Blade
- (8) Hemostat
- (9) Needle holder
- (10) Surgical scissors
- (11) Tissue retractors
- (12) Surgical aspirator
- (13) Sutures
- (14) Bite blocks/mouth prop
- (15) Surgical chisel and mallet
- (16) Surgical hand piece/burs

9.02 Rotary Instruments

A) Describe five uses of rotary instruments.

- (1) Cavity preparations
- (2) Removing defective restorations
- (3) Crown preparations

- (4) Polishing teeth
- (5) Polishing and finishing restorations

B) Describe three parts of a dental bur.

- (1) Shank
- (2) Neck
- (3) Head

C) Identify three types of dental burs.

- (1) Carbide
- (2) Diamond stones
- (3) Steel burs

D) Discuss eight sizes and shapes of bur heads.

- (1) Round
- (2) Inverted cone
- (3) Fissures
- (4) Points
- (5) Stones
- (6) Mandrel
- (7) Rubber wheel
- (8) Rubber cup

E) Describe four styles of dental handpieces.

- (1) High-speed
- (2) Straight low-speed
 - (a) Contra-angle
 - (b) Prophy-angle

F) Discuss handpiece placement and removal.

G) Describe dental handpiece maintenance.

H) Discuss dental handpiece sterilization techniques.

9.03 Dental Procedures

A) List eight common dental procedures:

- (1) Exam
- (2) Prophylaxis, non-surgical periodontal therapy
- (3) Amalgam
- (4) Composite
- (5) Simple extraction

- (6) Endodontic
- (7) Crown and bridge preparation
- (8) Crown and bridge cementation

B) List tray armamentarium (tray setup)

- (1) Exam
- (2) Prophylaxis, non –surgical periodontal therapy
- (3) Amalgam restorations
- (4) Composite restorations
- (5) Extractions
- (6) Surgical procedures
- (7) Dental dam
- (8) Endodontic therapy
- (9) Crown and bridge preparation
- (10) Crown and bridge cementation
- (11) Anesthetics
- (12) Bleaching
- (13) Desensitization of the teeth
- (14) Removable prosthodontics
- (15) Preventive procedures
- (16) Impressions
- (17) Orthodontics
- (18) Occlusal adjustments

10.0 Clinical Records

- I) Number of Tasks to Master = 84
- II) Intended Outcome: Given information about medical/dental histories, recording dental treatment and dental/radiographic chartings, the student will be able to perform 85% of the following tasks on the didactic examination.
- III) Tasks:

10.01 Medical History

A) List six purposes for obtaining a medical history from every patient:

- (1) Provides information relevant to the etiology and diagnosis of oral conditions.
- (2) Used in treatment planning.
- (3) Reveals conditions, diseases, and drug therapy or reactions that may change treatment.
- (4) Provides insight into the emotional and/or psychological factors and attitudes that may affect patient care.

- (5) Provides baseline documentation for comparison at future appointments.
 - (6) Provides a basis for legal evidence should treatment ever be called into question.
- B) Describe six conditions that may limit the ability of dental personnel to gather required information from patients.
- (1) Some patients either cannot, or choose not, to provide correct information when answering questions.
 - (2) Language barriers or comprehension may limit the information obtained.
 - (3) If there is a lack of privacy where the information is requested, the patient may be less than honest.
 - (4) If the patient does not see the relevance between certain diseases or conditions and dental treatment, information may be withheld.
 - (5) Medical conditions may be embarrassing to report.
 - (6) The patient may be fearful of having dental treatment refused.
- C) List five factors that must be explained to the patient:
- (1) The need for obtaining and keeping an up-to-date medical history.
 - (2) Assurance that the information obtained will be kept in strict confidence.
 - (3) The relationship between general health and oral health.
 - (4) The relationship between medical health and dental care.
 - (5) The importance of following instructions on pre-medications, preventive dental care, and regular medical and dental care.
- D) List the five components of the medical history that must be verified:
- (1) Recordings must be made in ink
 - (2) Accuracy of all dates
 - (3) Confirm all information
 - (4) Medical alert codes
 - (5) Patient signature verifying accuracy of all information

10.02 Dental History

- A) List eight components of the dental history required:
- (1) Any immediate problem, discomfort, or pain reported by the patient
 - (2) Information about previous restorative, preventive and specialty dental care

- (3) Attitudes regarding oral health
- (4) Information about personal daily oral care
- (5) Anesthetic history
- (6) Medical and dental radiation history and current medications
- (7) History of oral or facial injuries, past medical and dental procedures
- (8) Oral habits

10.03 Dental Charting and the Dental Exam

A) List the five parts of the dental exam:

- (1) Radiographs
- (2) Diagnostic models
- (3) Oral examination
- (4) Periodontal examination
- (5) Examination of the teeth

B) State six purposes of the dental charting.

- (1) Provides a graphic representation of existing conditions
- (2) An assessment tool used to develop a patient treatment plan
- (3) Used during treatment to guide procedures performed
- (4) Evaluate treatment by comparing initial data with follow-up findings
- (5) Provides realistic evidence for legal documentation
- (6) Used in forensic investigations and/or identification

C) Define Black's classification of cavities

- (1) Class I
- (2) Class II
- (3) Class III
- (4) Class IV
- (5) Class V
- (6) Class VI

D) Describe two types of tooth diagrams

- (1) Anatomical
- (2) Geometric.

E) Describe the Universal numbering system for teeth.

- (1) Universal
- (2) Palmer

- (3) FDI/ISO

F) Chart seven dental conditions that are evaluated clinically by the dentist or dental hygienist and recorded on the dental chart.

- (1) Missing teeth
- (2) Teeth indicated for extraction
- (3) Occlusal caries
- (4) Malpositioned teeth
- (5) Existing restorations.(amalgam, composite, gold)
- (6) Sealants
- (7) Appliances

G) Chart 11 dental conditions to be charted from radiographs.

- (1) Missing teeth
- (2) Unerupted teeth
- (3) Impacted teeth
- (4) Endodontic restorations
- (5) Periapical abscesses
- (6) Retained primary teeth
- (7) Retained root tips
- (8) Proximal carious lesions
- (9) Recurrent carious lesions
- (10) Bone loss
- (11) Other deviations from normal

H) State six tooth surfaces where periodontal pocket readings are recorded on the periodontal chart.

- (1) Distofacial
- (2) Facial
- (3) Mesiofacial
- (4) Distolingual
- (5) Lingual
- (6) Mesiolingual

10.04 Recording Dental Treatment

A) Record all pertinent information

- (1) Record in ink
- (2) One entry per line
- (3) Anesthetic used
- (4) Tooth treated

- (5) Types of materials used
- (6) Clear and concise
- (7) Sign/Initial and date
- (8) Proper correction methods

11.0 Oral Pathology

- I) Number of Tasks to Master = 68
- II) Intended Outcome: Given information about dental caries; attrition, abrasion, and soft tissue pathology the student will be able to perform 85% of the following tasks with accuracy on the didactic examination.
- III) Tasks:

11.01 Dental Caries

- A) Define caries.
 - (1) An abnormal condition of a tooth or bone characterized by decay, disintegration and destruction of the structure
- B) Identify the primary cause of caries.
 - (1) Bacterial plaque (*Streptococcus mutans*)
- C) List four contributing factors of caries:
 - (1) Diet
 - (2) Oral hygiene
 - (3) Immune system
 - (4) Personal habits
- D) Identify stages of caries development.
 - (1) Demineralization
 - (2) Caries
 - (a) Rampant
 - (b) Recurrent
 - (c) Root caries
- E) List four subcomponents of personal habits that are contributing factors of caries:
 - (1) Tobacco
 - (2) Alcohol

- (3) Sugared soda drinks
- (4) Gum/candy

F) List five common locations for caries:

- (1) Pit and fissure
- (2) Smooth surface
- (3) Interproximal
- (4) Root surface/cervical

11.02 Periodontal Disease

A) Define or list the periodontal diseases.

- (1) Gingivitis
- (2) Periodontitis

B) Sign and Symptoms.

- (1) Red, swollen or tender gingival
- (2) Bleeding gingiva
- (3) Loose teeth
- (4) Pain or pressure when chewing
- (5) Pus

C) Define Necrotizing Ulcerative Periodontitis.

D) Define Periodontal pocket.

- (1) The disease process causes the normal gingival sulcus to become deeper than normal forming a pocket.

11.03 Attrition, Abrasion and Erosion

A) Define attrition

- (1) The normal wearing away of tooth structure

B) Identify the primary cause of accelerated attrition.

- (1) Parafunctional habits

C) Identify two parafunctional habits.

- (1) Clenching/bruxism

- (2) Fibrous foods/chewing tobacco

D) List three contributing factors of attrition:

- (1) Abrasive dentifrice
- (2) Work environment
- (3) Ice chewing

E) Define abrasion.

- (1) The abnormal wearing away of tooth structure

F) List the main cause of abrasion:

- (1) Repetitive mechanical habits (i.e. improper toothbrushing)

G) Identify the primary cause of erosion.

- (1) Repetitive and prolonged acid contact

H) List two situations where acid is in prolonged contact with teeth:

- (1) Bulimia
- (2) Citrus habits

11.04 Soft Tissue Pathology

A) Describe four conditions of the tongue.

- (1) Black hairy tongue
- (2) Geographic tongue
- (3) Fissured tongue
- (4) Glossitis

B) Describe five white lesions of the mouth.

- (1) Candidiasis (thrush)
- (2) Benign hyperkeratosis (leukoplakia or white patches)
- (3) Stomatitis nicotina (irritation from smoking)
- (4) Chemical burn (aspirin burns)
- (5) Trauma

C) Describe three oral lesions of the mouth.

- (1) Secondary herpetic lesion (cold sore)
- (2) Aphthous ulcer (canker sore)
- (3) Mucocele

D) Define seven conditions of the mouth.

- (1) Torus (exostosis)
- (2) Irritation fibroma
- (3) Dry mouth
- (4) Cyst
- (5) Papilloma
- (6) Abscess
- (7) Cheilitis

E) Define 7 abnormalities (developmental) of the mouth.

- (1) Cleft palate/lip
- (2) Super numerary
- (3) Enamel displasia
- (4) Ankyloglossia
- (5) Macro/Micro dontia
- (6) Anelogenesis imperfect
- (7) Arkylos tooth/impaction

F) Other

- (1) Piercings
- (2) Drug abuse

12.0 Emergency Care

- I) Number of Tasks to Master = 60
- II) Intended Outcome: Given information about medical and dental emergency care, the student will be able to perform 85% of the following tasks on the didactic examination.
- III) Tasks:

12.01 Medical Emergency Care

A) List four vital signs:

- (1) Temperature
- (2) Blood pressure
- (3) Pulse
- (4) Respiration

B) List four aspects associated with blood pressure:

- (1) Normal range for blood pressure. (90-140/60-90)
- (2) Recommended technique for obtaining blood pressure
- (3) Systolic and diastolic

- (4) Health risks associated with high or low blood pressure and its relation to dentistry

C) List two aspects of heart rate (pulse) and rhythm:

- (1) Normal range for adult. (60-100)
- (2) Methods for obtaining a reading

D) List three aspects of respiratory rate:

- (1) Normal range for adult.(12-20)
- (2) Methods for obtaining a reading
- (3) Hyperventilation

E) List two methods of measuring temperature:

- (1) Oral
- (2) Tympanic

F) Describe five ways to prevent emergencies.

- (1) Obtain current and complete medical/dental history
- (2) All dental personnel competent in CPR, Heimlich maneuver, and obtaining vital signs
- (3) Assess patient during treatment
- (4) Have an office emergency plan
- (5) Have emergency equipment ready

G) Describe the four parts of an emergency preparedness plan.

- (1) Assigned roles
- (2) Routine drills
- (3) Emergency telephone numbers
- (4) Emergency supplies

H) List four signs of an impending emergency:

- (1) Change in patient breathing
- (2) Change in patient level of consciousness
- (3) Change in patient skin color
- (4) Change in patient skin temperature

I) Describe the ABCs of CPR.

- (1) A=Airway
- (2) B=Breathing
- (3) C=Circulation

J) List three signs that indicate it may be necessary to perform the abdominal thrust:

- (1) The victim clearly indicates they are choking
- (2) The victim cannot cough
- (3) The victim cannot breathe

12.02 Medically Compromised Patient

- A) Recognize medical conditions that may compromise dental treatment.
- B) Identify medications that might affect patient's dental treatment.
- C) Recognize the signs and symptoms related to specific medical conditions and emergencies.

12.03 Medical Emergencies

- A) Discuss emergency care standards.
 - (1) Allergic
 - (2) Blood loss
 - (3) Cardiovascular or cerebrovascular irregularities
 - (4) Emergency procedures by metabolic or neurologic disease
 - (5) Respiratory irregularities, obstructions
 - (6) Shock
 - (7) Transient unconsciousness
- B) Recognize the signs and symptoms for specific medical emergencies.
- C) Explain emergency equipment and supplies.
- D) Explain emergency responses.
- E) Record documentation of emergency.

12.04 Dental Emergency Care

- A) List three steps in responding to an avulsed tooth that will assist in replantation:
 - (1) If tooth is dirty, rinse with tap water. Do not scrub
 - (2) Gently tease tooth back into socket
 - (3) Patient to hold in socket while going to dental office

- B) List two steps in responding to an avulsed tooth when replantation is not possible:
- (1) Place tooth in milk or saline, or place in patient's cheek or a wet towel
 - (2) Transport to dental office as soon as possible
- C) List three situations when a patient has a fractured and must be treated in a dental office as soon as possible:
- (1) When there is blood present which appears to be coming from the tooth or immediately around the tooth
 - (2) When the tooth is subluxed or displaced
 - (3) When you are unable to calm the patient
- D) List four recommendations for patients experiencing minor dental pain:
- (1) Take over the counter analgesic
 - (2) Place oil of clove for open cavity
 - (3) Alternate ice/ heat packs 15 minutes on 15 minutes
 - (4) Rinse with warm salt water for soft tissue

13.0 Dental Anesthesia

- I) Number of Tasks to Master = 75
- II) Intended Outcome: Given information about dental anesthesia and dental anesthesia terminology, the student will be able to perform 85% of the following tasks with accuracy on the didactic examination.
- III) Tasks:

13.01 Dental Anesthesia Terminology

- A) Define the following 16 terms as they apply to dental anesthetic.
- (1) Anesthetic: A drug that causes a temporary loss of pain and sensation all or in part
 - (2) Analgesic: A drug that relieves pain
 - (3) Medical history: A collection of data provided by the patient about his/her general health
 - (4) Contraindication: A condition rendering some particular line of treatment not indicated or not advisable
 - (5) Epinephrine: A common vasoconstrictor used in local anesthetic, also called adrenaline
 - (6) Infiltration anesthetic: The passage local of anesthetic fluid into tissue spaces to prevent pain

- (7) Block anesthetic: Local anesthetic injected near a main nerve trunk that prevents any pain sensation from passing from the site to the brain
- (8) Topical anesthetic: A drug applied topically to oral mucous membrane to numb the area prior to the local anesthetic injection
- (9) Local anesthetic: A drug injected into tissue to block sensation in a particular area
- (10) Nitrous oxide: An anesthetic gas used as an analgesic in dentistry; also known as laughing gas
- (11) Dental syringe: A metal or plastic container with a plunger and needle used for injections of anesthetic into the oral cavity
- (12) Needle gauge: The diameter of a needle; The needles used in dentistry are usually sizes 27 and 30
- (13) Lumen: The passageway inside a hollow needle or organ
- (14) Diffusion: To spread from an area of high concentration to one of low concentration
- (15) Vasoconstrictor: Drugs that constrict blood vessels around the injection site
- (16) Anaphylaxis: A sudden, severe and sometimes fatal allergic reaction by an individual to specific allergens

13.02 Dental Anesthesia

- A) List and define the four most commonly used application methods of anesthetics in the dental office:
 - (1) Topical
 - (2) Local
 - (3) Nitrous oxide
 - (4) Sedation
- B) Explain the four important reasons for checking a patient's medical history as it relates to dental anesthetics.
 - (1) A medical history informs the dental staff of a patient's physical condition
 - (2) Chronic conditions
 - (3) Allergies
 - (4) Medications the patient is taking
- C) Explain six health conditions that can affect anesthetic choice.
 - (1) Hypertension
 - (2) Cardiovascular disease
 - (3) Hyperthyroidism
 - (4) Liver disease

- (5) Kidney disease
- (6) Pregnancy

D) Identify the seven parts of an aspirating syringe.

- (1) Thumb-ring
- (2) Finger grip
- (3) Finger bar
- (4) Barrel
- (5) Piston rod/plunger
- (6) Harpoon
- (7) Threaded hub

E) Identify the four parts of a dental anesthetic needle.

- (1) Plastic housing for needle
- (2) Cartridge end of the needle
- (3) Needle hub
- (4) Injection end of the needle with bevel

F) List the two lengths and gauges of needles most commonly used in dentistry:

- (1) 1" – 30 gauge short.(commonly used for infiltration)
- (2) 1-5/8" – 27 gauge long.(commonly used for block)

G) Identify the three parts of an anesthetic cartridge.

- (1) Rubber stopper
- (2) Glass cartridge
- (3) Aluminum cap with rubber diaphragm

H) List the five items needed for giving a local anesthetic injection:

- (1) Topical anesthetic ointment
- (2) Sterile cotton tip applicator
- (3) Sterile gauze sponges (2 x 2)
- (4) Needle shield
- (5) Sterile anesthetic syringe

I) List in order the four steps for topical anesthetic site preparation and delivery:

- (1) Place a small amount of topical anesthetic on a sterile cotton tip applicator
- (2) Dry the proposed site with a sterile 2 x 2 gauze sponge
- (3) Place the topical anesthetic at the prepared site for approximately 2 to 5 minutes

- (4) Remove the cotton tip applicator and discard in the designated receptacle

J) List the seven steps in loading an anesthetic syringe without the needle:

- (1) Select the type of anesthetic solution as indicated by the dentist and the patient's health history
- (2) Hold the syringe in one hand and use the thumb-ring to pull the plunger back for insertion of the anesthetic cartridge
- (3) With the other hand load the anesthetic cartridge into the syringe barrel opening, the stopper end goes first toward the plunger
- (4) Release the thumb-ring and allow the harpoon to engage into the rubber stopper
- (5) Use the other hand to apply firm pressure or gentle tapping to engage the plunger harpoon into the stopper
- (6) Check to make sure the harpoon is securely engaged with the rubber stopper
- (7) Gently pull back on the plunger to make sure the dentist can aspirate the anesthetic during the injection

K) List the six steps for attaching the needle to the anesthetic syringe:

- (1) Break the seal on the needle and remove the protective cap from the insertion area of the needle
- (2) Carefully align and screw the end of the needle into position on the syringe
- (3) Position the needle so it is straight and firmly attached to the diaphragm part of the cartridge, already in the syringe
- (4) Dispel a very small amount of anesthetic to confirm engagement
- (5) Gently pull back on the plunger to make sure aspiration is confirmed
- (6) Place the prepared syringe on the tray ready for use and out of sight of the patient

L) List the five steps for safely passing the anesthetic syringe to the dentist:

- (1) Loosen the needle guard
- (2) Check the needle guard for stability
- (3) Place the thumb-ring over the dentist's thumb, and at the same time, rotate the syringe barrel so the glass cartridge is in full view
- (4) Gently but carefully and smoothly remove the needle guard as the dentist takes the syringe
- (5) Put the needle guard in the needle holder. The dentist will put the used syringe into the holder, needle first, for protection of the staff

M) List the two necessary steps needed for recapping and discarding the anesthetic needle:

- (1) The dental assistant or hygienist or dentist may recap the needle only by use of a needle guard or a one-handed scoop. (*This procedure is usually completed by the dentist for employee protection as required by OSHA regulations.*)
- (2) The used anesthetic needle must be discarded in a sharps container

14.0 Chairside Assisting

- I) Number of Tasks to Master = 66
- II) Intended Outcome: Given information about dental ergonomics, principles of four-handed dentistry and maintaining a clear operating field the student will perform 85% of the following tasks with accuracy on the didactic exam.
- III) Tasks:

14.01 Dental Ergonomics

A) Define the five classifications of motion.

- (1) Class I – Movement of the fingers only, as when picking up a cotton roll
- (2) Class II – Fingers and wrist motion, as used when transferring an instrument to the operator
- (3) Class III – Fingers, wrist, and elbow motion, as when reaching for a handpiece
- (4) Class IV – Movement of the entire arm and shoulder, as when reaching into a supply tub or container
- (5) Class V – Movement of the entire torso, as when turning around to reach for equipment from a side or split delivery unit

B) List the four zones of activity:

- (1) Operator's zone
- (2) Assistant's zone
- (3) Transfer zone
- (4) Static zone

C) Describe the activities of the above four zones.

- (1) Operator's zone – Where the operator is positioned to access the oral cavity and have the best visibility
- (2) Assistant's zone – Where the assistant is positioned to easily assist the dentist and have access to instruments, the evacuator, and so on, on the dental unit or cart without interference
- (3) Transfer zone – Where instruments and materials are passed and received

- (4) Static zone – Where rear delivery systems, dental instruments, mobile cart and equipment can be found

D) Using the face of a clock, define each zone of activity for the right-handed dentist.

- (1) Operator – 7 o'clock to 12 o'clock
- (2) Static – 12 o'clock to 2 o'clock
- (3) Assistant – 2 o'clock to 4 o'clock
- (4) Transfer – 4 o'clock to 7 o'clock

E) Using the face of a clock, define each zone of activity for the left-handed dentist.

- (1) Operator – 12 o'clock to 5 o'clock
- (2) Transfer – 5 o'clock to 8 o'clock
- (3) Assistant – 8 o'clock to 10 o'clock
- (4) Static – 10 o'clock to 12 o'clock

F) Define the three commonly used patient positions in general dentistry.

- (1) Upright position – The back of the chair is upright at a 90° angle. This position is used for patient entry and dismissal, and while taking radiographs or impressions.
- (2) Supine position – The back of the chair is lowered back until the patient's head and knees are at the same plane. *Most dental treatment takes place in the supine position.*
- (3) Subsupine position – The back of the chair is lowered until the patient's head is lower than the feet. This position is only recommended in emergency situations.

G) List four criteria for positioning the operator:

- (1) Back straight, feet on the floor, and thighs angled so that the knees are slightly lower than hip level
- (2) Elbows close to the sides with shoulders relaxed
- (3) Patient's oral cavity should be at elbow height
- (4) The operator should be facing forward with eyes focused downward

H) List four criteria for positioning the dental assistant:

- (1) Back straight with eye level approximately four to six inches higher than the operator
- (2) Torso centered on the stool, with the stool as close to the patient as possible
- (3) Feet positioned on the ring or platform near the base of the stool

- (4) The assistant's body is facing toward the patient's head, with hips and thighs level to the floor and parallel to the patient's shoulders

14.02 Principles of Four-handed Dentistry

A) Define four-handed or sit-down dentistry.

- (1) The dentist and dental assistant are working together at the dental chair in an effort to provide a smooth and efficient transfer of instruments and materials during patient procedures.

B) List three benefits of fourhanded dentistry.

- (1) Increased patient comfort and safety
- (2) Decreased stress and fatigue for the operator and assistant
- (3) Increased production with decreased chair time

C) List six general rules of transferring instruments:

- (1) Pass with the left hand.(right handed operator)
- (2) Never pass instruments over the patient's face
- (3) Avoid moving the operator's hand and eyes from the working site
- (4) Always wait for a signal from the operator before exchanging instruments
- (5) Keep the passing zone close to the face, a few inches below the chin
- (6) Pass the instrument in the position of use

D) Define the three types of instrument grasps.

- (1) Pen grasp – The instrument is held in the same manner as a pen
- (2) Palm grasp – The instrument is held in the palm of the hand
- (3) Palm-thumb grasp – The instrument is held in the palm of the hand and the thumb is used to stabilize the instrument

E) Define the two most commonly used types of instrument transfers.

- (1) One-handed transfer – The assistant passes and receives the instrument with one hand allowing for the use of the evacuator or the air-water syringe at the same time
- (2) Two-handed transfer – The assistant uses both hands for the transfer, one to pass and the other to receive

14.03 Maintaining a Clear Operating Field

- A) List six responsibilities the dental assistant has in maintaining a clear operating field:
- (1) Adjust the dental light so the light shines directly on the area where the operator is working
 - (2) Use retraction techniques to keep tissues out of the operator's way
 - (3) Use evacuator's to remove water, saliva, and debris from the patient's mouth
 - (4) Keep the operator's mirror clear during treatment
 - (5) Rinse and dry the area where the operator is working
 - (6) Help keep the patient's mouth open during the treatment
- B) List two evacuation methods:
- (1) Saliva ejector
 - (2) High-volume evacuator (HVE)
- C) List three isolation techniques:
- (1) Cotton rolls
 - (2) Dry-angles and other related aids
 - (3) Dental (rubber) dam
- D) List two grasps that an oral evacuator may be held in:
- (1) Palm-thumb grasp
 - (2) Pen grasp
- E) List six guidelines for oral evacuation tip placement:
- (1) Hold in right hand for right handed operator
 - (2) Carefully place the evacuator tip in the patient's mouth; avoid bumping the teeth, lips, or gingiva
 - (3) Place the evacuator tip approximately one tooth distal to the tooth being worked on
 - (4) Hold the bevel of the evacuator tip parallel to the buccal or lingual surface of the tooth
 - (5) The middle of the evacuator tip opening should be even with the occlusal surface and held still so that it does not draw the water coolant away from the bur
 - (6) Keep the evacuator tip far enough away from the mucosal tissue to prevent it from being sucked into the tip

15.0 Dental Materials

- I) Number of Tasks to Master = 82
- II) Intended Outcome: Given information about the properties and different classifications of dental materials, the student will be able to perform 85% of the following tasks with accuracy on the didactic examination.
- III) Tasks:

15.01 Properties and Classifications of Dental Materials

- A) List the four properties a dental material must display to be used successfully to restore oral structures:
 - (1) Durability
 - (2) Corrosion resistance
 - (3) Non-toxicity
 - (4) Bio-compatibility
- B) List and define the three properties of dental materials listed below which are evaluated to determine the materials suitability for use in the mouth:
 - (1) Stress: The force (per unit body) within a body that resists an external force
 - (2) Strain: The distortion within a body that results from an applied force
 - (3) Strength: The maximum stress required to fracture a structure
- C) Define restorative dentistry.
- D) List six classifications of dental materials:
 - (1) Metals
 - (2) Resins
 - (3) Impression materials
 - (4) Gypsums
 - (5) Cements and liners
 - (6) Porcelain and ceramics

15.02 Metals in Dentistry

- A) List four uses of metals in dentistry:
 - (1) Crowns and bridge restorations
 - (2) Partial dentures
 - (3) Implants
 - (4) Amalgam restorations

B) Explain six important information points about amalgam.

- (1) Amalgam is the most common and widely used dental restorative worldwide.
- (2) The American Dental Association and various independent agencies have studied the mercury in amalgam and reported no adverse effects.
- (3) Mercury is needed to make the material into a paste form, which allows it to be placed into the tooth preparation.
- (4) The mercury is lost during condensation into the tooth and over the life of the restoration as mercury vapor.(Use no touch technique)
- (5) Amalgam breaks down by corrosion over time requiring replacement.
- (6) Amalgam is an unusual alloy composed of silver, tin, copper, and mercury.

15.03 Resins in Dentistry

A) Explain how to prepare, mix, deliver and store dental resins.

- (1) Acrylic resins – Primarily used for denture bases and provisional (temporary) crown and bridge restoration.
- (2) Composite resins – Primarily used for restorations and cements.
- (3) Glass ionomers – Used as cements, liners, bases, and restorations.
- (4) Compomers – A combination of glass ionomer and composite that is used primarily as a restorative, particularly for pediatric dentistry, because it inherently releases fluoride to the tooth structure once it is placed.

B) List the two types of bonds that occur in the resin-to-tooth bond:

- (1) Mechanical
- (2) Chemical

C) Explain why phosphoric acid is used to etch the surface of the enamel and dentin.

- (1) This creates micro-crevasses that the liquid of the bonding agent enters into. When the bonding agent is set, it becomes a tiny finger that grabs onto microporosities and fissures in the tooth surface.

D) Explain when the chemical bond occurs.

- (1) When the etchant breaks down the enamel and dentin exposing the organic component of the structure. These are primarily collagen fibers. The bonding agent has a chemical affinity to collagen, so it attaches to it.

15.04 Impression Materials in Dentistry

A) Explain how to prepare, mix and deliver three major types of impression materials.

- (1) Wax
- (2) Hydrocolloid
- (3) Elastomer

B) Explain the purpose of wax as an impression material.

- (1) To take bite registrations

C) List two forms of hydrocolloid impression material and state their use:

- (1) Reversible – Crown and bridge impressions
- (2) Irreversible (alginate) – Study model impressions

D) List the four forms of elastomeric impression materials:

- (1) Polysulfide
- (2) Polyether
- (3) Addition reaction silicone (polyvinyl siloxane or vinyl polysiloxane)
- (4) Condensation reaction silicone

E) Explain what “addition reaction silicone” is.

- (1) Used in a putty wash technique
- (2) The most commonly used elastomeric impression material

15.05 Gypsums Materials in Dentistry

A) Regarding gypsum based materials (plaster), explain what will happen if the water-to-powder ratio varies from optimum.

- (1) The plaster will weaken

B) Explain how to prepare, mix, deliver and store gypsum products (plasters) according to ADA Spec # , Traditional Name, and Traditional Color.

	ADA Spec #	Traditional Name	Traditional Color
1)	Type I	Impression Plaster	Variable
2)	Type II	Lab. or Model Plaster	White
3)	Type III	Class I Dental Stone	Yellow
4)	Type IV	Class II Dental Stone or Improved Stone	Green, Blue, or Pink

15.06 Cements and Liners in Dentistry

A) Describe three liners.

- (1) Calcium hydroxide
- (2) Cavity varnish
- (3) Fluoride varnish/sealants

B) Describe three uses of cements.

- (1) Luting
- (2) Temporary fillings
- (3) Base fillings

C) Explain how to prepare, mix, deliver and store dental cements.

- (1) Glass ionomer
- (2) Zinc phosphate
- (3) Polycarboxylate
- (4) Zinc oxide eugenol
- (5) Composite resin

D) List five considerations when mixing cements:

- (1) Read and follow manufacturer directions
- (2) Measure carefully
- (3) Avoid moisture contamination
- (4) Mix powder into liquid
- (5) Allow to set completely or according to directions

15.07 Porcelain and Ceramics in Dentistry

A) List the five major uses of porcelain in the dental office:

- (1) Porcelain is used as a coating of porcelain fused to metal crowns
- (2) Porcelain is used as a crown material that can be bonded directly to the tooth
- (3) Porcelain is used as an inlay/onlay material that can be bonded directly into the tooth
- (4) Porcelain is used as teeth in dentures
- (5) Porcelain is often used as a veneering material that can be bonded to tooth structure directly

15.08 Other Dental Materials

A) Explain how to prepare, mix, deliver and store the following:

- (1) Sedative dressings
- (2) Peridontal surgical dressings
- (3) Post surgical dressings
- (4) Bleaching agents
- (5) Bonding agents
- (6) Endodontic materials
- (7) Etchants
- (8) Pit and fissure sealants

15.09 Lab Procedures

A) Describe the following laboratory procedures.

- (1) Fabricate diagnostic casts
- (2) Trimming diagnostic cast
- (3) Debride and polish fixed and removable appliances and prosthesis
- (4) Splints
- (5) Fabricate custom impression trays, mouth/athletic guards, bleaching trays, acrylic temps, etc

16.0 Introduction to Dental Radiography

- I) Number of Tasks to Master = 190
- II) Intended Outcome: Given information about biological effects of ionizing radiation, health protection techniques, x-ray machines, dental film/sensors, radiographic landmarks, mounting radiographs and processing procedures, the

student will be able to perform 85% of the following tasks with accuracy on the didactic examination.

III) Tasks:

16.01 Biological Effects of Ionizing Radiation

A) List four tissues/cells that are highly sensitive to radiation:

- (1) Bone marrow
- (2) Reproductive cells
- (3) Intestines
- (4) Lymphoid tissue

B) List 10 tissues/cells that are moderately sensitive to radiation:

- (1) Oral mucosa
- (2) Skin
- (3) Growing bone
- (4) Growing cartilage
- (5) Small vasculature
- (6) Connective tissue
- (7) Salivary glands
- (8) Mature bone
- (9) Mature cartilage
- (10) Thyroid gland tissue

C) List six tissues/cells that have low sensitivity to radiation:

- (1) Liver
- (2) Optic lens
- (3) Kidneys
- (4) Muscle
- (5) Nerve
- (6) Brain

16.02 Health Protection Techniques

A) List three methods of operator protection from primary radiation:

- (1) Stand behind a protective barrier
- (2) Avoid standing in the path of the direct beam of radiation
- (3) Never hold the film for the patient during an exposure

B) List three methods of operator protection from radiation leakage from suspected x-ray machine malfunction:

- (1) Do not hold the tube housing or the Position Indicating Device (PID) during an exposure
 - (2) Have the machine tested every two years
 - (3) Wear a monitoring device or use area monitors to test for unwanted exposure
- C) List three methods of operator protection from secondary/scattered radiation:
- (1) Stand behind the patient at a point between 90° and 135° from the source of the beam
 - (2) Stand behind a wall or radiation-resistant barrier, or at least six feet away from the radiation source
 - (3) Use of radiation monitoring devices – film badges or dosimeters
- D) List the six methods of radiation protection for the patient:
- (1) Use the fastest film speed available – E-speed
 - (2) Use open-ended, shielded, Position Indicating Devices no larger than 2.75 inches in diameter – rectangular devices are superior
 - (3) Use good technique to diminish the need for retaking films
 - (4) Carefully follow manufacturer's directions for processing
 - (5) Use lead aprons and thyroid collars to cover the patient
 - (6) ALARA (as low as reasonably achievable)

16.03 The X-ray Machine

- A) List the five major components of the x-ray machine:
- (1) Tube
 - (2) Glass housing
 - (3) Tubehead
 - (4) Position Indicating Device (cone)
 - (a) Collimation
 - (b) Filtration
 - (5) Control panel adjustments
- B) Describe the five major components of the x-ray machine.
- (1) Tube: contains negative (cathode) and the positive (anode) terminals that first create, then attract electrons to produce x-rays
 - (2) Glass housing: Lead glass that surrounds the tube
 - (3) Tubehead: heavy metal enclosure that surrounds the x-ray tube
 - (4) Position Indicating Device (cone): used to direct and contain the beam of radiation
 - (5) Control panel adjustments

- (a) The kilovolt peak (kVp) control adjusts the voltage or force of electricity in the tube – between 70 and 90
- (b) The milliamperage (mA) control adjusts the intensity of the current flow, or number of electrons flowing through a circuit – between 5 and 15
- (c) The time control or exposure button activates the x-ray machine and adjusts the amount of time that the stream of electrons is allowed to travel between the cathode and the anode – can be either traditional or impulse driven

16.04 Dental film/sensors

A) List four types of dental films:

- (1) Intraoral
 - (a) Film sizes
- (2) Extraoral
 - (a) Film sizes
- (3) Duplicating
- (4) Digital
 - (a) Charge-coupled device (CCD)
 - (b) Complementary metal oxidesemiconductor/active pixel sensor (CMOS/APS)
 - (c) Charge injection device (CID)

B) Describe Film Selection and Uses

- (1) Perical
- (2) Bitewing
- (3) Occlusal
- (4) Panoramic
- (5) Other extraoral

C) List three factors to consider when storing dental film:

- (1) Temperature
- (2) Humidity
- (3) Radiation

D) Explain the three important film storage factors.

- (1) Optimum temperature for storage should be between 50° and 70° Fahrenheit
- (2) The relative humidity for film storage should be between 30% and 50%

- (3) Film should not be stored in areas where radiation exposures are made

E) List three factors to consider relevant to inventory control of dental film:

- (1) Shelf-life
- (2) Numbering system
- (3) Packaging

F) Explain the three inventory control factors.

- (1) Examine the manufacturer's expiration date on film boxes and store so the oldest film is used first
- (2) Store film according to size – number 0 smallest, to number 4, largest (0, 1, 2 most common)
- (3) Store film by package type – single film packets or double film packets

G) Explain Film Composition

- (1) Latent image
- (2) Film Base
- (3) Adhesive Layer
- (4) Gelatin

16.05 Radiographic Techniques

A) Paralleling Technique

- (1) Advantages and Disadvantages
- (2) Accessories used
- (3) Film Size and Type required

B) Bisecting Angle Technique

- (1) Advantages and Disadvantages
- (2) Accessories used
- (3) Film Size and Type required

C) Extra Oral Film

- (1) Advantages and Disadvantages
- (2) Accessories used
- (3) Film Size and Type required

16.06 Radiographic Infection Control

A) Define two image characteristics used to identify landmarks visible in radiographic films.

- (1) Radiopaque
- (2) Radiolucent

16.07 Patient Management for Radiography

- A) Use appropriate patient management techniques before, during and after exposure
 - (1) Patient concerns
 - (2) Special Needs Patients

16.08 Radiographic Landmarks

- A) Define five image characteristics used to identify landmarks visible in radiographic films.
 - (1) Radiopaque
 - (2) Radiolucent
 - (3) Density
 - (4) Contrast
 - (5) Sharpness
- B) Identify six landmarks visible in the maxillary molar film.
 - (1) Maxillary sinus
 - (2) Zygomatic process
 - (3) Zygomatic bone
 - (4) Hamulus
 - (5) Maxillary tuberosity
 - (6) Coronoid process of the mandible
- C) Identify one landmark visible in the maxillary premolar film.
 - (1) Maxillary sinus
- D) Identify two landmarks visible in the maxillary canine film.
 - (1) Maxillary sinus
 - (2) Junction of the maxillary sinus and nasal fossa
- E) Identify five landmarks visible in the maxillary incisor film.
 - (1) Incisive foramen
 - (2) Nasal septum
 - (3) Nasal fossa
 - (4) Anterior nasal spine
 - (5) Median palatine suture

F) Identify four landmarks visible in the mandibular molar film.

- (1) Mandibular canal
- (2) Internal oblique line
- (3) External oblique ridge
- (4) Mylohyoid ridge

G) Identify one landmark visible in the mandibular premolar film.

- (1) Mental foramen

H) Identify three landmarks visible in the mandibular incisor film.

- (1) Lingual foramen
- (2) Mental ridge
- (3) Genial tubercles

16.09 Mounting Radiographs

A) Describe the eight-step procedure for mounting a full mouth set of radiographs.

- (1) Mark the mount with the patient name, age, date
- (2) Place a clean, dry paper towel on the counter top in front of a lighted viewbox
- (3) With clean, dry hands, handle radiographs by edges only
- (4) Place all radiographs on the paper towel with the embossed (raised) dot facing up
- (5) Sort the radiographs into three groups: bitewings, posterior periapicals, and anterior periapicals
- (6) Further arrange the radiographs by maxillary arch: posterior and anterior, and mandibular arch: posterior and anterior
- (7) Separate all films left from right and orient periapical films with maxillary roots pointing up and mandibular roots pointing down
- (8) Begin mounting by inserting the bitewing radiographs into the mount, followed by the posterior periapicals and finally the anterior periapicals

16.10 Processing Procedures

A) Describe the six steps required during film processing to assure proper infection control.

- (1) Wipe saliva from films
- (2) Place films in a labeled disposable container
- (3) Wash hands
- (4) With non-powdered gloved hands, and in safelight conditions, open the film packets by pulling on their tabs

- (5) Allow films to drop onto a clean paper towel or into a paper cup
- (6) Remove contaminated gloves, rewash hands, and re-glove prior to processing. NOTE: An alternative is to wear over gloves when opening film packets

B) State the 10 steps required to hand process films.

- (1) Check solution levels
- (2) Maintain appropriate chemical temperatures: between 68° and 70°
- (3) Turn white lights off and safelight on
- (4) Using appropriate methods of infection control, remove films from packets
- (5) Securely place films onto hanger
- (6) Immerse film in developer and activate timer for five minutes
- (7) Remove from developer and rinse by agitation for 30 seconds
- (8) Immerse films in fixer and activate timer for 10 minutes
- (9) Remove films and place in circulating water bath for 10 minutes
- (10) Dry films in electric dryer or air-dry until films are no longer tacky

C) State four principles of operation for automatic processing.

- (1) Manufacturer's recommendations must be followed precisely
- (2) Rollers or tracks are used to transport the films through the processing chemicals
- (3) Much higher temperatures are required for automatic processing
- (4) Chemical concentrations are higher for automatic processing

D) Describe three elements of caring for the automatic processor.

- (1) Special cleaning films must be run through the system daily
- (2) Depending on usage, the processor must be scoured with a nylon pad weekly or biweekly. Harsh cleansers should not be used
- (3) At the same time interval, the rollers should be removed from roller-type systems and soaked in warm water for 20 minutes then special cleaning solutions used

E) Describe the three principles for care of processing solutions.

- (1) Levels of the solutions must be checked regularly and replenished as required by manufacturer recommendation
- (2) If large films such as panoramic films are processed frequently, the solutions will need to be replenished more often
- (3) Solutions should be change at least every four weeks

F) Describe quality assurance procedures

- (1) Recording solution temperatures
- (2) Dates of solution changes
- (3) Test films
- (4) Equipment Maintenance
- (5) Inspections

16.11 Evaluating Radiographs for Diagnostic Value

A) Identify interoral exposure errors and causes.

- (1) Elongation
- (2) Foreshortening
- (3) Horizontal overlap
- (4) Cone cutting
- (5) Light image
- (6) Dark image
- (7) Film bending
- (8) Reverse film (herringbone effect)
- (9) Black (clear) film
- (10) Blurred image
- (11) Superimposed image
- (12) Double exposure
- (13) Saliva lead
- (14) Film placement errors

B) Identify extraoral exposure errors and cause

- (1) Patient positioning errors
- (2) Film placement errors

C) Identify Processing Errors and Causes

- (1) Spots on film
- (2) Fogging
- (3) Light and dark images
- (4) Clear (blank film)
- (5) Particle images
- (6) Stains
- (7) Discoloration
- (8) Overlapped films
- (9) Air bubbles
- (10) Scratches
- (11) White or black lines
- (12) Static electricity artifacts
- (13) Fingerprints

Section 2: Clinical Education

Clinical Education: Fundamentals of Dental Assisting

Table 5. Educational Parameters of the Clinical/Lab Component of the Fundamentals of Dental Assisting Curriculum: Procedures

Unit	Title	Number of Tasks
1	Disclosing Procedure	5
2	Brushing Procedure	12
3	Flossing Procedure	7
4	Vital Signs Measurement Procedure	7
5	Personal Protective Equipment (PPE) Procedure	11
6	Mounting Radiographs Procedure	6
7	Acrylic Disk Polishing Procedure	7
8	Diagnostic Cast Procedure (Working With Alginate and Dental Plaster Lab)	20
9	Treatment Room Breakdown Procedure	17
Total		92

1.0 Disclosing Procedure

- I) Number of Tasks to Master = 5
- II) Intended Outcome: Given disclosing tablets or disclosing solution, lip lubricant, safety glasses, gloves, mask, soap, paper towels, mouth mirror, hand mirror, cotton tip applicator, cup, water and a sink (if available), the student will perform the following tasks on a partner with 100% accuracy.
- III) Tasks:
 - (1) Take universal precautions.
 - (2) Apply lip lubricant on partner's lips.
 - (3) Refer to manufacturer's instructions prior to using the disclosing solution or tablets. If using disclosing tablets, have your partner chew one tablet thoroughly, swish with water and expectorate (spit) into a cup or sink. If using the disclosing solution, apply a small amount of solution on a cotton tip applicator and glide the applicator over all the surfaces of the teeth. Instruct your partner to rinse with water and expectorate into a cup or sink.
 - (4) Using a mouth mirror, look in your partner's mouth and identify the areas of plaque on the surfaces of the teeth. Holding a hand mirror, your partner will also look in the mouth and identify the areas of plaque on tooth surfaces. (NOTE: Areas where plaque is present on the teeth will stain a color.)
 - (5) Disinfect the surface area where you are working. Your partner will follow the same procedures (1-4.)

2.0 Brushing Procedure

- I) Number of tasks to master = 12
- II) Intended Outcome: Given a mouth mirror and soft bristle toothbrush the student will perform the following tasks with 100% accuracy.
- III) Tasks:
 - (1) Grasp the toothbrush with a firm grip and utilize a hand mirror to assess tooth brushing technique.
 - (2) Begin on the maxillary buccal surfaces of the two most posterior teeth. Angle the toothbrush at a 45° angle to the long axis of the tooth.
 - (3) Choosing no more than two teeth at a time, gently move the toothbrush against the teeth and gums using small vibratory strokes. Brush for a count of 10.
 - (4) Continue around the mouth until all the buccal and facial surfaces have been brushed.
 - (5) Begin on the maxillary lingual surfaces of the two most posterior teeth and continue until all the lingual surfaces have been brushed.
 - (6) Begin on the mandibular quadrant on the buccal surfaces of the two most posterior teeth. Angle the toothbrush at a 45° angle to the long axis of the tooth.
 - (7) Choosing no more than two teeth at a time, gently move the toothbrush against the teeth and gums using small vibratory strokes. Brush for a count of 10.
 - (8) Continue around the mouth until all the buccal and facial tooth surfaces have been brushed.
 - (9) Continue on the mandibular lingual surfaces of the two most posterior teeth and continue until all the lingual surfaces have been brushed.
 - (10) Begin on the furthestmost tooth in a maxillary quadrant. Place the bristles on the chewing surface of the teeth and use a back-and-forth motion across the occlusal surfaces. Brush from the furthestmost tooth toward the premolars for a count of 10.
 - (11) Continue until all the occlusal surfaces have been brushed.
 - (12) Rinse to remove plaque and debris.

3.0 Flossing Procedure

- I) Number of Tasks to Master: 7
- II) Intended Outcome: Using waxed or unwaxed dental floss, a hand mirror, and the assistance of a partner, the student will perform the following tasks on themselves with 100% accuracy.
- III) Tasks:
 - (1) Your partner will hold the hand mirror while you practice. Remove a piece of floss approximately 18 inches long.
 - (2) Wrap the ends of the floss around your middle fingers until the length of the floss is approximately two inches. Use your other fingers to help guide the floss.
 - (3) Beginning on the most posterior interproximal surface of a mandibular or maxillary tooth, glide the floss between the teeth using a back-and-forth motion. Avoid snapping the floss against the gum tissue.
 - (4) Curve the floss in a C-shape around the tooth. Guide the floss into the sulcus maintaining a C-shape. Gently floss the area four to five times using an up and down motion.
 - (5) Remove the floss from the sulcus area and curve the floss in a C-shape around the opposing tooth. Glide the floss into the sulcus, maintaining a C-shape. Gently floss the area four to five times using an up and down motion.
 - (6) Remove the floss from the contact area with an upward gliding motion. Unwrap the floss from the fingers and wrap a new section of unused floss around the same fingers. Proceed to the next interproximal area.
 - (7) Continue in this manner until all the interproximal surfaces have been flossed.

4.0 Vital Signs Procedure

- I) Tasks to Master = 7
- II) Intended Outcome: Given the knowledge of vital statistics, a sphygmomanometer, a stethoscope, a thermometer, a timepiece, a chart, a writing instrument and a patient the student will perform the following tasks with 100% accuracy.
- III) Tasks:
 - (1) Have the patient bare an arm without obstruction up to the shoulder.
 - (2) Place the sphygmomanometer around the upper arm between the shoulder and the elbow, with the pressure gauge tubing lined up over the medial aspect of the antecubital fossa.
 - (3) Place the earpieces of the stethoscope in the ears and the tympanic piece over the brachial artery in the antecubital fossa.
 - (4) Inflate the cuff until there is not a pulse sound appreciated through the stethoscope. (Usually 160 to 180.)
 - (5) As pressure is released from the cuff, record the pressure reading on the gauge when you first hear a pulse sound then again when the pulse sound is no longer heard.
 - (6) Place the pads of the index and middle fingers on the inner surface of the patient's wrist (between the radius and the tendon). Start counting with 0 for the first pulse; the next pulse felt will be counted as 1 and so on. Count the pulse for thirty seconds and then multiply by 2 to complete the rate for one full minute.
 - (7) Using a timepiece and watching the patient, count the number of breaths taken in a 20 second period, multiply this number by three, and then record the number.

5.0 Personal Protective Equipment Procedure

- I) Number of Tasks to Master = 11
- II) Intended Outcome: Given the necessary personnel supplies (lab jacket, gloves, masks, and goggles) to don and take off personal protective equipment, the student will perform the following tasks with 100% accuracy.
- III) Tasks:

5.01 Don Personal Protective Equipment

- (1) Put on fresh lab jacket and fasten properly.
- (2) Put on protective eyewear.
- (3) Place mask on face and fasten properly, adjust the nose area to fit snugly.
- (4) Wash and dry hands then put on exam gloves.
- (5) Tuck cuff of sleeves into the gloves.

5.02 Removing Personal Protective Equipment

- (1) Grasp the cuff of the first glove and pull it off turning it inside out. As you do, keep this glove in the gloved hand.
- (2) With the ungloved hand grasp the inside of the cuff of the other glove, pull the glove off turning it inside out, keeping the first glove inside. Throw the gloves in the proper waste receptacle.
- (3) Grasp the elastic or ties of the mask and remove it from the face, being cautious not to touch the contaminated front area. Throw the mask away.
- (4) Grasp the protective eyewear by the earpiece and remove from the face. Place by sink to clean and disinfect.
- (5) Remove the lab jacket and place in the proper area.
- (6) Wash hands.

6.0 Mounting Radiographs Procedure

- I) Number of Tasks to Master = 6
- II) Intended Outcome: Given the knowledge of dental anatomy, eighteen (18) developed radiographs, a mount, table surface, and a light source, the student will be able to perform the following tasks with 100% accuracy.
- III) Tasks:
 - (1) Arrange all dental films with dimples facing up from table top.
 - (2) Group bitewings, anterior periapicals, and posterior periapicals.
 - (3) Separate maxillary from mandibular periapicals.
 - (4) Separate all films left and right. (Note: With the dimple facing toward the reader, identify the teeth in the radiograph and place with teeth anteriorly to center of the mount.)
 - (5) Insert each film into the appropriate slot on the x-ray mount (dimple facing up).
 - (6) Label the mounts with patient name and date.

7.0 Acrylic Disk Polishing Procedure

- I) Number of Tasks to Master = 7
- II) Intended Outcome: Given the necessary didactic instruction, supplies, and equipment to perform polishing acrylic, the student will perform the following tasks on an acrylic disk with imperfections with 100% accuracy.
- III) Tasks:
 - (1) Assemble acrylic disk polishing tray set up.
 - (a) Gloves
 - (b) Eyewear
 - (c) Acrylic disc
 - (d) Lathe
 - (e) Arbor band or latch-type acrylic bur
 - (f) Slow speed handpiece
 - (g) Wet-rag wheel
 - (h) Medium grit pumice
 - (i) Flour of pumice
 - (2) Take required safety precautions.
 - (3) Reduce the bulk with the arbor band on the lathe or an acrylic bur in the handpiece.
 - (4) Refine surface with an acrylic bur in the handpiece.
 - (5) Polish on low with a wet-rag wheel and medium pumice.
 - (6) Polish on low with a wet-rag wheel and flour of pumice.
 - (7) Rinse and evaluate disk.

8.0 Diagnostic Cast Procedure (Working with Alginate and Dental Plaster Laboratory)

- I) Number of Tasks to Master = 20
- II) Intended Outcome: Given the necessary diagnostic casting equipment and supplies, the student will perform the following tasks with 100% accuracy.
- III) Tasks:
 - A) Assemble the diagnostic case procedure tray set up.
 - (1) Flexible mixing bowl
 - (2) Large mixing spatula
 - (3) Small mixing spatula
 - (4) Vibrator
 - (5) Dental model plaster
 - (6) Rubber model base formers
 - (7) Maxillary stock tray to fit the typodont model
 - (8) Mandibular stock tray to fit the typodont model
 - (9) Typodont model
 - (10) Sink for water and hand washing
 - (11) Paper towels
 - (12) Gloves
 - B) Produce a diagnostic model of the dental arches by performing the following 20 tasks.
 - (1) Wash, dry, and glove hands
 - (2) Select a tray that will fit the typodont model provided
 - (3) Measure out the alginate powder
 - (4) Measure out the correct amount of water
 - (5) Pour the alginate into the mixing bowl
 - (6) Pour the water into the mixing bowl
 - (7) Mix the material until the mix is creamy, remembering to keep the amount of air incorporation to a minimum to prevent bubble formation
 - (8) Load the mandibular tray
 - (9) Place the loaded tray onto the mandibular teeth of the typodont in a manner that simulates insertion into an actual patient's mouth. This must be done remembering to seat the posterior section of the tray first and then rocking it onto the anterior teeth
 - (10) Once the material is set remove the impression from the typodont and repeat the procedures for the upper arch

- (11) Have the instructor check the impressions to ensure all the teeth are registered without excessive show-through on the occlusal, that the extensions of the impressions are appropriate(i.e. vestibules, palate, throat)and that all the teeth are properly registered
- (12) Proceed to pour-up the impressions by measuring the dental plaster into the flexible bowl
- (13) Measure out the correct amount of water and pour it into the mixing bowl
- (14) Mix the material with the intention of preventing a lot of air incorporation, check consistency (smooth and creamy with body) and use the vibrator to eliminate as much of the incorporated air as possible from the mix
- (15) Pour the impressions by dipping a small amount of plaster out of the mix with a mixing spatula and running the mixture into the impression from one point using the vibrator to help the material slowly advance to each of the teeth and other features of the impression
- (16) Lay the poured impression aside for a moment while a sufficient quantity of the mixed plaster is loaded into the rubber base former
- (17) Invert the poured impression over the base former and seat without embedding the tray itself in the plaster
- (18) Repeat these procedures with the other impression
- (19) Once the plaster is set (45-60 minutes), remove the impressions from the new model without breaking teeth
- (20) Have the instructor inspect the study model to determine acceptability

9.0 Treatment Room Breakdown Procedure

- I) Number of Tasks to Master = 17
- II) Intended Outcome: Given the necessary didactic instruction, supplies and equipment to breakdown a dental treatment room the student will perform the following tasks with 100% accuracy.
- III) Tasks:
 - (1) Remove mask and gloves following completion of the dental procedure. Leave safety glasses on.
 - (2) Complete chart entry.
 - (3) Walk patient out to the front desk.
 - (4) Return to treatment room.
 - (5) Put on utility gloves.
 - (6) Clear tray of disposables.
 - (7) Place items into the biobag at the unit.
 - (8) Run handpieces 30 seconds.
 - (9) Remove handpieces and place on tray.
 - (10) Strip barriers off of chair, stools, cart and light.
 - (11) Wipe handpieces, HVE, a/w syringes with disinfectant.
 - (12) Lay handpieces, HVE, a/w syringes on a paper towel and spray them with an acceptable disinfectant.
 - (13) Take tray of contaminated items to the sterilization area and separate.
 - (14) Remove the barrier from the instrument tray.
 - (15) Return to the treatment room, spray glasses with disinfectant.
 - (16) Spray utility gloves with disinfectant.
 - (17) Wash hands.

Table 6. Educational Parameters of the Clinical/Lab Component of the Fundamentals of Dental Assisting Curriculum: Evaluation

Unit	Title	Number of Tasks
1	Disclosing Procedure	5
2	Brushing Procedure	12
3	Flossing Procedure	7
4	Vital Signs Procedure	7
5	Personal Protective Equipment Procedure	11
6	Mounting Radiographs Procedure	6
7	Acrylic Disk Polishing Procedure	7
8	Diagnostic Cast Procedure	20
9	Treatment Room Breakdown Procedure	17
Total		92

Fundamentals of Dental Assisting Competency-Based Clinical Evaluation

1.0 Disclosing Procedure

Student Name: _____

Lab Evaluator: _____ Date _____ Grade: [] Pass [] Fail

CL Evaluator: _____ Date _____ Grade [] Pass [] Fail

Intended Outcome: Given disclosing tablets or disclosing solution lip lubricant, safety glasses, gloves, mask, soap, paper towels, mouth mirror, hand mirror, cotton tip applicator, cup, water, and a sink (if available), the student will perform the following tasks on themselves and their partner with 100% accuracy.

	Tasks	Clinical / Laboratory	
		Pass	Fail
1.	Take universal precautions.		
2.	Apply lip lubricant on partner's lips.		
3.	Refer to manufacturer's instruction prior to using the disclosing solution or tablets. If using tablets, have your partner chew one tablet thoroughly, swish with water and expectorate (spit) into a cup or sink. If using the disclosing solution, apply a small amount of solution on a cotton tip applicator and glide the applicator over all the surfaces of the teeth. Instruct your partner to rinse with water and expectorate into a cup or sink.		
4.	Using a mouth mirror, look in your partner's mouth and identify the areas of plaque on the surface of the teeth. Holding a hand mirror, your partner will also look in the mouth and identify areas of plaque on tooth surfaces. (Note: Areas where plaque is present on the teeth will stain a color.)		
5.	Disinfect the surface area where you are working. Your partner will follow the same procedure (steps 1-4 above)		
Comments			

Fundamentals of Dental Assisting Competency-Based Clinical Evaluation

2.0 Brushing Procedure

Student Name: _____

Lab Evaluator: _____ Date _____ Grade: [] Pass [] Fail

CL Evaluator: _____ Date _____ Grade [] Pass [] Fail

Intended Outcome: Given a mouth mirror and soft bristle toothbrush, the student will perform the following tasks with 100% accuracy.

	Tasks	Clinical / Laboratory	
		Pass	Fail
1.	Grasp the toothbrush with a firm grip and utilize a hand mirror to assess tooth brushing technique.		
2.	Begin on the maxillary buccal surfaces of the two most posterior teeth. Angle the toothbrush at a 45° angle to the long axis of the tooth.		
3.	Choosing no more than two teeth at a time, gently move the toothbrush against the teeth and gums using small vibratory strokes. Brush for a count of 10.		
4.	Continue around the mouth until all the buccal and facial surfaces have been brushed.		
5.	Begin on the maxillary lingual surfaces of the two most posterior teeth and continue until all the lingual surfaces have been brushed.		
6.	Begin on the mandibular quadrant on the buccal surfaces of the two most posterior teeth. Angle the toothbrush at a 45° angle to the long axis of the tooth.		
7.	Choosing no more than two teeth at a time, gently move the toothbrush against the teeth and gums using small vibratory strokes. Brush for a count of 10.		
8.	Continue around the mouth until all the buccal and facial tooth surfaces have been brushed.		
9.	Continue on the mandibular lingual surfaces of the two most posterior teeth and continue until all the lingual surfaces have been brushed.		

	Tasks	Clinical / Laboratory	
		Pass	Fail
10.	Begin on the furthestmost tooth in a maxillary quadrant. Place the bristles on the chewing surface of the teeth and use a back-and-forth motion across the occlusal surfaces. Brush from the furthestmost tooth toward the premolars for a count of 10.		
11.	Continue until all the occlusal surfaces have been brushed.		
12.	Rinse to remove plaque and debris.		
Comments			

Fundamentals of Dental Assisting Competency-Based Clinical Evaluation

3.0 Flossing Procedure

Student Name: _____

Lab Evaluator: _____ Date _____ Grade: [] Pass [] Fail

CL Evaluator: _____ Date _____ Grade [] Pass [] Fail

Intended Outcome: Using waxed or unwaxed dental floss, a hand mirror, and the assistance of a partner, the student will perform the following tasks on themselves with 100% accuracy.

	Tasks	Clinical / Laboratory	
		Pass	Fail
1.	Your partner will hold the hand mirror while you practice. Remove a piece of floss approximately 18 inches long.		
2.	Wrap the ends of the floss around your middle fingers until the length of the floss is approximately two inches. Use your other fingers to help guide the floss.		
3.	Beginning on the most posterior interproximal surface of a mandibular or maxillary tooth, glide the floss between the teeth using a back-and-forth motion. Avoid snapping the floss against the gum tissue.		
4.	Curve the floss in a C-shape around the tooth. Guide the floss into the sulcus maintaining a C-shape. Gently floss the area four to five times using an up and down motion.		
5.	Remove the floss from the sulcus area and curve the floss in a C-shape around the opposing tooth. Glide the floss into the sulcus, maintaining a C-shape. Gently floss the area four to five times using an up and down motion.		
6.	Remove the floss from the contact area with an upward gliding motion. Unwrap the floss from the fingers and wrap a new section of unused floss around the same fingers. Proceed to the next interproximal area.		
7.	Continue in this manner until all the interproximal surfaces have been flossed.		
Comments			

Fundamentals of Dental Assisting Competency-Based Clinical Evaluation

4.0 Vital Signs Procedure

Student Name: _____

Lab Evaluator: _____ Date _____ Grade: [] Pass [] Fail

CL Evaluator: _____ Date _____ Grade [] Pass [] Fail

Intended Outcome: Given the knowledge of vital statistics, a sphygmomanometer, a stethoscope, a thermometer, a timepiece, a chart, a writing instrument and a patient the student will perform the following tasks with 100% accuracy.

	Tasks	Clinical / Laboratory	
		Pass	Fail
1.	Have the patient bare an arm without obstruction up to the shoulder.		
2.	Place the sphygmomanometer around the upper arm between the shoulder and the elbow, with the pressure gauge tubing lined up over the medial aspect of the antecubital fossa.		
3.	Place the earpieces of the stethoscope in the ears and the tympanic piece over the brachial artery in the antecubital fossa.		
4.	Inflate the cuff until there is not a pulse sound appreciated through the stethoscope. (Usually 160 to 180.)		
5.	As pressure is released from the cuff, record the pressure reading on the gauge for when you first hear a pulse sound then again when the pulse sound is no longer heard.		
6.	Place the pads of the index and middle fingers on the inner surface of the patient's wrist (between the radius and the tendon). Start counting with 0 for the first pulse; the next pulse felt will be counted as 1 and so on. Count the pulse for thirty seconds and then multiply by 2 to complete the rate for one full minute.		
7.	Using a timepiece and watching the patient, count the number of breaths taken in a 20 second period, multiply this number by three, and then record the number.		
Comments			

Competency-Based Clinical Evaluation

5.0 Personal Protective Equipment Procedure

Student Name: _____

Lab Evaluator: _____ Date _____ Grade: [] Pass [] Fail

CL Evaluator: _____ Date _____ Grade [] Pass [] Fail

Intended Outcome: Given the necessary personnel supplies (lab jacket, gloves, masks, and goggles) to don and take off personal protective equipment, the student will perform the following tasks with 100% accuracy.

	Tasks	Clinical / Laboratory	
		Pass	Fail
Don Personal Protective Equipment			
1.	Put on fresh lab jacket and fasten properly.		
2.	Put on protective eyewear.		
3.	Place mask on face and fasten properly, adjust nose area to fit snugly.		
4.	Wash and dry hands then put on exam gloves.		
5.	Tuck cuff of sleeves into the gloves.		
Removing Personal Protective Equipment			
1.	Grasp the cuff of the first glove and pull it off turning it inside out. As you do, keep this glove in the gloved hand.		
2.	With the ungloved hand grasp the inside of the cuff of the other glove, pull the glove off turning it inside out, keeping the first glove inside. Throw the gloves in the proper waste receptacle.		
3.	Grasp the elastic or ties of the mask and remove it from the face, being cautious not to touch the contaminated front area. Throw the mask away.		
4.	Grasp the protective eyewear by the earpiece and remove from the face. Place by sink to clean and disinfect.		
5.	Remove the lab jacket and place in the proper area.		
6.	Wash hands.		
Comments			

Fundamentals of Dental Assisting Competency-Based Clinical Evaluation

6.0 Mounting Radiographs Procedure

Student Name: _____

Lab Evaluator: _____ Date _____ Grade: [] Pass [] Fail

CL Evaluator: _____ Date _____ Grade [] Pass [] Fail

Intended Outcome: Given the knowledge of dental anatomy, eighteen (18) developed radiographs, a mount, table surface, and a light source, the student will be able to perform the following tasks with 100% accuracy.

	Tasks	Clinical / Laboratory	
		Pass	Fail
1.	Arrange all dental films with dimples facing up from table top.		
2.	Group bitewings, anterior periapicals, and posterior periapicals.		
3.	Separate maxillary from mandibular periapicals.		
4.	Separate all films left and right. (Note: With the dimple facing toward the reader, identify the teeth in the radiograph and place with teeth anteriorly to center of the mount.)		
5.	Insert each film into the appropriate slot on the x-ray mount (dimple facing up).		
6.	Label the mounts with patient name and date.		
Comments			

Fundamentals of Dental Assisting Competency-Based Clinical Evaluation

7.0 Acrylic Disk Polishing Procedure

Student Name: _____

Lab Evaluator: _____ Date _____ Grade: [] Pass [] Fail

CL Evaluator: _____ Date _____ Grade [] Pass [] Fail

Intended Outcome: Given the necessary didactic instruction, supplies, and equipment to perform polishing acrylic, the student will perform the following tasks on an acrylic disk with imperfections with 100% accuracy.

	Tasks	Clinical / Laboratory	
		Pass	Fail
1.	Assemble acrylic disk polishing tray set up. Gloves. Eyewear. Acrylic disc. Lathe. Arbor band or latch-type acrylic bur. Slow speed handpiece. Wet-rag wheel. Medium grit pumice. Flour of pumice.		
2.	Take required safety precautions.		
3.	Reduce the bulk with the arbor band on the lathe or an acrylic bur in the handpiece.		
4.	Refine surface with an acrylic bur in the handpiece.		
5.	Polish on low with a wet-rag wheel and medium pumice.		
6.	Polish on low with a wet-rag wheel and flour of pumice.		
7.	Rinse and evaluate disk.		
Comments			

Fundamentals of Dental Assisting Competency-Based Clinical Evaluation

8.0 Diagnostic Cast Procedure

Student Name: _____

Lab Evaluator: _____ Date _____ Grade: [] Pass [] Fail

CL Evaluator: _____ Date _____ Grade [] Pass [] Fail

Intended Outcome: Given the necessary diagnostic casting equipment and supplies, the student will perform the following tasks with 100% accuracy.

	Tasks	Clinical / Laboratory	
		Pass	Fail
Set up the workstation by assembling the following 12 materials:			
	Flexible mixing bowl.		
	Large mixing spatula.		
	Small mixing spatula.		
	Vibrator.		
	Dental model plaster.		
	Rubber model base formers.		
	Maxillary stock tray to fit the typodont model.		
	Mandibular stock tray to fit the typodont model.		
	Typodont model.		
	Sink for water and hand washing.		
	Paper towels.		
	Gloves.		
Produce a diagnostic model of the dental arches by performing the following 20 tasks:			
1.	Wash, dry, and glove hands.		
2.	Select a tray that will fit the typodont model provided.		
3.	Measure out the alginate powder.		
4.	Measure out the correct amount of water.		
5.	Pour the alginate into the mixing bowl.		
6.	Pour the water into the mixing bowl.		
7.	Mix the material until the mix is creamy, remembering to keep the amount of air incorporation to a minimum to prevent bubble formation.		
8.	Load the mandibular tray.		

	Tasks	Clinical / Laboratory	
		Pass	Fail
9.	Place the loaded tray onto the mandibular teeth of the typodont in a manner that simulates insertion into an actual patient's mouth. This must be done remembering to seat the posterior section of the tray first and then rocking it onto the anterior teeth.		
10.	Once the material is set the student will remove the impression from the typodont and repeat the procedures for the upper arch.		
11.	Have the instructor check the impressions to ensure all the teeth are registered without excessive show-through on the occlusal, that the extensions of the impressions are appropriate, and that all the teeth are properly registered.		
12.	Proceed to pour-up the impressions by measuring the dental plaster into the flexible bowl.		
13.	Measure out the correct amount of water and pour it into the mixing bowl.		
14.	Mix the material with the intention of preventing a lot of air incorporation and use the vibrator to eliminate as much of the incorporated air as possible from the mix. Determine correct consistency.		
15.	Pour the impressions by dipping a small amount of plaster out of the mix with a mixing spatula and running the mixture into the impression from one point using the vibrator to help the material slowly advance to each of the teeth and other features of the impression.		
16.	Lay the poured impression aside for a moment while a sufficient quantity of the mixed plaster is loaded into the rubber base former.		
17.	Invert the poured impression over the base former and seat without embedding the tray itself in the plaster.		
18.	Repeat the procedures with the other impression.		
19.	Once the plaster is set (45-60 minutes), remove the impressions from the new model without breaking teeth.		
20.	Have the instructor inspect the study model for acceptability.		
Comments			

Fundamentals of Dental Assisting

Competency-Based Clinical Evaluation

9.0 Treatment Room Breakdown Procedure

Student Name: _____

Lab Evaluator: _____ Date _____ Grade: [] Pass [] Fail

CL Evaluator: _____ Date _____ Grade [] Pass [] Fail

Intended Outcome: Given the necessary didactic instruction, supplies and equipment to breakdown a dental treatment room the student will perform the following tasks with 100% accuracy.

	Tasks	Clinical / Laboratory	
		Pass	Fail
1.	Remove mask and gloves following completion of the dental procedure. Leave safety glasses on.		
2.	Complete chart entry.		
3.	Walk patient out to the front desk.		
4.	Return to treatment room.		
5.	Put on utility gloves.		
6.	Clear tray of disposables.		
7.	Place items into the biobag at the unit.		
8.	Run handpieces for 30 seconds.		
9.	Remove handpieces and place on tray.		
10.	Strip barriers off of chair, stools, cart and light.		
11.	Wipe handpieces, HVE, a/w syringes with disinfectant.		
12.	Lay handpieces, HVE, syringes on a paper towel and spray them with an acceptable disinfectant.		
13.	Take tray of contaminated items to the sterilization area and separate.		
14.	Remove the barrier from the instrument tray.		
15.	Return to the treatment room, remove glasses, spray with disinfectant.		
16.	Spray utility gloves with disinfectant.		
17.	Wash hands.		