


U.S. Department of Labor Employment and Training Administration, Office of Apprenticeship Washington, D.C. 20210	Distribution: A-541 Headquarters A-544 All Field Tech A-547 SD+RD+SAA+; Lab.Com	Subject: Guidelines for Competency-based, Hybrid and Time-based Apprenticeship Training Approaches Code: 400.3
Symbols: DSNIP/FDK		Action: Immediate

PURPOSE: To inform the staff of OA and the State Apprenticeship Agencies (SAA), Registered Apprenticeship program sponsors (Sponsor) and other Registered Apprenticeship partners of the replacement of Circulars 95-05 and 2005-03. The purpose of this Circular is to establish compliance and practical design policy for the time-based, competency-based and hybrid approaches for completion of an apprentice’s term of apprenticeship. These policies are intended to facilitate Sponsors’ efforts to develop and implement program standards that fully integrate apprentices’ on-the-job learning and related instruction into the term of apprenticeship, and to assist with the transition from time-based to hybrid and competency-based training approaches.

BACKGROUND: An apprenticeable occupation must meet the requirements of Title 29 Code of Federal Regulations (CFR) part 29, Section 29.4, Criteria for apprenticeable occupation.

§ 29.4 Criteria for apprenticeable occupations

An apprenticeable occupation is one which is specified by industry and which must:

- (a) Involve skills that are customarily learned in a practical way through a structured, systematic program of on-the-job supervised learning;
- (b) Be clearly identified and commonly recognized throughout an industry;
- (c) Involve the progressive attainment of manual, mechanical or technical skills and knowledge which, in accordance with the industry standard for the occupation, would require the completion of at least 2,000 hours of on-the-job learning to attain; and
- (d) Require related instruction to supplement the on-the-job learning.

Section 29.5(b)(2) permits sponsors to select one of three methods for measuring the completion of the “term of apprenticeship.”

- “Competency-based approach” [Section 29.5(b)(2)(ii)] provides for the apprentice’s progression through apprenticeship through the acquisition of identified and measured competencies.
- “Time-based approach” [Section 29.5(b)(2)(i)] provides for skill acquisition through the apprentice’s completion of at least 2,000 hours of on-the-job learning as described in the work process schedule.

- “Hybrid approach” [Section 29.5(b)(2)(iii)] provides for the measurement of the apprentice’s skill acquisition through a combination of specified minimum hours of on-the-job learning and the successful demonstration of identified and measured competencies.

Per Section 29.5(b)(2)(iv), the program sponsor makes the determination of the appropriate approach, subject to approval by the Registration Agency of the determination as appropriate to the apprenticeable occupation for which the programs standards are registered.

COMPLIANCE AND DESIGN GUIDELINES:

Competency means the attainment of manual, mechanical or technical skills and knowledge, as specified by an occupational standard and demonstrated by an appropriate written and hands-on proficiency measurement.

All training approaches for completion of a term of Registered Apprenticeship have the following characteristics:

- Competencies should be identified and defined through a valid occupational/job task analysis method and directly related to the occupation and the on-the-job learning. Occupations need to be a minimum of 2,000 hours of on-the-job learning, as required by Section 29.4, Criteria for an apprenticeable occupation, and supplemented with the required related technical instruction.
- Time allocations for the workplace activities listed in the work process schedule reflect the training approach utilized.
 - A competency-based approach **does not** require time/hours to be assigned.
 - A hybrid approach requires a minimum and maximum range of time/hours assigned.
 - A time-based approach requires the approximate time/hours.
- Measures or tests of competency attainment and demonstrated skills performance are the responsibility of the sponsor and should be observable, repeatable and agreed to in advance.
 - The methods used to measure or test competency attainment will be defined in the standards of apprenticeship.
 - Assessments should directly link workplace performance requirements with the foundational knowledge and skills (competence) of the apprentice.
 - Assessments on-the-job and off-the-job should be carried out on a structured on-going basis, and include course work, practical assessments and theoretical assessments. Written and practical end-testing may also

be utilized.

- The sponsor should consider utilizing in-house or third-party industry experts as assessors and evaluators of the apprentice's accomplishments.
- Related instruction coursework provides apprentices with the technical, workplace, and knowledge competencies that apply to the job.
 - Theory and task knowledge enable the apprentice to understand the work performed on the job. An analysis is conducted to determine if the skills required in the workplace match the theory and course work that is taught.
 - Related instruction may be front-loaded, segmented, or delivered concurrently with the on-the-job learning. The sequence of related instruction courses should align with the sequence of learning and training required on the job.
 - A minimum of 144 hours for each year of apprenticeship is recommended.
 - Related Instruction may be delivered in a classroom, through academic, vocational, career and technical education courses, and/or via web-based/online courses of equivalent value as approved by the Registration Agency.

(See Attached Dental Assistant DACUM Job Task Analysis and Competency-based Example)

- [Dental Assistant Work Process Schedule – Competency-based Approach](#)
- [DACUM Research Chart for Dental Assistant](#)

Competency-based Approach:

The competency-based approach measures skill acquisition through the individual apprentice's successful demonstration of acquired skills and knowledge, as verified by the sponsor. Programs utilizing this approach must still require apprentices to complete an on-the-job learning component of Registered Apprenticeship. The program standards must address how on-the-job learning will be integrated into the program, describe competencies, and identify an appropriate means of testing and evaluation for such competencies.

Competency-based approaches have an open entry and exit design, which enables apprentices to accelerate the rate of competency achievement or extend the term of training in order to meet performance-based completion requirements.

Hybrid Training Approach:

Sponsors that choose to utilize a hybrid approach must comply with these guidelines for

the competency-based portion of the apprentice's term of apprenticeship. The hybrid approach specifies a minimum and maximum range of hours of on-the-job learning for each task or job requirement, plus the successful demonstration of acquired skills as described by the task statements listed in the work process schedule.

Under the hybrid approach, the term of the occupation cannot be less than 2,000 hours of on-the-job learning, per Section 29.4 Criteria for apprenticeable occupations. However, once a term of a hybrid occupation has been Approved the range of hours may be adjusted upward or downward by twenty-five (25) percent, but not both ways. For example: a hybrid occupation with a range of 3,000 to 4,000 hours can be increased with a range of 4,000 to 5,000 hours.

A minimum/maximum range of hours would also give the apprentice an opportunity to accelerate the completion of the apprenticeship program with the appropriate test and evaluations provided to the apprentice, by the sponsor.

(See Attached Dental Assistant Hybrid-based Example)

- [Dental Assistant Work Process Schedule – Hybrid Approach](#)

Time-based Approach:

A time-based occupation requires completion of a minimum of 2,000 hours, which includes an outline of the specific work processes in which the apprentice will receive supervised work experience and the allocation of approximate amount of time to be spent in each task or job requirement in the work process schedule for that occupation. The term of an approved time-based occupation can be increased or decreased by 25 percent. The term of a time-based occupation cannot be less than 2,000 hours.

(See Attached Dental Assistant Time-based Example)

- [WORK PROCESS SCHEDULE DENTAL ASSISTANT](#)

Table 1: Training Approach Comparison:

Characteristics	Time-based	Hybrid	Competency-based
Must be an approved apprenticeable occupation as required in Section 29.4.	Yes	Yes	Yes
Occupation term requires a minimum of 2,000 hours (one-year) of on-the-job learning.	Yes	Yes	No
An apprentice must be registered in an approved competency-based occupation for twelve (12) calendar	No	No	Yes

months of on-the- job learning.			
Work process schedule task statements are derived from a valid occupation/job task analysis method (expert workers, and subject matter experts).	Yes	Yes	Yes
Outline of the specific work processes and the approximate time requirement for each individual work process.	Yes	No	No
Outline of the specific work processes and the minimum - maximum time requirement for each individual work process.	No	Yes	No
Performance measures are developed from occupation/job task analysis.	N/A	Yes	Yes
Time-based assessment for completion of workplace competencies.	Yes	Yes	No
Performance assessment of workplace skills and task knowledge.	No	Yes	Yes
Written assessment of theory, knowledge, and academic competencies.	Yes	Yes	Yes
The Related Instruction component must comply with all of the provisions of Section 29.5(b)(4).	Yes	Yes	Yes
Related instruction aligns with technical, workplace and academic competencies that apply to the job.	Yes	Yes	Yes
Maximum allowable credit for prior work experience is 50 percent of training.	Yes	Yes	Yes
The apprentices must be evaluated by the employer to determine the competencies they are proficient in or have accomplished to grant them allowable credit for prior work experience.	No	No	Yes
Certificate of Completion will be issued upon satisfactory completion of the requirements of the training approach, as described in the approved Standards of Apprenticeship.	Yes	Yes	Yes
Sponsor maintains record of work-based training, performance assessments and related instruction.	Yes	Yes	Yes

Certificate of Completion of Apprenticeship - Minimum Requirements:

The Certificate of Completion of Apprenticeship will be issued by the Registration Agency to those registered apprentices certified and documented by the Sponsor as successfully completing the apprentice training requirements for the competency-based, hybrid, or time-based approach, as specified in the Standards of Apprenticeship. The apprentice is also required to have worked under the Program Sponsor as a registered apprentice, in the apprenticeable occupation for a minimum of six (6) months, *exclusive* of any prior experience granted.

The Certificate of Completion of Apprenticeship will be issued by the Registration Agency to those registered apprentices certified and documented by the Sponsor as successfully completing the apprentice training requirements for the hybrid, or time-based approach, as specified in the Standards of Apprenticeship. The apprentice is also required to have worked under the Program Sponsor as a registered apprentice, in the apprenticeable occupation for a minimum of 1,000 hours, *exclusive* of any prior experience granted.

ACTION: This policy is intended to assist OA, SAAs and Sponsors and therefore will be utilized by the OA and SAAs to determine if the use of the competency-based approach is suitable for the specific recognized apprenticeable occupation. These policies are designed to ensure that every apprentice has the opportunity to gain all of the necessary knowledge, skills and abilities no matter which approach to the completion of their term of apprenticeship is preferred by their Sponsor.

The OA and SAA staff should familiarize themselves with this Circular.

If you have any questions, please contact Franchella Kendall at (202) 693-3813.

NOTE: This circular is being sent via electronic mail.

Attachments

- [CURRICULUM GAP ANALYSIS TOOL](#)

Dental Assistant Work Process Schedule – Competency-based Approach

Performance Standard Instructions

- A. Task Standards: Indicate “Yes”, “No”, or “N/A”. For acceptable achievement, all individual tasks (1, 2, 3, etc.) should receive a “Yes” or “N/A” response. The mentor will initial/date standard achieved.
- B. Overall Performance Levels: The duty areas (A, B, C, etc.) receive an overall numeric evaluation using the following criteria. The mentor will initial/date level achieved.
- 4** = Can perform this skill without supervision and with initiative and adaptability to problem situations
 - 3** = Can perform this skill satisfactorily without assistance or supervision
 - 2** = Can perform this skill satisfactorily, but requires some assistance and/or supervision
 - 1** = Can perform parts of this skill satisfactorily, but requires considerable assistance and/or supervision
- C. Related Instruction: The curriculum crosswalks to the individual tasks (1, 2, 3, etc.) to ensure that the instructional program addresses each competency area in the work process schedule.

Work Processes	Related Instruction	Task Standard	Performance Level
A. Set-Up Operatory			
1. Place barrier protection			
2. Review patient dental chart			
3. Review dental treatment procedures			
4. Check dental equipment			
5. Arrange dental materials for procedure			
6. Arrange dental instrument tray for procedure			
7. Sharpen dental instruments			

Work Processes	Related Instruction	Task Standard	Performance Level
B. Prepare the Patient			
1. Seat patient (e.g. greet, walk to room, place bib)			
2. Update patient medical/dental history			
3. Take patient vital signs			
4. Inform patient of procedure			
5. Respond to patient questions and concerns			
C. Assist with Dental Procedures			
1. Take (expose) dental radiograph (X-ray)			
2. Develop dental radiograph (X-ray)			
3. Mount dental radiograph (X-ray)			
4. Report patient status to dentist			
5. Record dental charting			
6. Take impressions (e.g. bleaching tray, mouth guards, crowns, study models, temporaries)			
7. Select tooth color shade			
8. Adjust operatory light (e.g. position, dim)			
9. Place topical anesthetic			
10. Pass instruments (e.g. 4-handed dentistry)			
11. Evacuate oral cavity			
12. Retract tongue and cheek			
13. Rinse mouth with water			
14. Dry tooth with air			
15. Place rubber dam			

Work Processes	Related Instruction	Task Standard	Performance Level
16. Place matrix band			
17. Change dental hand piece burs			
18. Place (pack) retraction cord			
19. Mix materials for procedure (e.g. cement, impressions, filling)			
20. Light cure materials			
21. Adjust occlusion			
22. Seat temporary crown			
23. Clean denture			
24. Assess patient's comfort			
25. Record treatment procedures on chart			
D. Maintain Infection Control			
1. Maintain personal vaccinations (e.g. hepatitis A&B, TB tine)			
2. Change barrier protection			
3. Dispose of sharps (e.g. needles, scalpel, suture needles, burs, carpules)			
4. Dispose of biohazard			
5. Sterilize dental instruments			
6. Disinfect operatory			
7. Prevent cross-contamination (e.g. PPE, disposable materials)			
8. Change solutions (e.g. cold sterile, autoclave, ultrasonic)			
9. Disinfect lab cases/models			
10. Maintain evacuation systems (e.g. change traps, run solutions)			
11. Maintain clean work environment (e.g.			

sweep, mop & dust)			
12. Monitor autoclave operation			
Work Processes	Related Instruction	Task Standard	Performance Level
E. Perform Lab Tasks			
1. Adjust prosthetic devices			
2. Re-line dentures			
3. Pour impressions & study diagnostic models			
4. Trim models (e.g. study and diagnostic)			
5. Create stints from models (e.g. bleaching trays, mouth guards, fluoride treatment, and traps)			
6. Prepare lab prescriptions			
7. Create temporary crowns			
8. Replenish lab materials			
9. Adjust dental appliances (e.g. retainer, space maintainer)			
10. Prepare wax tray-ins (e.g. partials and dentures)			
11. Create orthodontic appliances			
12. Create customer impressions tray			
13. Disinfect dental lab			
14. Prepare cast crowns			
15. Change plastic traps			
16. Maintain dental lathe			
17. Maintain model trimmer			
18. Clean alginate trays			
19. Pumice finished product			

Work Processes	Related Instruction	Task Standard	Performance Level
F. Provide Patient Support			
1. Comfort patient (e.g. hold hand, tissue, converse)			
2. Notify patient of recall appointment			
3. Assist in patient referral (e.g. endodontist, oral surgeon)			
4. Instruct patient on pre/post-operative care			
5. Instruct on pre and post treatment medications			
6. Provide oral hygiene instructions (e.g. brush, floss, disclosing solutions)			
7. Provide patient education (e.g. explain crown, root canal, perio disease)			
8. Inform patient on continuing care			
9. Show image of teeth (e.g. intra-oral, digital, X-ray)			
G. Assist with Front Office Functions			
1. Assist in maintaining patient charts			
2. Maintain recall card system			
3. Assist with filing dental insurance			
4. Assist with dental appointments (e.g. schedule, confirm)			
5. Assist with processing billing statements			
6. Assist with patient treatment & cost estimates			
7. Confirm cases with lab (e.g. partials, crowns)			
8. Process patient payment transactions			

Work Processes	Related Instruction	Task Standard	Performance Level
9. Organize bills to be paid by the doctor (e.g. lab, dental supply)			
10. Assist with incoming calls			
11. Call-in patient prescriptions			
H. Maintain Office Supplies			
1. Inventory dental supplies			
2. Order dental supplies			
3. Check-in dental supplies			
4. Organize dental supplies			
5. Restock Operatory/Office with dental supplies			

Related Instruction for Dental Assistant

Modern Dental Assisting, 11th Edition

ISBN: 978-1-4557-7451-7

By Doni L. Bird, CDA, RDH, MA, and Debbie S. Robinson,
CDA, MS

MODULE 1: The Dental Assisting Profession

1. History of Dentistry
2. The Professional Dental Assistant
3. The Dental Healthcare Team
4. Dental Ethics
5. Dentistry and the Law

MODULE 2: Sciences in Dentistry

6. General Anatomy
7. General Physiology
8. Oral Embryology and Histology
9. Head and Neck Anatomy
10. Landmarks of the Face and Oral Cavity
11. Overview of the Dentitions
12. Tooth Morphology

MODULE 3: Oral Health and Prevention of Dental Disease

13. Dental Caries
14. Periodontal Disease
15. Preventive Dentistry
16. Nutrition
17. Oral Pathology

MODULE 4: Infection Prevention in Dentistry

18. Microbiology
19. Disease Transmission and Infection Prevention

20. Principles and Techniques of Disinfection
21. Principles and Techniques of Instrument Processing and Sterilization

MODULE 5: Occupational Health and Safety

22. Regulatory and Advisory Agencies
23. Chemical and Waste Management
24. Dental Unit Waterlines
25. Ergonomics

MODULE 6: Patient Information and Assessment

26. The Patient Record
27. Vital Signs
28. Oral Diagnosis and Treatment Planning
29. The Special Needs and Medically Compromised Patient
30. Principles of Pharmacology
31. Assisting in a Medical Emergency

MODULE 7: Foundation of Clinical Dentistry

32. The Dental Office
33. Delivering Dental Care
34. Dental Hand Instruments
35. Dental Handpieces and Accessories
36. Moisture Control
37. Anesthesia and Pain Control

MODULE 8: Radiographic Imaging

38. Foundations of Radiography, Radiographic Equipment, and Radiologic Safety
39. Dental Imaging, Dental Film, and Processing Radiographs
40. Legal Issues, Quality Assurance, and Infection Prevention
41. Intraoral Imaging
42. Extraoral Imaging

MODULE 9: Dental Materials

- 43. Restorative and Esthetic Dental Materials
- 44. Dental Liners, Bases, and Bonding Systems
- 45. Dental Cements
- 46. Impression Materials
- 47. Laboratory Materials and Procedures

MODULE 10: Assisting in Comprehensive Dental Care

- 48. General Dentistry
- 49. Matrix Systems for Restorative Dentistry
- 50. Fixed Prosthodontics
- 51. Provisional Coverage
- 52. Removable Prosthodontics
- 53. Dental Implants
- 54. Endodontics
- 55. Periodontics
- 56. Oral and Maxillofacial Surgery
- 57. Pediatric Dentistry
- 58. Coronal Polishing
- 59. Dental Sealants
- 60. Orthodontics

MODULE 11: Dental Administration and Communication

Skills

- 61. Communication in the Dental Office
- 62. Business Operating Systems
- 63. Financial Management in the Dental Office
- 64. Marketing Your Skills

DACUM Research Chart for Dental Assistant

DACUM Panel

Deonna Casteel
Dental Assistant
Beaumont, TX

Esther S. Conolly
Dental Assistant
Beaumont, TX

Kim Crysel
Dental Assistant
Silsbee, TX

Francil Hernandez
Dental Assistant
Nederland, TX

DACUM Facilitators

Anne Dorsey
Darrell Grisson
Marge Jeffers
Robert E. Norton, Team Leader

Produced for



Lamar Institute of Technology
Beaumont, TX

Developed by



February 22-23, 2001

DACUM Research Chart for Dental Assistant

Duties

Tasks

A	Set-Up Operatory	A-1 Place barrier protection (e.g., headrest, plastic wrap)		A-2 Review patient dental chart	A-3 Review dental treatment procedures	A-4 Check dental equipment
		B-1 Seat patient (e.g., place bib, pre-rinse, greet, walk to room)	B-2 Update patient medical/dental history	B-3 Take patient vital signs (e.g., pulse, respiration, & blood pressure)		B-4 Inform patient of treatment procedure
B	Prepare The Patient	C-1 Take (expose) dental radiograph (X-ray)	C-2 Develop dental radiograph (X-ray)	C-3 Mount dental radiograph (X-ray)	C-4 Report patient status to dentist	C-5 Record dental charting
		C-12 Retract tongue and cheek	C-13 Rinse mouth with water	C-14 Dry tooth with air	C-15 Place rubber dam	C-16 Place matrix band
C	Assist with Dental Procedures	C-24 Clean denture	C-25 Assess patient's comfort	C-26 Record treatment procedures on chart		
		D-1 Maintain personal vaccinations (e.g., hep. A & B, TB tine)	D-2 Change barrier protection	D-3 Dispose of sharps (e.g., needles, scalpel, suture, needles, burs, carpules,)		
D	Maintain Infection Control	D-9 Disinfect lab cases/models	D-10 Maintain evacuation systems (e.g., change traps, run solutions)	D-11 Maintain clean work environment (e.g., sweep, mop, & dust)		
		E-1 Adjust prosthetic devices	E-2 Re-line dentures	E-3 Pour impressions study & diagnostic models		E-4 Trim models (e.g., study & diagnostic)
E	Perform Lab Tasks	E-10 Prepare wax tray-ins (e.g., partials & dentures)	E-11 Create orthodontic appliances	E-12 Create customer impressions tray	E-13 Disinfect dental lab	E-14 Prepare cast crowns
		F-1 Comfort patient (e.g., hold hand, tissue, converse)	F-2 Notify patient of recall appointment	F-3 Assist in patient referral (e.g., endodontist, oral surgeon)		F-4 Instruct patient on pre/post OP care
F	Provide Patient Support	G-1 Assist in maintaining patient charts	G-2 Maintain recall card system	G-3 Assist with filing dental insurance	G-4 Assist with dental appointments (schedule, confirm)	G-5 Assist in processing billing statements
G	Assist with Front Office Functions	H-1 Inventory dental supplies	H-2 Order dental supplies	H-3 Check-in dental supplies	H-4 Organize dental supplies	H-5 Restock OP/office with dental supplies
H	Maintain Office Supplies					

A-5 Arrange dental materials for procedure	A-6 Arrange dental instrument tray for procedure	A-7 Sharpen dental instruments				
B-5 Respond to patient questions and concerns						
C-6 Take impressions (e.g., bleaching tray, mouth guards, crowns, study models, temporaries)		C-7 Select tooth color shade	C-8 Adjust operatory light (e.g., position, dim)	C-9 Place topical anesthetic	C-10 Pass instruments (e.g., 4-handed dentistry)	C-11 Evacuate oral cavity
C-17 Change dental hand piece burs	C-18 Place (pack) retraction cord	C-19 Mix material for procedure (e.g., cement, impression, filling)		C-20 Light cure materials	C-21 Adjust occlusion	C-23 Seat temporary crown
D-4 Dispose of biohazard	D-5 Sterilize dental instruments	D-6 Disinfect operatory	D-7 Prevent cross-contamination (e.g., PPE, disposable materials)		D-8 Change solutions (e.g., cold sterile, autoclave, ultrasonic)	
D-12 Monitor autoclave operation (e.g., test strips)						
E-5 Create stints from models (e.g., bleaching trays, mouth guards, FL2, & traps)		E-6 Prepare lab prescriptions	E-7 Create temporary crowns	E-8 Replenish lab materials	E-9 Adjust dental appliances (e.g., retainer, space maintainer)	
E-15 Change plasters trap	E-16 Maintain dental lathe	E-17 Maintain model trimmer	E-18 Clean alginate trays	E-19 Pumice finished product		
F-5 Instruct on pre & post treatment medications	F-6 Provide oral hygiene instructions (e.g., brush, floss, disclosing solutions)		F-7 Provide patient education (e.g., explain crown, root canal, RCT, perio disease)		F-8 Inform patient on continuing care	F-9 Show image of teeth (e.g., intra-oral, digital, X-ray camera)
G-6 Assist with patient treatment & cost estimates	G-7 Confirm cases with lab (e.g., partials, crowns)	G-8 Process patient payment transactions	G-9 Organize bills to be paid by doctor (e.g., lab, dental supply)		G-10 Assist with incoming calls	G-11 Call-in patient prescriptions

Duties

Tasks

I

Participate in Continuing Education

I-1 Participate in community service	I-2 Maintain CPR certification	I-3 Obtain radiology certification	I-4 Obtain N2O certification	I-5 Complete C.E. courses	I-6 Attend dental seminars
I-7 Participate in dental workshops	I-8 Attend staff meetings	I-9 Network with colleagues	I-10 Review dental literature	I-11 Participate in O.J.T.	

General Knowledge and Skills

Math skills	Knowledge of dental materials
ADA codes	Knowledge of dental insurance plans
Phone skills	Knowledge of drug interaction
Computer skills	Diet and dental health
Teamwork skills	Pathology and airborne diseases
Organization skills	Emergency procedures
Communication skills	Head and neck anatomy
Dental terminology	Four-handed dentistry
Dental radiology	Use of dental instruments and equipment
OSHA guidelines	
CDC guidelines	

Worker Behaviors

Positive	Honest	Careful
Loyal	Outgoing	Reliable
Patient	Sympathetic	Flexible
Assertive	Persuasive	Ethical
Cheerful	Knowledgeable	Independent
Detail oriented	Pro-active	People oriented
Team player	Sensitive	Able to handle stress
Task oriented	Responsible	Caring
Respectful	Dependable	Alert
Empathetic	Responsible	

Tools, Equipment, Supplies and Materials

Compressor	ADA code book	Panoramic machine
Dental instruments	Copy machine	Air-water syringe
Oxygen	Lead apron	Vacuum former
First-aid kit	Microwave	Poly ether mixing machine
Auto clamp/sterilizers	Micro-etcher	Dental vibrator
X-ray equipment/solution	Sharp containers	Dental software
Dental materials	Lathe	Filing cabinets
Office supplies	Blood pressure cuff	Operator stool
Computer	Nitrogen bottle	Dental asst. stool
Hand pieces	Oxygen bottle	Shade guides
Operatory light	Model trimmer	Cavitron/ultrasonic scaler
Ultrasonic	Evacuation system	Refrigerator/dental materials
Curing light	Operatory chair	Lab materials (stone, plaster)
Amalgamator	KCP equipment	Emergency equipment
Tray set-ups	View box	Cold-sterile solution/container
PDS	Mercury spill kit	X-ray duplicating machine
MSDS	Casting oven	Office policy manual
OSHA	Toys	Intra-oral/digital camera
PPE	Honing machine	Patient brochures
Magazines	Tool Box	TV and VCR videos

Future Trends and Concerns

Salary increases
 Changing insurance coverage
 OSHA regulations
 Changes in state regulation
 Computerization of records
 Additional ADA codes

Acronyms

FL2 =	fluoride treatment
N2O =	nitrous oxide
MSDS =	Material Safety Data Sheets
PPE =	Personal Protective Equipment
OSHA =	Occupational Safety Health Administration
CDC =	Center for Disease Control
ADA =	American Dental Association
KCP =	Kinetic Cavity Preparation
PDR =	Physician's Desk Reference
CE =	Continuing Education
OJT =	On the Job Training
CPR =	Cardio Pulmonary Resuscitation

Dental Assistant Work Process Schedule – Hybrid Approach

Performance Standard Instructions

- A. Hours: These are the minimum/maximum hours that are estimated for the apprentice to attain achievement of the overall duty area (A, B, C, etc.).
- B. Related Instruction: The curriculum crosswalks to the individual tasks (1, 2, 3, etc.) to ensure that the instructional program addresses each competency area in the work process schedule.
- C. Task Standards: Indicate “Yes”, “No”, or “N/A”. For acceptable achievement, all individual tasks (1, 2, 3, etc.) should receive a “Yes” or “N/A” response. The mentor will initial/date standard achieved.
- D. Overall Performance Levels: The duty areas (A, B, C, etc.) receive an overall numeric evaluation using the following criteria. The mentor will initial/date level achieved.
 - 4 = Can perform this skill without supervision and with initiative and adaptability to problem situations
 - 3 = Can perform this skill satisfactorily without assistance or supervision
 - 2 = Can perform this skill satisfactorily, but requires some assistance and/or supervision
 - 1 = Can perform parts of this skill satisfactorily, but requires considerable assistance and/or supervision

Work Processes	Minimum Hours	Maximum Hours	Related Instruction	Task Standard	Performance Level
A. Set-Up Operatory	40	50			
1. Place barrier protection					
2. Review patient dental chart					
3. Review dental treatment procedures					
4. Check dental equipment					
5. Arrange dental materials for procedure					
6. Arrange dental instrument tray for procedure					
7. Sharpen dental instruments					

Work Processes	Minimum Hours	Maximum Hours	Related Instruction	Task Standard	Performance Level
B. Prepare the Patient	40	50			
1. Seat patient (e.g. greet, walk to room, place bib)					
2. Update patient medical/dental history					
3. Take patient vital signs					
4. Inform patient of procedure					
5. Respond to patient questions and concerns					
C. Assist with Dental Procedures	1,000	1,250			
1. Take (expose) dental radiograph (X-ray)					
2. Develop dental radiograph (X-ray)					
3. Mount dental radiograph (X-ray)					
4. Report patient status to dentist					
5. Record dental charting					
6. Take impressions (e.g. bleaching tray, mouth guards, crowns, study models, temporaries)					
7. Select tooth color shade					
8. Adjust operatory light (e.g. position, dim)					
9. Place topical anesthetic					
10. Pass instruments (e.g. 4-handed dentistry)					
11. Evacuate oral cavity					
12. Retract tongue and cheek					
13. Rinse mouth with water					
14. Dry tooth with air					
15. Place rubber dam					

Work Processes	Minimum Hours	Maximum Hours	Related Instruction	Task Standard	Performance Level
16. Place matrix band					
17. Change dental hand piece burs					
18. Place (pack) retraction cord					
19. Mix materials for procedure (e.g. cement, impressions, filling)					
20. Light cure materials					
21. Adjust occlusion					
22. Seat temporary crown					
23. Clean denture					
24. Assess patient's comfort					
25. Record treatment procedures on chart					
D. Maintain Infection Control	80	100			
1. Maintain personal vaccinations (e.g. hepatitis A&B, TB tine)					
2. Change barrier protection					
3. Dispose of sharps (e.g. needles, scalpel, suture needles, burs, carpules)					
4. Dispose of biohazard					
5. Sterilize dental instruments					
6. Disinfect operatory					
7. Prevent cross-contamination (e.g. PPE, disposable materials)					
8. Change solutions (e.g. cold sterile, autoclave, ultrasonic)					
9. Disinfect lab cases/models					
10. Maintain evacuation systems (e.g. change traps, run solutions)					
11. Maintain clean work environment (e.g.					

sweep, mop & dust)					
12. Monitor autoclave operation					
Work Processes	Minimum Hours	Maximum Hours	Related Instruction	Task Standard	Performance Level
E. Perform Lab Tasks	320	400			
1. Adjust prosthetic devices					
2. Re-line dentures					
3. Pour impressions & study diagnostic models					
4. Trim models (e.g. study and diagnostic)					
5. Create stints from models (e.g. bleaching trays, mouth guards, fluoride treatment, and traps)					
6. Prepare lab prescriptions					
7. Create temporary crowns					
8. Replenish lab materials					
9. Adjust dental appliances (e.g. retainer, space maintainer)					
10. Prepare wax tray-ins (e.g. partials and dentures)					
11. Create orthodontic appliances					
12. Create customer impressions tray					
13. Disinfect dental lab					
14. Prepare cast crowns					
15. Change plastic traps					
16. Maintain dental lathe					
17. Maintain model trimmer					
18. Clean alginate trays					
19. Pumice finished product					

Work Processes	Minimum Hours	Maximum Hours	Related Instruction	Task Standard	Performance Level
F. Provide Patient Support	160	200			
1. Comfort patient (e.g. hold hand, tissue, converse)					
2. Notify patient of recall appointment					
3. Assist in patient referral (e.g. endodontist, oral surgeon)					
4. Instruct patient on pre/post-operative care					
5. Instruct on pre and post treatment medications					
6. Provide oral hygiene instructions (e.g. brush, floss, disclosing solutions)					
7. Provide patient education (e.g. explain crown, root canal, perio disease)					
8. Inform patient on continuing care					
9. Show image of teeth (e.g. intra-oral, digital, X-ray)					
G. Assist with Front Office Functions	240	300			
1. Assist in maintaining patient charts					
2. Maintain recall card system					
3. Assist with filing dental insurance					
4. Assist with dental appointments (e.g. schedule, confirm)					
5. Assist with processing billing statements					
6. Assist with patient treatment & cost estimates					
7. Confirm cases with lab (e.g. partials, crowns)					
8. Process patient payment transactions					

Work Processes	Minimum Hours	Maximum Hours	Related Instruction	Task Standard	Performance Level
9. Organize bills to be paid by the doctor (e.g. lab, dental supply)					
10. Assist with incoming calls					
11. Call-in patient prescriptions					
H. Maintain Office Supplies	120	150			
1. Inventory dental supplies					
2. Order dental supplies					
3. Check-in dental supplies					
4. Organize dental supplies					
5. Restock Operatory/Office with dental supplies					
Total Hours	2,000	2,500			

Related Instruction for Dental Assistant

Modern Dental Assisting, 11th Edition

ISBN: 978-1-4557-7451-7

By Doni L. Bird, CDA, RDH, MA, and Debbie S. Robinson,
CDA, MS

MODULE 1: The Dental Assisting Profession

1. History of Dentistry
2. The Professional Dental Assistant
3. The Dental Healthcare Team
4. Dental Ethics
5. Dentistry and the Law

MODULE 2: Sciences in Dentistry

6. General Anatomy
7. General Physiology
8. Oral Embryology and Histology
9. Head and Neck Anatomy
10. Landmarks of the Face and Oral Cavity
11. Overview of the Dentitions
12. Tooth Morphology

MODULE 3: Oral Health and Prevention of Dental Disease

13. Dental Caries
14. Periodontal Disease
15. Preventive Dentistry
16. Nutrition
17. Oral Pathology

MODULE 4: Infection Prevention in Dentistry

18. Microbiology
19. Disease Transmission and Infection Prevention

20. Principles and Techniques of Disinfection
21. Principles and Techniques of Instrument Processing and Sterilization

MODULE 5: Occupational Health and Safety

22. Regulatory and Advisory Agencies
23. Chemical and Waste Management
24. Dental Unit Waterlines
25. Ergonomics

MODULE 6: Patient Information and Assessment

26. The Patient Record
27. Vital Signs
28. Oral Diagnosis and Treatment Planning
29. The Special Needs and Medically Compromised Patient
30. Principles of Pharmacology
31. Assisting in a Medical Emergency

MODULE 7: Foundation of Clinical Dentistry

32. The Dental Office
33. Delivering Dental Care
34. Dental Hand Instruments
35. Dental Handpieces and Accessories
36. Moisture Control
37. Anesthesia and Pain Control

MODULE 8: Radiographic Imaging

38. Foundations of Radiography, Radiographic Equipment, and Radiologic Safety
39. Dental Imaging, Dental Film, and Processing Radiographs
40. Legal Issues, Quality Assurance, and Infection Prevention
41. Intraoral Imaging
42. Extraoral Imaging

MODULE 9: Dental Materials

- 43. Restorative and Esthetic Dental Materials
- 44. Dental Liners, Bases, and Bonding Systems
- 45. Dental Cements
- 46. Impression Materials
- 47. Laboratory Materials and Procedures

MODULE 10: Assisting in Comprehensive Dental Care

- 48. General Dentistry
- 49. Matrix Systems for Restorative Dentistry
- 50. Fixed Prosthodontics
- 51. Provisional Coverage
- 52. Removable Prosthodontics
- 53. Dental Implants
- 54. Endodontics
- 55. Periodontics
- 56. Oral and Maxillofacial Surgery
- 57. Pediatric Dentistry
- 58. Coronal Polishing
- 59. Dental Sealants
- 60. Orthodontics

MODULE 11: Dental Administration and Communication

Skills

- 61. Communication in the Dental Office
- 62. Business Operating Systems
- 63. Financial Management in the Dental Office
- 64. Marketing Your Skills

WORK PROCESS SCHEDULE
DENTAL ASSISTANT
O*NET / SOC CODE: 31-9091.00 RAPIDS CODE: 0101

<u>ON-THE-JOB LEARNING:</u>	<u>APPROXIMATE HOURS</u>
1. Ethics and Personal Appearance (Proper Vocabulary - Grammar)	50
2. Care of Dental Equipment and Office (Order supplies, cleaning, lubricating, maintenance, sterilization of fixed equipment)	50
3. Chair-side Assisting	800
a. (Adopting routine of dentist check list)	
b. Seat and prepare patients	
c. Arrange instruments	
d. Dental charting	
e. Dental history	
f. Instrument passing	
g. Assist with high velocity suction	
h. Passing medication prior to filling	
i. Mixing filling material	
j. Releasing patient	
k. Clean-up after patient leaves	
l. Set up for new patient	
m. Greeting new patient	
4. Dental Office Management	100
a. Good organization	
b. Orderliness	
c. No idle gossip or distracting talk – must include patient in conversation	
d. Making appointments over telephone	
e. Use of pegboard bookkeeping	
f. Operation of telephone recorder	
g. Maintain professional dignity	
5. Dental Anatomy	50
a. Tooth eruption	
b. Proper identification	
c. Know abbreviations for charting	
d. Know dental anatomy pathology	

WORK PROCESS SCHEDULE
DENTAL ASSISTANT
O*NET / SOC CODE: 31-9091.00 RAPIDS CODE: 0101

	APPROXIMATE HOURS
6. Dental Pathology	200
a. Includes all soft tissue intra and extra-oral	
b. Observe all external face features	
c. Note swellings	
d. Note scars	
e. Note pupils of eyes	
f. Note fingernail beds	
g. Note distended vessels	
h. Note blood pressure	
i. Note texture and color of skin	
7. Bacteriology and Sterilization	100
a. Autoclave procedure	
b. Cold sterilization	
c. Cleaning of instruments	
d. Use of special chemicals	
8. Anesthesia	50
a. Preparation of syringe-local	
b. Correct temperature	
c. Advice to patient to prevent self injury	
d. Observe for any hyper-reactions	
9. Dental Roentgenology	100
a. Periapical film procedure	
b. Panolipse film procedure	
c. Developing film procedure	
d. Proper mounting of film	
e. Basic X-Ray interpretation - able to recognize and correct mistakes	
10. Oral Hygiene of Pedondontra	100
a. Tooth brush instructions	
b. Communications and psychological entertainment of patient	
c. Demonstration of instruments	
11. Diet and Nutrition	50
a. Be able to supply patients with diet information	
b. Know carbohydrate chemistry and explain	

WORK PROCESS SCHEDULE
DENTAL ASSISTANT
O*NET / SOC CODE: 31-9091.00 RAPIDS CODE: 0101

	<u>APPROXIMATE HOURS</u>
12. Orthodontia	50
a. Recognize predisposing factors	
b. Suggest corrections	
c. Inform and illustrate	
13. Pharmacology	50
a. Recognize basic dental drugs	
b. Know side effects	
14. Treatment of Emergencies	100
a. Acquire professional assistance	
b. Know basic life support systems	
c. Know CPR basics	
15. Impression Material and Models	150
a. Assist in impression taking	
b. Mix all impression material	
c. Pour models	
TOTAL HOURS	2,000

**RELATED INSTRUCTION
DENTAL ASSISTANT
O*NET /SOC CODE: 31-9091.00 RAPIDS CODE: 0101**

	<u>APPROXIMATE HOURS</u>
1. Sterilization Procedures, Sanitation, and Personal Hygiene	24
2. Care of Dental Equipment	24
a. Recordkeeping and Charting	
b. X-Ray Technique and Safety	
c. Dental Prophylaxis and Oral Health	
d. Peritonitis	
3. Care of Dental Equipment and Supplies	24
o Use of Equipment	
4. Operative Dentistry	24
5. Diagnosis and Armamentarium	24
6. Dental Specialties and Instruments	24
TOTAL HOURS	144

CURRICULUM GAP ANALYSIS TOOL

Course Topic	Targeted Skill	Curriculum Gap	Course Gap	Course / Curriculum Acceptable
Introduction to Print Reading	Print Reading	X	X	No
Introduction to Welding	Welding		X	No
Machine Maintenance & Installation	Machining			Yes
Fluid Power Basics	Fluids	X		No
Basic Electricity	Electric			Yes

Key	
Curriculum Gap	Curriculum does not incorporate course that develop identified skills
Course Gap	Course exists, but there are gaps in the existing content that need to be filled in order to develop the necessary job skills

This gap analysis tool is used to ensure that the related instruction program aligns with the technical, workplace and academic competencies that apply to the job.

When looking to modify or customize an existing curriculum, it is important to start with a review of what currently exists. For example, first review the community college's current curriculum to determine if it is a fit. Next, perform a gap analysis to see if there are any course or curriculum gaps to be addressed. Select the courses that best fit the apprenticeship program needs. Additional courses may need to be created to fit the training needs of the business.

Here are some key questions to consider:

- Will the current curriculum fill the learning/theoretical side of the identified skill gaps?
- Will the theory enable the apprentice to understand the work performed on the job?
- Does the sequence of topics compliment and align with the sequence of learning and training that occurs on the job?

The program sponsor can gather feedback from companies and industry experts to evaluate whether the courses will equip apprentices with the knowledge needed to apply to the job (course gap) and whether the necessary courses are included in the curriculum (curriculum gap) by having them complete the gap analysis tool above.

Source: *Course, Program, and Curriculum Gaps: Assessing Curricula for Target Change*
<http://fie-conference.org/fie2005/papers/1600.pdf>