Task Listings Resulting from the Vocational Competency Measures Project. Memorandum Report.

This memorandum report consists of 14 task listings resulting from the Vocational Competency Measures Project. (The Vocational Competency Measures Project was a test development project that involved the writing and verification of task listings for 14 vocational occupational areas through over 225 interviews conducted in 27 states.) Provided in the report are task listings for the following occupations: agricultural chemicals application technician, farm equipment mechanic, computer operator, word processing specialist, grocery clerk, hotel (motel) front office personnel, dental assistant, physical therapist assistant, fashion and fabric sales and sewing, electronics technician, restaurant service occupations, water and wastewater treatment technician, diesel mechanic, and carpenter. The task listings include general concepts and tasks, job-specific tasks, and, where applicable, safety procedures. Attached to each task listing are references from which the initial task inventory was derived. (MN)
MEMORANDUM REPORT

Task Listings Resulting from the Vocational Competency Measures Project

Prepared under
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with
Office of Vocational and Adult Education
U. S. Department of Education
Washington, D. C. 20202

American Institutes for Research
Palo Alto, California 94302

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As part of the Vocational Competency Measures (VCM) Project, task inventories were developed in each of 14* occupations selected for initial test development. The content of each task inventory was gathered from several sources, such as previously developed task inventories, textbooks, and other training material. The complete task inventory for each occupation was then structured as a survey instrument for use during interviews with supervisors and job incumbents across the country. The number of interviews for each occupation ranged between 12 and 25. Altogether, our task verification phase involved over 225 interviews in 27 states and the District of Columbia.

All respondents were asked to rate each task with respect to how often it was performed on the job on a four-point scale, and its importance to the overall job on a three-point scale. The two ratings were then summed, with responses from supervisors given added weight. The findings of the task verification surveys served as a basis for developing vocational competency measures.

The following lists of job tasks have been prepared based on the findings of the VCM task verification survey. Because this listing is intended for use as a source of possible instructional areas, a somewhat more liberal criterion for inclusion was used than that used in selecting tasks to be included in the VCM tests. All tasks that received an average rating of "2" or more on the seven-point scale (combined frequency and importance scales) have been included. This means that tasks that were considered of moderate importance are included in the list, as well as those considered of low importance, if they were performed at least monthly.

Attached to each task listing are references from which the initial task inventory was derived. These references, combined with the task listings, should provide useful information for the development and review of training programs.

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*During the process of test development, two tests were divided so as to increase their flexibility and the number of programs for which they would be appropriate. These were: Fashion/Fabric Sales and Sewing, which was divided into three tests: Apparel Sales, Fabric Sales, and Custom Sewing; Water/Wastewater Technician was divided into Water Treatment Technician and Wastewater Treatment Technician.
Task inventories for the following occupations are provided:

- Agricultural Chemicals Applications Technician
- Farm Equipment Mechanic
- Computer Operator
- Word Processing Specialist
- Grocery Clerk
- Hotel (Motel) Front Office
- Dental Assistant
- Physical Therapist Assistant
- Fashion/Fabric Sales and Sewing
- Electronics Technician
- Restaurant Service (Waiter, Waitress, Cashier)
- Water/Wastewater Treatment Technician
- Diesel Mechanic
- Carpenter
Task Inventory for

AGRICULTURAL CHEMICALS APPLICATIONS TECHNICIAN*

General Tasks
Set up applicator equipment using shop manuals
Compute basic calculations
Pick up and deliver chemicals
Pick up and deliver applicator equipment
Maintain power tools

Safety
Warn persons prior to application of hazardous chemicals
Instruct employees and/or customers in safe working procedures
Match safety equipment to chemicals used
Check respirators for fit and effectiveness
Inspect protective clothing (gloves, goggles, etc.) before using
Perform safety checks on applicator equipment
Decide on safe weather conditions for application
Insure that procedures follow product directions
Maintain proper storage conditions (moisture, temperature, etc.)
Recognize pesticide poisoning symptoms

Chemical Mixing
Assess compatibility and select chemicals for specific problems
Select mixing method
Select adjuvants: wetting agent; adhering agent
Compute proportions of active ingredients required
Determine amounts of chemicals to be applied
Measure volume of chemicals
Weigh chemicals
Mix chemicals and carrying agents

*Based on 19 interviews in the following states: California, Georgia, Montana, New York, and Utah
Task Inventory for

AGRICULTURAL CHEMICALS APPLICATIONS TECHNICIAN

Chemical Mixing (cont.)

Prepare fertilizer-chemical mixtures

Load chemicals in tanks and hoppers

Consulting and Problem Recognition

Identify weed and weed seeds commonly found in crops grown locally

Identify and classify insects and insect damage

Identify seed-borne diseases

Identify soil deficiencies based on plant symptoms

Recognize symptoms of common pest damage to crops

Recognize symptoms of fungi or bacteria

Recognize symptoms of plant damage due to:
   (a) chemical selection
   (b) application errors

Take soil samples

Recommend fungicide program (timing, type, rate, method)

Recommend insecticide program (timing, type, rate, method)

Recommend fertilizer program (timing, type, rate, method)

Recommend treatments to adjust pH to appropriate levels

Explain to customers the effect of chemical application:
   (a) harvest delay
   (b) reentry delay
   (c) effects on plants of pests

Refer customers to sources of consultation and analysis on chemicals and pests

Equipment Preparation and Repair

Set up or assemble equipment received from factory

Determine discharge rate required
Task Inventory for

AGRICULTURAL CHEMICALS APPLICATIONS TECHNICIAN

Equipment Preparation and Repair (cont.):

Calibrate volume, pressure, and output of equipment

Adjust mixing apparatus to maintain proper solution quality

Adjust equipment to achieve desired distribution pattern

Select and match nozzles for equipment type and application pattern

Adjust nozzle pressure for various pesticide applications

Repair and maintain equipment:
(a) sprayer ____________________________
(b) duster _____________________________
(c) spinners or spreaders _______________
(d) band applicators _________________
(e) fumigators ________________________

Equipment Operation

Operate granular-type chemical application equipment

Operate dust-type chemical application equipment

Operate:
(a) tractor-mounted sprayers
(b) self-propelled sprayers
(c) wheel-mounted draw sprayers

Use the following nozzles:
(a) flat fan
(b) even fan
(c) flooding
(d) boomless
(e) off-center
(f) solid cone
(g) hollow cone

Operate specialized equipment:
(a) high-pressure sprayers
(b) air-blast sprayers
(c) low-volume "mist blowers"

Operate fumigator equipment:
(a) low-volatility liquid
(b) gas-type

Implement application pattern (broadcast, directed spray, band treatment, pre- or post-emerge)

Regulate speed of application

Regulate rate of application discharge
Task Inventory for

AGRICULTURAL CHEMICALS APPLICATIONS TECHNICIAN

Equipment and Chemical Storage
Drain systems prior to storage
Flush closed systems of residues
Remove dirt and residue from hoppers, deflectors, fans, etc.
Dispose of chemical containers
Dispose of unwanted chemicals
Store unused chemicals

Clerical/Customer Service
Calculate service and materials charges
Prepare charge and cash billing forms
Receive checks, cash, or purchase orders
Prepare sales tickets or receipts
Maintain freight records
Verify bills of lading
Post order forms for deliveries of products and services
Maintain security of merchandise and equipment
Order, reorder, and receive merchandise
Compute costs and expected returns in use of different chemicals
Handle customer complaints
References for

AGRICULTURAL CHEMICALS APPLICATIONS TECHNICIAN


EPA. Safe Storage and Disposal of Pesticides, 1978

EPA. Some Answers on the Certification of Pesticide Applicators.

Curriculum and Instructional Materials Center. State Dept. of Voc & Tech. Ed., Stillwater, OK Agriculture II - Student Material (Has section on Ag. Chem.)
Task Inventory for

FARM EQUIPMENT MECHANIC*

General Equipment Tasks
Assemble machinery from drawings
Identify parts from drawings
Set up machines using shop manuals
Preservice machinery
Operate steam cleaner or high pressure washer
Pick up or deliver machinery

Assembly, Adjustment, Repair of Equipment

Planting and tillage equipment:
Calibrate planter for row width and seed count
Remove and replace furrow openers
Set up/assemble grain drill
Clean and service grain drill for storage
Set up/assemble planter
Adjust planting depth on planter
Install fertilizer hose
Select and install correct seed plates
Calibrate hydraulic transport and leveling system
Clean and service planter for storage
Install and service no-till coulters
Service and adjust feed drills:
  a. fluted
  b. double run
Repair and adjust fertilizer drill
Calibrate planter fertilizer rate
Set up plow

*Based on 25 interviews in the following states: California, New York, Ohio, Oklahoma, and Wisconsin
Task Inventory for

FARM EQUIPMENT MECHANIC

Assembly, Adjustment, Repair of Equipment (cont.)

Assemble cultivator
Align sweeps
Adjust sweeps for trailing and furrow filling
Service and adjust tandem disc
Set up folding gangs
Set up carrier for cultivators
Set up spring or spike-tooth harrow
Set up rotary hoe
Clean and service plow for storage

Combine/storage systems:
Adjust cylinder and concave
Repair thrashing system
Adjust straw walkers
Inspect and repair sickle bar, knives, guards, wearplates
Clean and service combine for storage
Adjust and service boot grain supply augers
Adjust and service cleaning unit
Inspect and service separating unit
Attach platform and grain feeder to separator
Adjust auger height
Remove and replace unloading auger
Adjust rear axle width
Adjust reel speed
Clean and service grain and tailing elevators
Task Inventory for

FARM EQUIPMENT MECHANIC

Assembly, Adjustment, Repair of Equipment (cont.)

Forage harvesting systems:
Time and test baler
Service and adjust knottter
Assemble baler
Adjust shear bar
Adjust cutting bar
Remove and replace sickle knives, guards, and wear plates
Adjust or replace lifting mechanism
Remove and replace cylinder knives
Replace rake teeth
Install and adjust swath deflectors
Inspect and service auger
Install and service bale injector
Adjust tying mechanisms
Service and repair twine wrapping mechanism
Service hydraulic bale compression system
Adjust for correct bale density and diameter
Repair and replace forage deflects
Adjust or replace inner or outer mower shoe
Install wagon hitch or baler
Service and adjust pickup conveyor
Align strippers with rake teeth
Adjust reel speed
Engines and Electrical

- Maintain and repair four-cycle engines
- Maintain and repair two-cycle engines
- Maintain and repair diesel engines
- Maintain and repair transmissions
- Reface valves and valve seats
- Replace rings
- Clean and inspect crankcase
- Change oil and filter
- Inspect and change coolant

Service:
  - Oil bath air cleaner
  - Oiled filter air cleaner
  - Dry filter air cleaner

Service fuel strainer

Service crankcase

Service batteries and cables

Identify and correct sources of engine oil contamination

Change spark plugs

Clean and regap spark plugs

Replace ignition contact points and condenser

Maintain electrical motors/generators

Repair or replace electrical wiring

Use electrical meters:
  - Ohmmeter
  - Voltmeter
  - Ammeter
Hydraulics
Remove, clean, and replace hydraulic filters
Remove and replace telescoping hydraulic cylinders
Clean and replace hydraulic lines
Identify and correct hydraulic leaks
Replace hydraulic rings
Replace hydraulic fittings
Bleed hydraulic systems

Welding
Perform:
  a. arc welding
  b. oxyacetylene welding
  c. braze welding

Miscellaneous
Maintain pumps and irrigation systems
Read and interpret blueprints/schematics
Cut, ream, or thread metal pipe
Assemble pipe and pipe fittings:
  a. plastic pipe
  b. copper pipe
  c. other-metal pipe

Safety
Store and handle solvents and fuels
Install and adjust safety guards on machinery
Select and maintain fire extinguishers
Read and interpret safety signs, symbols, and color codes
References for

FARM EQUIPMENT MECHANIC

California Occupational Guide. Farm Equipment Mechanic.
State Dept. of Vocational & Technical Education, Stillwater, OK. Vocational Agriculture Education Agricultural Mechanics

International Harvester. Setting Up Instructions:
- grain header, balers, combines (1440,1460,1480, 615,715), corn headers,
- Conser-till plow, chisel plow + 55 Conser-till attachments, Vibra chisel, Vibra shank cultivator,
- Mount-O-Matic leaders, drain drill

Task Inventory for

COMPUTER OPERATOR*

General Concepts

Prepare data for entry into computer
Input data from production records
Test-run new or modified programs
Assist in maintaining, modifying, and developing operating systems or programs

Use utility programs for:
   a. sorting data
   b. reformatting data
   c. writing data to disk, tape, card, or printer
   d. initializing tapes
   e. allocating space on disk for new files

Generate the following:
   reports
   special reports
   special forms

Storage Media (characteristics and use)

Store and issue data files, programs, and operating procedures for computer processing
Maintain records of files:
   a. document location of programs, files
   b. maintain documentation

Transfer backup files to and from an alternative storage site(s)
Purge file systems
Prepare card reproductions
Create and store data files
Update records in files
Perform card-to-tape run
Prepare backup data for storage
Load and store tape reels

*Based on 24 interviews in the following states: California, Iowa, New York, and Oklahoma
Task Inventory for

COMPUTER OPERATOR

Storage Media (cont.)

Document tape contents
Load and store disk packs
Document/store card decks

Peripherals and Off-line Equipment

Print special forms (i.e., labels, bills, reports) on printer

Load/operate the following:

80-column keypunch
 card reader
 automatic card punch
 printer
 tape drive
 disk drive
 magnetic character reader
 CRT terminal
 graphics generating peripheral device: hardcopy devices, terminals
 computer console

Perform operator maintenance on:

80-column keypunch
 line printers
 tape drives

Routine Operations

Power up and power down:
 a. computer
 b. peripherals

Perform stacked-job processing

Sort data files

Control basic input into data systems

Analyze data processed to assure that desired information was obtained

Load any operating system(s)

Service printer

Clean and condition magnetic tapes
Task Inventory for

COMPUTER OPERATOR

Routine Operations (cont.)

Inventory data processing supplies
Obtain supplies for work area
Coordinate with users and programmers
Clean and maintain work areas

Troubleshooting

Verify output for obvious errors
Detect operational problems:
   a. diagnose source of trouble
   b. correct the problems in computer and peripherals
   c. decide to notify maintenance personnel
   d. check equipment after maintenance for proper operation

Check errors with supervisor or programmers
Inform supervisor of repeated errors in input data
Switch to emergency backup procedures or power supplies
Develop operating instructions and techniques to cover problem situations

Deviate from standard procedure to avoid:
   a. loss of information
   b. waste of computer time
   c. downtime of equipment
   d. equipment that has failed

The Computer Operator Job

Maintain logs for user charges:
   a. computer
   b. supplies

Maintain confidentiality of data
Maintain security of computer facility
Maintain system access security
References for

COMPUTER OPERATOR

Occupational Analysis: Data Entry Operator,
Colorado State Univ., Ft. Collins
(Publication #0A06)

Principles of Business Data Processing,
3rd Edition, Dock & Essick, SRA

U.S. Dept. of Labor Occupational Description, Office of Wages and Industrial Relations, January 1979

Development of Task Performance for a New Office and Business, Education System (NOBELS), Center for Vocational Education, Ohio, September 1972

Descriptive materials - Laney College (Oakland, Calif.) and Monterey Peninsula College (Calif.)
Task Inventory for

WORD PROCESSING SPECIALIST*

Technical Information

Keyboard and print:
  a. correspondence
  b. reports
  c. budgets
  d. preprinted forms

Operate standard keyboards

Gain access to systems

Terminate operations

Operate keyboard function keys

Operate blind stations

Operate visual display stations

Develop user defined program sequences

Implement program sequences

Use new hardware and software features

Use reference materials

Queue outputs

Operate storage function controls

Use floppy disks to store, retrieve, and/or duplicate information

Initialize disks

Delete information from storage

Handle and store media

Operate paper handling devices

Operate output device function controls

Use impact printers

Replace ribbon cartridge on equipment

Use telecommunication features

Perform operator maintenance

*Based on 12 interviews in the following states: California, Indiana, and Texas
Task Inventory for

WORD PROCESSING SPECIALIST

Technical Information (cont.)

Determine sources of malfunctions

Correct or report malfunctions

Use standard formats for letters, memos, reports, tables, and outlines

Use universal and in-house standard format manuals

Suggest and implement unique formats

Design record processing input and output formats

Interpret coding of format

Compose documents to be formatted

Log in/out jobs

Keep personal production records

File magnetic media and/or hard copy according to established guidelines

Maintain files according to established guidelines

Search log/index to locate documents

Use copy machines

Use editing capabilities of equipment

Regulate controls on transcribing equipment

Judgment

Accept job instructions

Record job instructions

Establish specifications

Establish priorities

Confirm schedules

Handle confidential materials discreetly

Interact with coworkers and supervisors
Task Inventory for

WORD PROCESSING SPECIALIST

Judgment (cont.)
Interact with originators
Interact with other personnel
Use trade terminologies
Demonstrate equipment to originators
Interpret originators' revisions
Examine documents for visual appeal
Prepare error-free final copy
Update procedures manual
Maintain work areas
Distribute final copies
Receive and send mail
Report supply needs
Clean and maintain equipment

Supervisory
Supervise the word processing center
Supervise clerical support

English
Use correct grammar, spelling, and punctuation
Transcribe from dictation equipment
Transcribe from handwritten copy
Transcribe from typed copy
Use reference materials
Read documents for accuracy
Check documents for format consistency
Task Inventory for

WORD PROCESSING SPECIALIST

English (cont.)

Mark corrections legibly.

Use proofreaders' marks.

Identify errors during playback.

Rewrite sentences to obtain correct structure.

References for

WORD PROCESSING SPECIALIST

Colorado State, Word Processor: Entry-Level Duties and Tasks chart.

V-TECS. Catalog.
Task Inventory for

GROCERY CLERK*

General Procedures
Adhere to company policies and procedures
Adhere to established safety standards
Follow employee policies and procedures
Adhere to union contracts
Perform basic math
Maintain store safety and security procedures
Accomplish job/tasks within defined time limits
Clean merchandise and store
Check status of coolers/refrigerators
Use and maintain store equipment
Use telephone for business purposes
Requisition department supplies
Apply store shoplifting policies

Checking
Apply accuracy in
a. record-keeping
b. time-keeping
c. stock-keeping
d. money-handling
Correct and record pricing errors
Use cash register
Correct cash register errors
Apply taxes to goods sold
Make change
Calculate reimbursements (coupons, bottles, etc.)
Verify check entries and cancel checks
Prepare credit card forms

*Based on 18 interviews in the following states: Alabama, Arizona, California, District of Columbia, and Virginia
Task Inventory for

GROCERY CLERK

Checking (cont.)

Translate universal pricing code into selling price
Bag purchases
Use tax computation charts
Count, collect, and sign for money
Compute single unit pricing
Apply end-of-day closeout procedures
Authorize customer checks

Stocking

Put up signs for advertised merchandise
Determine adequacy of stock for advertised merchandise
Describe products by:
   a. cut or type (for meat)
   b. kind (for produce)
   c. manufacturer
   d. brand name
   e. grade
Move merchandise forward on shelves
Store deliveries
Maintain stock on shelves
Use scales
Separate bulk quantities into saleable units
Report, store, and dispose of damaged or spoiled merchandise
Check produce for spoilage
Rotate dated stock on shelves
Take stock counts
Change price tags on goods
Package merchandise
Maintain and organize stockroom
Task Inventory for

GROCERY CLERK

**Stocking** (cont.)
Place price cards
Write purchase orders
Regularly rearrange merchandise locations
Decide when special pricing is needed
Place merchandise orders
Check merchandise against invoices
Decide on desirable location for displays
Prepare displays
Maintain (restock) display merchandise
Decide on appropriate appearance/style for display
Display associated products together
Decide when displays are to be changed
Decide which products to display
Maintain records for price changes
Inform store buyers about duplicates or requisition items

**Customer Relations**
Represent the business favorably to customers
Direct customers to advertised merchandise
Assist customers with special needs
Handle customer inquiries
Interpret merchandise information
Handle customer complaints
Maintain flow of checkout traffic
Suggest additional items to customers
Process exchanges and refunds
Task Inventory for
GROCERY CLERK

Customer Relations (cont.)
Inform customers about changes in prices and products
Provide merchandise information for customer protection
Inform customers of substitute items
Direct customers to manufacturers' displays

Interacting with Co-Workers
Communicate with peers
Communicate with management
Use business-like and appropriate speech with co-workers and customers
Follow supervisor's directions
Inform co-workers about product and price changes
Participate in storewide meetings
Voluntarily assist co-worker
Inform co-workers about sales promotions
Give instructions to co-workers
Maintain cooperative working relationships
Compliment co-workers' accomplishments
Help train co-workers
Orient new employees/co-workers
Constructively correct employee errors
References for

GROCERY CLERK

Source

IDECC, National Office
1166 Chesapeake Ave.
The Ohio State University
Columbus, OH 43212

Materials

STUDENT COMPETENCY RECORD
B-6 Food Store - Store Manager
B-5 Head Grocery Clerk/Head Produce Clerk
B-4 Food Store - Head Cashier
B-1 Food Store - Assistant Manager
B-2 Food Store Checker
B-3 Food Store - Grocery Clerk

STUDENT COMPETENCY RECORD - Food Marketing
CRFM-01 Entry Level Occupations
CRFM-08 Mid-level Occupations

Sales Training Dept.
The Quaker Oats Co.
Merchandise Mart Plaza
Chicago, IL 60654

"Quaker Self Study Program in Retail Food Store Operations"
(13 vols., 700 pages, $12.00)
Task Inventory for

HOTEL (MOTEL) FRONT OFFICE*

Front Office Duties

Determine availability of rooms

Recommend room choices within the hotel

Quote appropriate rates

Take room reservation requests and record information

Confirm room reservations by:
  a. mail
  b. telephone

Cancel reservations

File reservations

Maintain telephone directory of guests

Operate:
  a. switchboard
  b. computer terminal (in chain-wide reservation system)

Sort and channel guest mail

Record wake-up call requests

Make wake-up calls

Page guests

Inform housekeeping of rooms that have been vacated

Follow up reports of inadequate cleaning

Inform maintenance of needed repairs

Call vendors if cigarette or other machines need refilling

Relay information to front-desk workers on next shift

Arrange use of hospitality rooms for conventions, clubs, etc.

Provide maps, brochures, and other materials

Call taxicabs for guests

Arrange tours for guests

Inform guests of services available

Keep room boards current

*Based on 13 interviews in the following states: California, Massachusetts, Pennsylvania, and South Carolina
Front Office Duties (cont.)

Make suggestions for entertainment and sightseeing

Supply information on scheduled events (activities, meetings, banquets, etc.)

Perform closing procedures:
  a. turn off electric display lighting or signs
  b. empty cash drawer
  c. set burglar alarm

Implement emergency call procedures for:
  a. medical doctor
  b. police
  c. fire department
  d. ambulance
  e. plumber
  f. electrician

Processing Guests

Greet guests

Verify guest reservations

Assist guest in completion of registration card

Time-stamp registrations

Arrange payments from guests

Make out preliminary credit form or secure credit information from guests

Check for advance guest mail and messages

Issue keys

Direct guests to rooms

Arrange transfer of guests to other rooms

See to guests' complaints

Maintain folders of guests' charges

Receive room key/check out guests

Suggest accommodations elsewhere, if needed
Task Inventory for
HOTEL (Motel) Front Office

Processing Guests (cont.)
Give travel and route directions to guests
Carry out special requests of guests (within hotel policy)

Cashier and Accounting Duties
Operate posting machine
Operate cash register
Operate calculator
Make correct change
Receive, sort, and post charge slips
Make out receipted bills
Make disbursements (for C.O.D.s and similar items)
Authorize personal checks to be cashed
Cash personal checks for guests
Cash travelers' checks and money orders
Receive and store guests' valuables in safe or safe deposit box
Receive deposits on rooms
Post charges on room accounts
Verify accuracy of posted charges
Verify credit or check payments:
  a. telephone to obtain credit verification
  b. check listing of stolen or canceled credit cards
  c. check hotel list of bad credit risks
Finalize settlement of accounts
Give receipts to guests
File completed transactions
Balance cash drawers
Task Inventory for

HOTEL (Motel) FRONT OFFICE

Cashier and Accounting Duties (cont.)

Tally number of rooms occupied
Tally number of people in each room
Post room rates and taxes
Post outstanding charges
Detect and correct errors
Reconcile department totals
Balance daily receipts
Balance advance payments
Prepare audit reports
Send/receive bills for payments due
Prepare bank deposits
File vouchers
Prepare phone charges
Send bills to credit card companies

Management

Plan advertising and sales promotion
Supervise porters
Keep employee time records
Help guests plan banquets, receptions, conventions, etc.
Schedule working hours for housekeeping employees
Make out manager's reports (breakdown of income)
Authorize equipment, supplies, foodstuff purchases
## References for HOTEL (MOTEL) FRONT OFFICE

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<thead>
<tr>
<th>Source</th>
<th>Materials</th>
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<tbody>
<tr>
<td>DEML, The Ohio State University</td>
<td>Suggested Curriculum Outline</td>
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<tr>
<td>123 Townstead Hall</td>
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<tr>
<td>1885 Neil Avenue</td>
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<tr>
<td>Columbus, OH 43210</td>
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IDESCC STUDENT COMPETENCY RECORD

CRHM-16 Hotel/Motel/Lodging
Entry-level Occupations
CRHM-17 Mid-level Occupations

STUDENT COMPETENCY RECORD

C-5 Catering Manager
C-1 Assistant Manager
C-2 Bell Captain
C-3 Bellman
C-4 Building Superintendent
C-6 Chef
C-7 Executive Housekeeper
C-8 Manager/Executive Assistant
C-9 Night Auditor
C-10 Purchasing Agent
C-11 Recreation Director
C-12 Reservation Manager
C-13 Room Clerk
C-14 Sales Manager
C-15 Service Superintendent
Task Inventory for

DENTAL ASSISTANT*

Chairside Assisting

Disinfect and aspirate the field of operation
Maintain sterile field of operation during surgery and restorative procedures
Review patient's chart
Set up equipment tray
Position patient
Perform initial oral inspection
Perform periodontal charting
Apply topical agents
Chart teeth from dictation
Review patient's medical/dental status (history)
Take and record blood pressure
Measure and record pulse rate
Select and plan bite blocks
Retract oral tissue (cheeks, lips, tongue, etc.)
Position suction tip
Apply air during inspection and finishing
Clean and dry teeth
Apply water for rinsing
Prepare syringe
Assemble diagnostic instruments and materials
Pass and receive hand instruments
Pass and receive rotary instruments
Assist with rubber dam application or removal
Assist in suture placement
Polish teeth
Assist with cavity preparation

*Based on 20 interviews in the following states: California, New Jersey, New Mexico, New York, and Oklahoma
Task Inventory for
DENTAL ASSISTANT

Chairside Assisting (cont.)

Assist with administration of local anesthetics
Assist with amalgam and composite restorations
Prepare and deliver dental materials:
   a. varnishes
   b. cavity liners
   c. zinc phosphate cement
   d. zinc oxide eugenol (ZOE) cement
   e. zinc oxide eugenol (ZOE) impression paste
   f. composite (filled) resin
   g. silicone elastic impression material
   h. plaster impression material
   i. wax for occlusal registration
   j. zinc oxide eugenol (ZOE) periodontal dressing
   k. non-eugenol periodontal dressing
   l. amalgam
   m. calcium hydroxide base

Medical Emergencies

Maintain equipment for medical emergencies
Recognize emergency symptoms and alert operator/dentist
Perform procedures for maintaining vital functions
Assist in administering required emergency treatment

Sterilization and Disinfection

Prepare instruments for sterilization using the:
   a. manual scrubbing method
   b. ultrasonic cleaner method
Disinfect instruments using a chemical solution
Operate autoclave
Operate dry heat sterilizer
Disinfect operating equipment and room

Patient Instruction

Orally review preventive instructions with patient
Task Inventory for

DENTAL ASSISTANT

Patient Instruction (cont.)
Cite purpose of specific home care prescriptions and directions
Demonstrate preparation, insertion, or application of material
Explain the role of dental plaque
Evaluate and correct patient's toothbrushing and flossing techniques
Answer patient's questions

Laboratory Tasks
Take alginate impression.
Fabricate acrylic temporary crown restoration
Prepare diagnostic casts
Pour study casts
Perform "bench trim" using lab knife
Finish cast using model trimmer

Radiographs
Expose dental radiographs
Process and mount dental radiographs

Office Management
Order supplies when needed
Rotate supplies with limited shelf life
Store supplies in required environment
Perform preventive maintenance on equipment
Maintain patient records
Maintain patient recall system
Arrange appointments
Assemble and provide the operator/dentist with patient records
Task Inventory for

DENTAL ASSISTANT

Office Management (cont.)

Follow established health and safety standards

Update dental charts

Maintain office security procedures

References for

DENTAL ASSISTANT

Competencies of Dental Auxiliary Functions,
ETS Study, Division of Dentistry, Health
Resources Administration

Chairside Assisting Skill Evaluation (CASE),
DHEW Pub. #(HRA) 78-52, 52A, 52B

Task Listing, Program 602 - White Bear Lake
(Minnesota) Area 916 Center

An Analysis of the Dental Assisting Occupation,
The Instructional Materials Laboratory,
Trade and Industrial Education, The Ohio
State University

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Task Inventory for

PHYSICAL THERAPIST ASSISTANT*

Office/Administrative Activities

Record treatment activities and progress

Schedule patients

Participate in quality assurance program

Delegate tasks

Read and interpret doctors' orders, progress notes, operative reports, as well as nurses' and social service notes

Participate in PTA student clinical internship or RPT student internship

Clean office

Run errands

Treatment-Related

Discuss with doctor, and other health care members, a patient's case (problems, progress, etc.)

Modify patient care plans

Periodically re-evaluate patients

Initiate change in plan of care

Perform edema assessment

Assess wound condition

Recognize acute exacerbations (e.g., inflammation) or contraindications of treatment

Apply emergency procedures

Use aseptic techniques

Apply external dressings, bandages, or supports

Use tilt table

Use wheelchair

Assist in set up and removal of EMG biofeedback equipment

Maintain equipment

*Based on 12 interviews in the following states: California, Indiana, and Texas
Task Inventory for

PHYSICAL THERAPIST ASSISTANT

Massage and Exercise

Perform range of motion assessment
Perform posture analysis assessment
Perform manual muscle assessment
Develop exercise plan of care
Select techniques
Set goals
Select equipment

Administer facilitation techniques (PNF, Bobath, Brunstrom Rood)
Administer Williams' Flexion Exercise
Administer back extension exercise
Administer Codman's Pendulum Exercise
Administer maintenance of function exercise
Administer relaxation exercise
Administer strength exercise
Administer range of motion exercise
Administer endurance exercise
Administer balance and coordination exercises
Administer mat exercise programs
Administer peripheral mobilization techniques under supervision
Administer spray and stretch technique
Administer therapeutic massage
Use P. R. E. equipment
Use bicycle
Use bicycle ergometer
Task Inventory for

PHYSICAL THERAPIST ASSISTANT

Physical Modalities
Administer infra-red
Administer hot packs
Administer cold therapy
Administer paraffin treatment
Administer whirlpool therapy; set whirlpool temperature
Administer shortwave diathermy
  a. set the dosage
  b. select the electrodes
Administer ultrasound
  a. set the dosage
  b. select time
  c. select patient area
Administer ultrasound with electrical stimulation
Administer electrical stimulation
  a. select current
  b. select the mode of treatment
  c. select duration of treatment
  d. select intensity
Administer TENS
  a. determine placement of electrodes
  b. determine frequency and duration
  c. regulate current
Administer mechanical traction
  a. select technique
  b. select equipment
  c. select dosage
  d. select patient area

Gait Training
Perform gait assessment
Develop gait training program
Develop plan of care
Set gait training goals
Task Inventory for

PHYSICAL THERAPIST ASSISTANT

Gait Training (cont.)
Select techniques
Select equipment
Instruct patients in gait training techniques

Patient Assistance and Instruction
Plan discharge (i.e., contact social worker, order appropriate equipment, contact home health agency, etc.)
Train patients to use prostheses/orthotheses
Assist patients to put on or take off prostheses/orthotheses
Transfer or position patients
Instruct patients in activities of daily living
Identify architectural barriers and suggest solutions
Instruct patients in breathing exercises
Instruct family members in patient care
Instruct patients in home programs

References for

PHYSICAL THERAPIST ASSISTANT

APTA publication - Competencies in Physical Therapy: An Analysis of Practice. ("Red Book.")

Copy of a draft report on a project supported by the Bureau of Health Manpower of the Public Health Service - carried out by the APTA.
Task Inventory for Fashion/Fabric Sales and Sewing*

**APPAREL SALES**

**General Information**

Help customers reach buying decisions (for "line of figure," fit, style, etc.)

Help customers locate sizes

Instruct customers on care of garment materials

Assist customers in finding apparel and accessories

Help coordinate apparel and accessories for customers

Suggest ways to wear accessories

Assist customers in trying on garments

Provide information about current fashions and colors

Identify fiber content of materials for customers

Check garment on individual for proper fit

Describe quality of workmanship for customers

Coordinate garments suitable for specific occasions

Answer customers' questions about merchandise trends and sizing variations

Measure customers

Analyze fitting problems of customers

Offer suggestions for desirable alterations

Chalk-mark or pin garments for alterations

Estimate alteration costs

Determine pick-up date for altered garments

Prepare a tag indicating alterations

Prepare claim check

Take orders for layaway items

Package customers' purchases

*Based on 17 interviews in the following states: California, Georgia, Illinois, Missouri, and Rhode Island*
Task Inventory for Fashion/Fabric Sales and Sewing

APPAREL SALES

Sales
Operate cash register
Screen checks for correctness
Approve/obtain approval for checks
Verify/obtain authorization on charge cards
Process charge cards
Handle returns and complaints
Identify ordering needs from stock turnover
Take inventories and stock counts
Receive and check merchandise deliveries
Price-mark merchandise
Restock shelves and racks
Keep stock orderly
Assist in maintenance of store and storage rooms
Plan window and interior displays
Set up and maintain displays

Management
Implement plans to reduce stock shrinkage (shoplifting)
Select items for retail advertising
Coordinate out-of-store advertising with store displays
Determine design trends to be carried by store
Design fashion program for the store
Buy apparel for the store
FABRIC SALES

General Knowledge

Explain information on hang tags and fabric bolts (for shrinkage, stretching, ironing, wearing, care, etc.)
Discuss features and qualities of fabrics with customers
Explain how to prevent colors from running
Calculate amounts of fabric required by customers
Measure and cut fabrics and trims
Answer questions about construction techniques
Interpret charts and graphs on sizing
Locate patterns for customers
Determine correct pattern sizes for customers by:
  a. actual measurement
  b. commercial pattern sizes
Advise customers on appropriate underlinings and lining fabrics
Advise customers on notions needed for specific garments
Point out types of notions available
Point out types of interfacings and linings available
Provide information about current fashions and colors
Answer customers' questions about merchandise trends and sizing variations
Take orders for layaway items
Package customers' purchases

Sales

Operate cash register
Screen checks for correctness
Approve/obtain approval for checks
Verify/obtain authorization on charge cards
Process charge cards
Task Inventory for Fashion/Fabric Sales and Sewing

**Fabric Sales**

**Sales** (cont.)

Handle returns and complaints

Identify ordering needs from stock turnover

Take inventories and stock counts

Receive and check merchandise deliveries

Price-mark merchandise

Restock shelves and racks

Keep stock orderly

Assist in maintenance of store and storage rooms

Plan window and interior displays

Set up and maintain displays

**Sewing**

Scale patterns up or down in size

Mark and label pattern

Adjust patterns for figure irregularities

Lay out pattern pieces

Sew seams within prescribed tolerances

Apply interfacing, lining, interlining, and backing to garments

Form and stitch pleats

Sew on zippers

Alter the following for proper fit:

a. crotch
b. side seams
c. waist line
d. pants length
e. hem length
f. sleeve
g. shoulder
h. bust
Task Inventory for Fashion/Fabric Sales and Sewing

**FABRIC SALES**

**Sewing (cont.)**

Repair and replace:

a. zippers
b. pockets
c. buttonholes
d. belt loops
e. linings

**Management**

Implement plans to reduce stock shrinkage (shoplifting)

Select items for retail advertising

Coordinate out-of-store advertising with store displays

Determine design trends to be carried by store

Design fashion program for the store.
Task Inventory for Fashion/Fabric Sales and Sewing

CUSTOM SEWING

General Fashion Knowledge

Feature and qualities of fabrics
How to prevent colors from running
Calculate amounts of fabric required
Measure and cut fabrics and trims
Construction techniques
Interpret charts and graphs on sizing
Locate patterns

Determine correct pattern sizes by:
  a. actual measurement
  b. commercial pattern sizes

Select appropriate underlinings and lining fabrics; interfacing
Select notions needed for specific garments
Information about current fashions and colors
Identify fiber content of materials

Sewing

Scale patterns up or down in size
Mark and label pattern
Adjust patterns for figure irregularities
Prepare fabrics for cutting (preshrinking, etc.)
Lay out pattern pieces
Sew seams within prescribed tolerances
Press garment details during construction
Apply interfacing, lining, interlining, and backing to garments
Form and stitch pleats
Sew on zippers
Press finished garments
CUSTOM SEWING

Sewing (cont.)

Measure and fit garments

Analyze fitting problems

Chalk-mark or pin garments for alterations

Estimate alteration time and costs

Alter the following for proper fit:

a. crotch
b. side seams
c. waist line
d. pants length
e. hem length
f. sleeve
g. shoulder
h. bust

Repair and replace:

a. zippers
b. pockets
c. buttonholes
d. belt loops
e. linings
References for

FASHION/FABRIC, SALES AND SEWING

Area 916. Test 1 800-806. Recognize Women's Ready-to-Wear Products. (Task #750)

Iowa State University (Irene Beavers). Development of Standards for Textiles and Clothing. (Postsecondary programs)


HEW (Irene Beavers). Final Report: Standards for Textiles and Clothing. (Postsecondary programs)
Task Inventory for

RESTAURANT SERVICE (WAITER, WAITRESS, CASHIER)*

Dining Room Activities

Help maintain dining room appearance
Handle customer complaints
Answer telephone
Greet and seat guests
Provide menus and answer inquiries about menu items
Suggest menu items
Take guests' orders and turn in orders
Load and carry trays
Serve courses in correct sequence
Use appropriate serving procedure
Write checks (tabs) and thank guests
Clear tables and wipe off chairs
Clean ashtrays and condiment holders
Respond to guests' requests

Prepare:
  a. dessert dishes
  b. salads
  c. sandwiches
  d. beverages

Portion food onto plates

Use:
  a. coffee urns
  b. roll warmers
  c. mixers
  d. refrigerators
  e. freezers
  f. steamers
  g. beverage dispensers
  h. serving carts/trays

*Based on 14 interviews in the following states: Alabama, California, Illinois, Massachusetts, New York, Pennsylvania, and South Carolina
Task Inventory for

RESTAURANT SERVICE (WAITER, WAITRESS, CASHIER)

Dining Room Activities (cont.)
Set up station
Restock station
Clean station
Restock condiments on tables
Restock clean dishes and flatware
Restock ice
Set up back bar or side stand
Set up salad bar
Fold napkins
Arrange and clean menus
Fill beverage dispensers
Place decorations in serving areas
Requisition supplies

Cashier Activities
Prepare cash drawers
Accept payments
Operate cash register
Write and add checks (tabs)
Process credit card sales
Authorize customers' checks and process
Compute tax
Verify cash in drawer
Verify amount of restaurant checks (tabs)
Prepare customer receipts
Task Inventory for

RESTAURANT SERVICE (WAITER, WAITRESS, CASHIER)

Cashier Activities (cont.)
Process credit card tips
Prepare deposits
Prepare shift report

Sanitation and Safety (Knowledge of)
Report equipment needing repairs
Maintain personal hygiene
Keep bus trays empty
Follow procedures to prevent spoilage or contamination of foods
Sanitize surface areas
Sanitize equipment
Check and clean rest rooms
Apply emergency procedures:
  a. exit directories for guests
  b. fire extinguishers
  c. first aid
Check for and report presence of insects and rodents
Report and correct hazards
Assist handicapped guests
Report and store or dispose of damaged merchandise
Check shelf life of food items

General Restaurant Knowledge
Perform periodic inventories and take stock counts
Perform inventory spot check
Check production sheets
Establish pilferage controls
Task Inventory for

RESTAURANT SERVICE (WAITER, WAITRESS, CASHIER)

General Restaurant Knowledge (cont.)

Predict quantities to be purchased
Select fresh produce
Calculate food costs
Calculate size and number of servings per case
Develop purchasing system
Check quality of purchased food

Supervisory Functions

Ensure use of standardized recipes
Establish good employee relations
Establish good customer relations
Establish waste controls
Give instruction in proper service
Conduct inspections of ongoing service
Develop menu planning system
Prepare labor cost summary
Conduct a meal count
Gather information on competitive market conditions
Schedule food preparation
Schedule personnel
Prepare a food cost summary
References for

RESTAURANT SERVICE (WAITER, WAITRESS, CASHIER)

Curriculum: Food Service Production and Service, Mid-America Vocational Curriculum Consortium (MAVCC), Stillwater, Okla.

Occupational Analysis: Food Service, Colorado State Univ., Ft. Collins, (Publication #0A23)

Food Service Aid – White Bear Lake (Minn.) Area 916 Center

Exploration of Food Management Production and Services Occupation: Performance Objectives and Criterion Measures, Duval County School Board, 1975 (ED 193-965)

Occupational Food Service Education: A Competency-Based Articulation Model, Southwest Wis. Voc.-Tech. Institute, 1976

Vocational Education Program Courses Standards (Food Service), Florida Dept. of Education, July 1979
Task Inventory for

ELECTRONICS TECHNICIAN*

Using General Purpose Test Equipment
Oscilloscopes
Volt-ohmmeters
Function generators
Frequency counters
Resistance decade boxes
Capacitance decade boxes
Power supplies
Transistor testers

Using Hand Tools
Soldering irons
Wire strippers
Crimping tools
Sidecutters
Long nose pliers
Hand drills
Wire wrapping tools
Solder suckers
Solder wicks
Heat sinks
Alignment tools

Troubleshooting
Perform visual inspections
Analyze symptoms
Utilize calibration procedures to isolate faults
Utilize test procedures to isolate faults

*Based on 16 interviews in the following states: California, Florida, Massachusetts, Maryland, and Tennessee
Troubleshooting (cont.)
Isolate faults by tracing and injecting signals
Isolate faults to module levels
Analyze voltage and current measurements
Analyze resistance measurements
Analyze analog circuitries
Analyze digital circuitries
Trace circuits to identify and isolate faults
Conduct in-circuit tests of components
Substitute components to isolate faults
Isolate faults to component levels

Selecting and Replacing Components
Resistors
Capacitors
Inductors
Discrete semi-conductor devices
Transformers
Diodes
Transistors
Display devices

Fabricating Electronic Equipment
Identify random access memories (RAMs)
Identify read only memories
Identify integrated circuits
Follow written and oral instructions
Identify electronic components
Select electronic components
Fabricating Electronic Equipment (cont.)

Handle electronic components
Prepare basic mechanical drawings
Use appropriate types of solder
Apply basic electronic construction techniques
Use general purpose test equipment
Make appropriate adjustments
Clean units
Do performance evaluations
Use appropriate tools
Make appropriate adjustments
Repair printed-circuit boards
Replace defective components
Lubricate units under repair
Clean units under repair

Calibrating Electronic Equipment

Follow manufacturer's calibration procedures
Use specified general purpose test equipment
Locate components
Make designated adjustments
Document calibration data

General Knowledge and Procedures

Adhere to company policies and procedures
Communicate with peers
Communicate with management
Task Inventory for

ELECTRONICS TECHNICIAN

General Knowledge and Procedures

Maintain technical competencies
Use technical terminologies
Keep accurate records
Interact with computer terminals
Adhere to established safety standards
Perform general purpose mathematic and electronic calculations
Read schematics
Follow prescribed test procedures
Use specified test equipment
Interpret test results
Accept or reject equipment
Document test data

References for

ELECTRONICS TECHNICIAN

Occupational Analysis: Electronics Technician
(Entry Level), Colorado State Univ., Ft. Collins
(Publication #OA17)

Electronics Technician Task Analysis, Instructional Learning Systems, State Dept. of Education, Oregon

Program Description (Electromechanical Technology and Electronics Technology), State Dept. of Education, Florida
Task Inventory for

WASTEWATER TREATMENT TECHNICIAN
WATER TREATMENT TECHNICIAN

Plant and Equipment Operation

Unload and store chemical additives
Maintain reservoir elevation at specified levels
Load chemical additives into chemical feeding machine
Set dial settings on chemical feeders
Determine if backwashing is needed
Initiate reverse flow of water through filter
Adjust water flow
Measure water pressure

Operate:

a. chlorination systems
b. heating apparatus (to prevent freezing during cold weather)
c. unloading equipment (cranes, forklifts, etc.)
d. mechanical grit removal unit
e. centrifugal and/or positive displacement pumps
f. flow measurement devices
g. pretreatment units (chemical addition)
h. coagulation and flocculation units
i. mechanically cleaned settling tanks
j. Imhoff settling tanks
k. sludge collector and skimmer
l. sludge wasting equipment
m. aerobic digester
n. sludge removal equipment
o. sludge press
p. density meters

Keeping Records

Keep clerical information pertaining to:

a. daily water production
b. amount of water treated
c. amount of water pumped
d. accumulated rainfall
e. chemical and bacterial tests initiated
f. pounds of chemical used
g. average hours of filter runs
h. maintenance performed
i. time keeping

Record raw water instrument readings at intake station or treatment plant

*Based on 13 interviews in the following states: California, Florida, and Massachusetts
Keeping Records (cont.)

Record changes in:
   a. water level
   b. turbidity
   c. temperature
   d. rate of flow
   e. amount of rainfall

Record and maintain log of:
   a. chemical dosage
   b. chemicals used
   c. cost of chemicals used
   d. condition of equipment
   e. plant rounds

Take inventory of chemicals and equipment

Inspection and Calibration

Inspect piping

Inspect and maintain:
   a. gates
   b. valves
   c. channels
   d. weirs
   e. bridges
   f. screens and comminutors
   g. flow indicators
   h. pneumatic valve controls
   i. chemical feed controls
   j. boiler flame scanners
   k. spectrophotometers

Calibrate:
   a. pH meters
   b. turbidimeters
   c. pressure indicators

Plant and Equipment Maintenance

Scrape and paint equipment and/or storage facility

Synchronize motor and pump rates

Change charts and/or points on recorders

Check out level in gear driven mechanisms
Plant and Equipment Maintenance (cont.)

Clean:
  a. clarifiers
  b. contact plates
  c. aerators
  d. screens/comminutors
  e. sidewalks and channels
  f. diffuser plates
  g. grease traps
  h. chemical feeder and feeder lines
  i. baffles
  j. weirs
  k. scum removal and collector mechanisms

Unclog:
  a. sludge lines
  b. in-plant sewage lines
  c. pumps
  d. composite sampler

Align:
  a. block bearings
  b. drive shafts
  c. pumps
  d. motors

Change oil/oil filters in motors and pumps

Grease fittings on equipment

Replace broken/worn:
  a. motor chains
  b. filter elements
  c. underground pipes
  d. bearings
  e. impellers from pumps

Cut, tap, and thread pipe

Check and replace air lines

Bleed air lines

Blow down condensation trap in pneumatic systems

Check operation of sludge gas waste burner

Remove scum from wet well components

Remove foreign matter from intake screens
Task Inventory for

WASTEWATER TREATMENT TECHNICIAN
WATER TREATMENT TECHNICIAN

Plant and Equipment Maintenance (cont.)

Empty settling basin

Empty filter beds

Hose down and clean grit removal unit

Dispose of debris

Hose down screen area

Clean grit chamber

Transport grit to disposal site

Train new hires in maintenance/operation procedures

Sampling and Testing

Collect sample of raw and treated water

Test water by:

a. titration method
b. color comparison
c. gravimetric method
d. bacteria method
e. spectrophotometric methods

Collect sample from chemical feed systems

Determine water:

a. pH level
b. alkalinity
c. turbidity
d. chlorine residual
e. dissolved oxygen level

Sample raw influent

Test for presence of coliform organisms

Label and preserve samples

Measure and record temperature of influent

Decide when a second sample is needed

Collect raw sleduge sample and take temperature
References for

WASTEWATER TREATMENT TECHNICIAN
WATER TREATMENT TECHNICIAN

Instructional Materials Laboratory, Trade and Industrial Education, The Ohio State University


Contra Costa College course outline for Pollution Control 160. Biochemical Principles of Sewage Treatment. 18 weeks, 3 hours per week.

EPA. Introduction to Environmental Technology
Wastewater Technology Vol I, Vol. II A-E.

EPA. Laboratory Control for Wastewater Facilities Vol. III A-G.

EPA. Process Interaction for Wastewater Facilities, Vol V.

EPA. Advanced Waste Treatment, Vol VI.

Water Pollution Control Federation. The New Audio-Visual Training Program for Extended Aeration Plant Operators. (Has list of outcomes.) Chlorination Skill Training Package. (Has list of outcomes.)

EPA. EPA IRC Bulletins. (Have much info, contacts training programs, etc.)


Kirkwood Community College Water and Wastewater Training Center. Survey to establish list of tasks performed by Iowan treatment plant operators.
Task Inventory for

Carpenter *

General Knowledge and Tasks

Know and apply building codes
Report/correct hazards
Maintain hand tools
Maintain power tools
Maintain surveying instruments and equipment
Build scaffolds
Use scaffolds
Keep time/work records
Clean work areas
Use correct trade terminologies

Surveying Tasks

Set up builders' level
Hold rods
Use hand signals
Shoot grades
Turn corners
Place batter boards

Form Construction and Foundation Layout

Lay out footer forms and column bases
Erect footer forms and column bases
Lay out foundation forms
Erect foundation forms
Construct slab-on-ground formworks

*Based on 14 interviews in the following states: California, Kentucky, Massachusetts, New Mexico, Nevada, and South Carolina
Task Inventory for

Carpenter

Form Construction and Foundation Layout (cont.)

Construct entrance platforms and steps

Erect beam forms

Erect column forms

Erect slip forms

Erect pan forms

Flooring and Wall Layouts

Lay out sills

Install sills and sill sealers

Lay out girders, beams, and columns

Lay out floor joists

Lay out special framing

Lay out/install bridgings and blockings

Install subflooring

Lay out plates

Rough openings on exterior walls

Fabricate and install:
  a. corner posts
  b. wall tees
  c. headers
  d. carriers
  e. rough sills

Install braces

Install sheathing

Erect exterior wall sections

Lay out/erect interior partitions

Install double plates

Install backing for fixtures
Task Inventory for

CARPENTER

Construction of Ceilings and Roofs

Lay out top plates for ceiling joists

Install ceiling joists

Install nailers

Lay out/install special framings

Lay out/install ceiling bridgings and blockings

Lay out top plates and ridgeboards for rafters

Lay out, cut, and install:
  a. common rafters
  b. hip rafters
  c. valley rafters
  d. jack rafters
  e. gable end studs

Lay out/install special framings

Lay out/install trusses

Install roof sheathings

Apply roofing felts

Install drip edges, flashings, and valley tins

Install roof caps, louvers, and vents

Install ridgecaps

Install Stairs

Lay out, cut, install:
  a. stair stringers or horses
  b. rough treads

Installing Interior and Exterior Trim

Install:
  a. window units
  d. door units
  c. hardware and weather stripping
Task Inventory for

CARPENTER

Installing Interior and Exterior Trim

d. fascias
e. soffits
f. wall sidings
g. frieze boards
h. holdings
i. underlayments
j. door units
k. cabinets
l. counter tops
m. paneling
n. suspended ceilings
o. risers and treads
p. balusters and handrails
q. finish floorings
r. hardware

Insulation

Cut insulations

Install insulations

Install vapor barriers

Common tools and materials

Select materials for:

a. preparing form works
b. framing floors
c. framing walls, ceilings
d. framing roofs
e. roofing
f. stairs
g. exterior/interior trim
h. insulation

Use tools:

a. measuring tools, rules, and tapes
b. four-foot level
c. plumb bob and plumbline
d. T-levels
e. framing squares
f. chalk lines
g. pencil and compass
h. hammers and handsaws
i. hand drill
j. block plane and jack plane
k. files and rasps
l. wood chisels
m. C-clamps
n. hand screws and screwdrivers
Task Inventory for

CARPENTER

Use tools (cont.)

- screw and bar clamps
- wrenches
- cleaning tools (shovels and brooms)
- nail removing devices
- portable circular saw
- radial arm saws
- electric drills
- compressed air nailer
- table circular saw
- power miter box.
- reciprocating saws
- belt sander, power routers, jointers, stud gun

Performing Calculations and Measurements Needed for Layouts and Construction

Perform basic calculations

Read and interpret building plans (foundations, floor, roof, etc.)

Read and interpret planning measurements and symbols

References for

CARPENTER

Occupational Analysis: Carpentry (Entry Level), Colorado State Univ., Ft. Collins. (Publication #0A29)

Woodworking Guide for Visually Handicapped Students (ED 073-577)

Carpentero de Construccion, Puerto Rico Departamento de Instruccion Publica, Programa de Instruccion Vocacional y Tecnica

An Analysis of the Carpentry Occupation, The Instructional Materials Laboratory, Trade and Industrial Education, The Ohio State University
Task Inventory for

DIESEL MECHANIC*

General Knowledge
Maintain tools and equipment
Work safely
Use tools properly
Use test equipment
Understand engine functioning
Use repair manual

Preventive Maintenance - (Procedures for Checking)
Check engine timing
Check oil pressure
Check generator or alternator output
Test cooling system
Test engine compression
Test engine vacuum
Test for cylinder leakage
Test for cylinder balance
Test fuel pump
Check hoses, lines, and fittings
Check filters
Check idle, high idle, stall speed
Check blower drives and timing gears
Check turbocharger/supercharger

Knowledge of Problems and Procedures (Removing and Installing)

Engines:  Rebuild short block
   a. remove engine
   b. disassemble and clean block
   c. mic bearing surfaces

*Based on 12 interviews in the following states: Arizona, California, Maryland, and Minnesota
Task Inventory for Diesel Mechanic

Engines: Rebuild short block (cont.)

d. remove and replace liners
e. remove and replace cam bearings and bushings
f. install camshaft
g. install crankshaft with new bearings and seals
h. install pistons with new rings and bearings
i. check clearances
j. install cam followers
k. rethread tapped holes
l. replace expansion plugs
m. install covers
n. install vibration damper
o. time engine
p. test engine on dynamometer
q. install engine

Engines: Cylinder heads

a. remove head
b. disassemble and clean head
c. check head for warps and cracks
d. grind valves
e. grind valve seats
f. knurl or replace valve guides
g. test valve springs
h. install valve train
i. water test cylinder head
j. install head
k. adjust valves

Engines: Turbocharger (or Supercharger)

a. remove turbocharger/supercharger
b. disassemble and clean turbocharger/supercharger
c. inspect rotors, housing, bearing, and gears
d. assemble turbocharger/supercharger with new parts as required
e. check and adjust clearances
f. install turbocharger/supercharger

Engines: Lube Oil Systems

a. remove oil pump
b. disassemble and clean oil pump
c. rebuild pump
d. install oil pump
e. test oil cooler for leaks
f. change filters

Fuel Systems: Fuel Pump

a. remove fuel pump
b. disassemble and clean pump
c. assemble pump with new parts as required
d. time and calibrate pump
f. install fuel pump
Task Inventory for

Diesel Mechanic

Fuel Systems: Fuel Injectors
a. remove injectors
b. disassemble and clean injectors
c. assemble injectors with new parts as required
d. flow test injectors
e. adjust injectors
f. install injectors

Fuel Systems: Governors
a. check warm engine rpm
b. remove and install governors
c. disassemble and clean governors
d. assemble governors with new parts as required
e. calibrate governors

Cooling Systems: Radiator
a. remove radiator
b. pressure test radiator
c. flush radiator
d. check cap release pressure
e. install radiator

Cooling Systems: Water Pump
a. remove water pump
b. test pump for coolant leakage
c. rebuild pump
d. install water pump

Cooling Systems: Fan and Thermostat
a. remove fan
b. test thermostatic operation of fan
c. lubricate fan bearings
d. install fan
e. remove and install thermostat
f. test thermostat

Cooling Systems: Belts and Hoses
a. remove and install belts
b. adjust belts
c. remove and install hoses
d. pressure test cooling system

Electrical Systems: Starter and Solenoid
a. remove starter
b. install starter
c. install solenoid
Task Inventory for

Diesel Mechanic

Electrical Systems: Charging Circuit
a. test generator
b. remove generator
c. install generator
d. test alternator
e. remove alternator
f. test regulator
g. replace alternator

Electrical Systems: Battery
a. take specific gravity readings
b. clean terminals
c. test battery amps and volts
d. fill and charge battery

References for

Diesel Mechanic


William Ashley, Tom Hines, Faith Justice; Instructional Materials Laboratory, Ohio State University. Automotive/Truck Services and Sales: Task Inventories, 1974.