Domain 1: Health, regulations, food safety

1. Health

A. Health benefits
   - Milk
   - Cheese
   - Cultured dairy products
   - Nutrition
     - Fat content
     - Calories
     - Nutrients
       - Calcium, protein/amino Acids

B. Health concerns
   - Lactose intolerance
   - Gluten intolerance
   - Protein intolerance
   - Allergens
   - Dietary restrictions
     - Vegetarian
     - Kosher
     - Halal
   - Foodborne illness
     - Susceptible populations
     - *Listeria monocytogenes*
     - *Toxigenic E. coli*
     - *Salmonella enterica*
     - *Staphylococcus aureus*

2. Regulations governing cheese industry procedures

A. Regulatory bodies
   - In the US
     - Federal: FDA, USDA, Customs and Border Patrol (CBP), Environmental Protection Agency (EPA)
     - State: Department of Agriculture, Agriculture & Markets, Agriculture & Land Stewardship
     - County
     - City
   - In other countries: Central and South America, Europe, Canada, Australia, New Zealand, China

B. Registration and licensing
   - FDA facility registration
   - State facility registration
   - Warehousing and cold storage
   - Facility licensing
     - CTPAT
     - CES
     - CFS
     - Bonded
   - Pasteurizer
- State licensing
- Wisconsin state licensing
  - Cheesemakers
  - Butter makers
  - Cheese grader

C. Milk
- Pasteurized Milk Ordinance
  - Milk handling
  - Antibiotic testing requirements
  - Quality testing requirements
- Use of raw milk in cheesemaking
- Milk grades
- Physical treatments of milk
  - Microfiltration etc.
- Heat treatments
  - Definitions
  - Pasteurization
  - Requirements
  - Thermization

D. Import/export
- How to export your cheese
  - Logistics
  - Duties
  - Customs paperwork
- How to import cheese and cheesemaking supplies
  - Freight forwarder
  - Customs broker
  - Consolidator
  - Invoice compliance
  - FDA registration of imported products
  - Canadian Quota System
- Tariff system
  - “Over the top”
  - Duty based on milk type
- License fees
- USDA holds
  - Pest, infestations
- FDA holds
  - Detention without examination
  - Blacklist
- FSMA: FSVP

E. Product labeling and dating
- Weights and measures
- Definitions: Best by, sell by, use by
- Regulatory approvals
  - FDA approved labelling for imports
    - Outer and inner carton label compliance
- Requirements for different sales channels
  - Producer, wholesale, retail
- Exemptions
- Ingredients
Nutrition panel requirements
Standards of Identity/ trademarks
- CFR/ PDO
GTIN/GS1
Traceability
Lot codes

F. Good Manufacturing Practices (GMPs)
- 21 C.F.R. 110, 117

G. Inspections, investigations, and targeted sampling
- Environmental testing (by regulators)
- Product testing by regulators
- Water quality
- Food contact surfaces

3. Food Safety
A. Food Safety Modernization Act
- Foreign Supplier Verification Program Rule
- Sanitary Transport Rule
- Hazard Analysis Risk-Based Preventive Controls Rule
- Preventive Control Qualified Individual
- Exemptions

B. Food safety plan
- Hazard analysis
- Preventive controls
- Process controls
- Allergen controls
- Sanitation controls
- Supply chain
- Temperature controls
- Verification
- Environmental monitoring
- Product testing by producer
- Corrective actions
- Recall plan
- Validation
- Reanalysis
- Supplier verification
- Recordkeeping
- Audits
  - Types: 1st- 3rd party audits
  - Frequency: Annual

C. Food defense plan
D. Recordkeeping
- Make process
- Lot coding
- Cold chain

E. Third party audits
- Retailers Consortium

F. Training programs
- FSPCA
Domain 2: Operations

1. Facilities

A. Sanitary design
   - Foot traffic sanitary and unsanitary environments are separate
   - Limiting cross contamination possibilities
   - Vehicle access
   - Location and orientation
   - Building materials and insulation: Interior and exterior
   - Water supply
   - Sewer and septic needs
   - Environmental concerns: Water, air, pest control

B. Zones
   - Food handling/ preparation areas
     - Food contact surfaces
     - Cheese ripening/aging areas
   - Non-food handling areas
     - Storage areas
     - Refrigerated storage
     - Frozen storage
     - Dry storage for ingredients/ packaging
     - Restrooms
     - Loading docks
     - Floors
     - Walls
     - Drains
     - Break rooms, lockers
     - Dumpster, trash area

C. Climate controlled environments
   - Climate control concepts
     - Temperature
     - Dew point
     - Relative humidity
     - Air speed
   - Air exchange
     - Oxygen level, Ammonia evacuation, CO2, air filters

D. Milk processing and storage facilities

E. Cheesemaking facilities
   - Make room, draining room, drying room, brine room, ripening room cutting and packaging, cold store room, receiving room,

F. Cheese ripening environments and aging facilities
   - Ripening racking/method of storage/Shelving options, application, design and materials
     - Plastic or wooden crates, wooden shelving/ plastic metal wire racking/ run from ropes, anaerobic under vacuum seal

G. Packing rooms
   - Packing stations
   - Loading dock
   - Food safety considerations
   - Temperature and humidity for packing to prevent condensation inside wrapping material

H. Finished product storage, preparation, and sale
2. **Equipment and utensils**

A. **Technology**
   - Robots, computers and computer systems, cameras

B. **Climate control tools**
   - Air room exchanges/ (positive air pressure/ exchange rate (hourly/ daily)
     - Air handlers and sock systems
   - Static, radiant, or ventilated cooling
   - Humidifiers/dehumidifiers
   - Sensors

C. **Milk processing and storage**
   - Bulk tanks, pasteurizers, bactofuges, separators, clarifiers, churns, vats
   - Thermometers, temp logs, defrost cycles

D. **Cheesemaking and aging**
   - Tools to analyze composition
     - Titratable Acidity
     - pH meters
     - Salt analyzers
     - Moisture analyzers
     - Fat content analyzers
   - Molds/forms/hoops
     - Styles: Block, microperforated, perforated individual with bottom and without bottoms, basket, non-perforated
     - Material: Plastic, stainless steel, wood
   - Presses
     - Horizontal, vertical prepress tables
   - Tables
     - Prepress tables, draining tables, curd maturation tables, rotating drum drainer, draining belts, finishing tables
   - Vats
     - Square body traveling agitator, double O enclosed, circular open top, enclosed cradle, open top semi spherical, continuous coagulator, tipping vats, deep copper conical
   - Curd Mill
     - Peg, rotary, chip, plunger/drawer style
   - Pasta Filata Systems
     - Cooker (waterless/steam/ hot water)
     - Stretcher (continuous, batch)
     - Molder
   - Curd cutting tools
     - Harp, lira, spino, spanarola, plates, knives
   - Salting and brining tools

E. **Finished product storage, preparation, and sale**
   - Forklifts
   - Utensils: cutters, scales, slicers

3. **Standard Operating Procedures**

A. **Development and maintenance of SOPs**
   - Create written protocols
   - How to keep/store them
   - Training and documentation of training

B. **Best practices**
   - ACS Best Practices Guide for Cheesemakers
   - Safe Cheesemaking Hub
• Environmental testing and monitoring for pathogens
  • In process testing for *Staph aureus*
  • ATPase test for sanitation
  • Finished or end- product testing
  • Program for holding product undergoing testing and positive release once results are in
• Safe Cheese Service
  • Workstation design
  • Mise en place
  • Clean as you go
  • Time/Temp at Ambient temperature- AW/pH thresholds for display
  • Cross Contact
  • One cheese, one board, one knife/wire
  • Slicers, sign holders, and other tools
  • Site testing surfaces

4. Cleaning & sanitation protocols
   A. Standards of hygiene
      • Why we clean, frequency of cleaning, and documentation of cleaning
      • Definition: Cross contact
      • Deep cleaning schedules
      • Cleaning and maintenance schedules
   • Color coding systems
   • Chemicals, chemical use procedures, and cleaning agents
      • Types: Caustics, acids, sanitizer
      • Storage: Labeling in secondary container
   • Applications: COP/ CIP, foaming, manual clean, fogging
   • How to deal with spills and clean up
   • Wooden board usage and sanitation, cleaning, drying
   • Cleaning equipment and supplies
      • Mops, buckets, scrubbers, foaming systems

5. Personnel
   A. Policies
      • Personal hygiene policies and practices (Included in GMPs)
      • Fitness for work
      • Protective clothing and Personal Protective Equipment (PPE)
      • OSHA regulations
      • Fair labor practices in U.S. and abroad
      • Ergonomics
   B. Visitors
      • Visitor policies, sign in-log
      • Contractor policies, sign in log

6. Crisis Management/ disaster planning
   A. Recalls and withdrawals
      • Traceability: one step forward, one step backward
      • Procedures for isolation of affected product
      • Documentation
      • Wording of recall notice to be posted
      • Product disposition
      • Sanitation procedures
      • Financial credit
      • Responding to consumer questions
      • Handling of media
      • Internal/ External Communications
         • PR/ Communication planning
Domain 3: Cheese History, Definitions, and Categorization

1. History of cheese
   A. Milk preservation
   B. Economic history of cheese
   C. Anthropology/Social history of cheese
   D. Geography

2. Definitions
   A. Codex Alimentarius
      ▪ General Standard for Cheese
   B. Code of Federal Regulations
      ▪ Standards of Identity
   C. Designations and name control
      ▪ European Union
         • Protected Designation of Origin (PDO)/Designation of Origin (DO)
         • Protected Geographic Indication (PGI)
         • Traditional Specialty Guaranteed (TSG)
      ▪ Regional terms
         • Appellation d’Origine Contrôlée (AOC)/Appellation d’Origine Protegee (AOP)
         • Denominazione di origine controllata (Italy)
         • Denominacion de d’Origen (Spain)
         • Geschutzte Ursprungsbesceichung (Germany/Austria)
   D. Other designations
      ▪ Certifications
         • Organic
         • Biodynamic
         • Humane Certified (i.e. Animal welfare Approved)
         • B-Corp
         • Validus
         • Non-GMO Verification
      ▪ Production methods
         • Farmstead
         • Industrial
         • Coop
         • Fermier
      ▪ Trademarks
3. Categorization

A. Attributes that affect how a cheese may be categorized
   - Place of origin
   - Milk type
     - Species
     - Breed
   - Make process
   - Milk treatment
   - Ripening method/ affinage/ rind type
   - Shape/size
   - Sensory attributes
     - Texture
     - Flavor profile
   - Age
   - Seasonality
     - Micro ecology/Terroir
     - Feed type
     - Transhumance/Alpage
   - Cultures
   - Composition
     - Most commonly used: % Moisture, % FDM (fat in dry matter), % MNFS (Moisture non-fat substance/solids), %SM (salt in the moisture phase), pH
     - Uncommon- % Residual sugars/ % Ca/SNF (calcium/solids non-fat)

Domain 4: Milk

1. Science of milk
   A. Microbiology
      - Non-starter Bacteria
      - Lactic acid bacteria (LABs)
        - Adjunct or adventitious LABs
      - Spoilage: micrococci, yeast, mold
      - Phage/bacteriophage
      - Pathogens, index, and indicator organisms
   B. Milk quality tests
      - Coliform (VRB)
      - Yeast and Mold
      - Spores
      - Standard plate count
      - Somatic cell count
      - Preliminary Incubation Count (PI Count)
        - Psychrotrophs
      - Pathogen Analysis

2. Milk composition and yields
   A. Milk components
      - Casein, calcium, lactose, fat
   B. Intrinsic properties that affect composition and yield
      - Species
      - Breed
      - Age
■ Animal health
■ Individual animal within herd

C. Extrinsic properties that affect composition and yield
■ Lactation
  ■ Morning milk versus evening milk
  ■ Stage of lactation
■ Nutrition
■ Feed source
  ■ Conventional total mixed ration (TMR), Grass-fed, pasture or organic
■ Season
■ Environment

3. Milk Source
   A. On farm production
   B. Purchased
   C. Milk pricing
      ■ Feed efficiency (Milk to feed ratio)
      ■ Class I-IV

Domain 5: Cheesemaking

1. Science of cheesemaking
   A. Microbiology
   B. Chemistry
      ■ Cheese composition
         ■ Moisture, fat, non-fat solids
         ■ Water activity and pH

2. Ingredients
   A. Milk treatment
      ■ Heat treatment
      ■ Cream addition
      ■ Milk standardization (protein, casein, lactose- accomplished with membranes, powders, or other dairy ingredients)
      ■ Fat/cream separation
   B. Primary ingredients
      ■ Acidulants
         ■ Starter cultures
         ■ Citric acid, acetic acid (vinegar), purified lactic acid, glucono delta lactone, tartaric acid
      ■ Cultures
         ■ Starter (primary) cultures
            ■ Mesophilic, thermophilic,
            ■ Form: bulk, frozen, freeze dried
         ■ Ripening cultures (secondary/ adjunct)
            ■ NSLAB, yeasts, molds, micrococci, brevibacterium
         ■ Protective cultures
            ■ Added with intent of preventing contamination of unwanted microbiological activity outside the desired process
      ■ Coagulants
         ■ Types: Microbial, vegetal, animal, fermentation produced chymosin
         ■ Forms: Liquid, powder, paste
         ■ Effects of coagulant type and usage (on cheese making and aging)
      ■ Salt
         ■ Types of salt
C. Optional ingredients
   ▪ Colorants
   ▪ Milk whiteners
     ▪ Titanium dioxide
     ▪ Hydrogen peroxide
   ▪ Calcium chloride
   ▪ Lipase
     ▪ Kid, calf, lamb
   ▪ Flavorings
     ▪ Herbs and spices
     ▪ Fruits and vegetables
     ▪ Nuts, meat seafood
     ▪ Smoke
     ▪ Blended cheeses
     ▪ Sweets, coffee, and tea
     ▪ Alcohol
     ▪ Rubs and washes
     ▪ Ash
     ▪ Leaves
   ▪ Manufacturing concerns when adding flavorings
   ▪ Safety concerns
   ▪ Protectants and preservatives
     ▪ Protective cultures
     ▪ Fermentates
     ▪ Anti-caking agents

3. Cheesemaking process
   A. Pre-ripening
   B. Milk ripening
     ▪ Time, temp, pH, titratable acidity
     ▪ Fermentation
       ▪ Lactic
       ▪ Enzymatic
   C. Coagulation
   D. Cutting or breaking curd
     ▪ Curd cut sizes and gel firmness and their effect on finished cheese
     ▪ Determining flocculation and gelation
   E. Intermediate steps
     ▪ Rest/fore work
     ▪ Milk and whey dilution
     ▪ Curd washing
     ▪ Settling- curd matured under whey as for pasta filata
     ▪ Pre-draining/ separation of whey
       ▪ Mechanical or manual pressing
       ▪ Natural draining
       ▪ Mechanical draining (belts/ rotating perforated tubes)
   F. Salting
     ▪ Pre-salting, direct salting, dry salting
     ▪ Grain size
       ▪ Brining
       ▪ Static, or mechanically managed
         ▪ Chilled, filtered, pH regulated
     ▪ Flipping
     ▪ Factors that influence salt uptake

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G. Concentrating curd solids
   ▪ Achieving the target moisture level in cheese body
   • Agitation
   • Stirring
   • Cooking
   • Pressing
   • Curd maturing
   • Under whey
   • Whey dilution
   • Washing
   • Cooking/stretching

H. Acidification
   ▪ Impact on mineralization and texture

I. Forming a curd mass
   ▪ Molding
   ▪ Milling

Domain 6: Ripening

1. Science of cheese ripening
   A. Microbiology
      ▪ Rind
      ▪ Paste
   B. Chemistry
      ▪ Predictors and chemistry behind texture and flavor development
      ▪ Moisture in Non-Fat Solids (MNFS)
         • Proteolysis
         • Lipolysis
         • Glycolysis

2. Ripening parameters
   A. Climatic requirements
      ▪ Bloomy
      ▪ Washed
      ▪ Blue
         • Mold ripened
         • Foil-wrapped
      ▪ Bandaged
      ▪ Natural rind
      ▪ Plastic or poly coated
      ▪ Vacuum sealed/cryovac/permeable plastic
      ▪ Waxed
   B. Adjusting care based on unique batch parameters
      ▪ Data/communication from cheesemakers (in house or outsourced)
      ▪ Reaching targets
      ▪ Information about milk composition and heat treatment
      ▪ Moisture, pH, salt, inherent microflora, Aw

3. Ripening process
   A. Rind development
      ▪ Rind treatment
         • Brining and salting
Brine tanks and systems
  • Hand salting methods
  ▪ Washing
    • Tools and methods for washing
    • Wash solutions
    • Use of cultures in the brine to create a desired outcome for smear-ripened cheeses
  ▪ Rind protection material
    • plastic coating
    • wax
    • cloth
    • Specialty cheese papers
    • bags
    • ash
    • oil
    • lard

B. Managing rind flora
  ▪ Mitigation of desirable and undesirable mold/ yeast/ bacteria development
    • Mucor
    • Cheese mites
    • Rind rot
    • Slipskin (Peau de Grenouille)

Domain 7: Assessment and Evaluation

1. Sensory Evaluation
   A. Grading systems/ schedules
      ▪ Determine categories to measure
      ▪ Determine measurement system
      ▪ Build a grading database
      ▪ Spider graphs
   B. Preparation
      ▪ Familiarizing oneself with cheese varieties and judging standards prior to tasting
      ▪ Avoid strong foods/odors before a grading session
   C. Evaluation environment
      ▪ Effect of temperature, cleanliness, lighting, other aromas, potential distractions on cheese assessment
      ▪ Tools- knives, triers
      ▪ Calibrating palates and developing a common lexicon
      ▪ Taste progression
      ▪ Avoiding fatigue

2. Points of Evaluation
   A. Quality assurance and analysis
   B. Defining cheese profiles
      ▪ Determining acceptable and unacceptable flavor and body characteristics
      ▪ Determine intensity of acceptable and unacceptable flavor and body characteristics
   C. During ripening
      ▪ Sensory and technical assessments/ evaluations
      ▪ Determining ripening trajectory for proper timing of release
      ▪ Determining shelf life or best by dates for products
• Sensory analysis informed by cheese chemistry
  • (pH, moisture, fat, salt)

D. Upon receipt
  • Affinage facility
  • Distribution
  • Retail

E. Before selling or serving
  • Determine ripeness
  • Shelf life

F. Competitions and judging
  • Types of competitions
    • Blind to producer vs. producer known
    • Number of entries
    • History
  • American Competitions
    • American Cheese Society Judging & Competition
    • US Championship Cheese Contest
    • Good Food Awards
    • Regional Agricultural Fairs
  • International Competitions
    • World Cheese Awards
    • World Championship Cheese Contest
    • International Cheese Awards

3. Communicating assessments
   A. Documenting cheese assessments and evaluations
      • Scorecards
      • Templates
      • Tasting history
   B. Sharing assessments and evaluations
      • Consider audience
      • Providing positive feedback and comments
      • Language/tone
      • Vocabulary
   C. Feedback loop
      • Communicating problems across the supply chain
      • Collecting info/documentation for communication
      • Samples and photos
      • Develop a system that helps communicate issues back to producer, distributors/ cheesemaker/ milk source
      • Vat id, make date

Domain 8: Selling and Transporting
  1. Selecting sales outlets
     A. Choosing sales routes
        • Wholesale – direct, distributor
        • Retail – online, on farm, producer store
     B. Selecting distributors/retailers
        • Shop/Distributor Mission
        • Geographic location/scope/overlap
Range of cheeses
Selling approach (cut from wheel, cheese specialists)
Receptiveness to seasonality
Quantity requirements/expectations
Seller integrity
Competitive landscape

C. Working with distributors/retailers
What to require
- 3rd party audits, certifications, licenses, food safety plan or HACCP, FSVP, GFSI- SQF, BRC, End- product testing, COA analysis from a lab, environmental testing plan, FSMA vs. NON FSMA Audits
- Setting policies re: payment terms, sampling allowance, demoing, what constitutes a valid return
- Distributor reports (where cheese is sold)
- Communicating with retailers, distributors and sales teams
- Essential materials (POS, Handling instructions, producer info)

2. Selling Cheese
A. Chain of Custody
- Terminology
  - Ex-works
  - FOB
  - CIF
  - Delivered
- Insurance
- Documentation
  - Bill of Lading

B. Recordkeeping
- Traceability
- Invoicing
- Cold chain

C. Format
- Wheels
- Blocks
- Cubes, slices
- Cut formats
- Shred
- Lidded containers

3. Procuring
A. Supply chain and sales channels
- Producer
- Importer
- Distributor, broker, sub distributor (jobber),
- Affineurs
- Retailers
- Restaurants
- Direct to consumer
- Farmers markets and farm stores
- Online sales
- Institutional (schools, military, hospitals, nursing homes)
- Cruise ships and airlines
4. Packing

A. Cheese preparation
   - Holding zones
   - Flow chart of physical movement of product and employees

B. Wrapping cheese
   - Wrapping appearance: employee training
   - Types of wrapping materials
     - Environmentally conscious options
     - Specialty cheese papers
     - Plastics
     - Protective shells/ boxes

C. Documentation
   - Labels with nutritional information
   - Packing lists
   - Invoices
   - Bill of lading
   - Airway bill
   - Batch/ lot code
   - Date packed
   - Weight
   - Regulatory requirements
   - Retail labels
   - Bar code

D. Packaging materials
   - Environmentally conscious options
   - Type of cheese(s) being transported
   - Individual cheese box
   - Cases of boxes
   - Insulated boxes
   - Ice packs
     - Size and cheese: ice ratio
   - Special labeling
     - Case labeling: cheese, batch date, barcode
   - Pallet size requirements
   - Protectants and cushioning
   - Vacuum packing for transport
     - Gas flush
   - Disposal of packing materials

5. Logistics and transportation

A. Modes of transportation
   - Refrigerated transport
   - Palletized shipments
   - Cheesemaker transport
   - Air freight
   - Ocean freight
   - Non-refrigerated shipping services

B. Maintenance and documentation of the cold chain
   - Recording temperatures during transport
   - Temperature reading/ recording methods and devices
Domain 9: Inventory Management

1. Sourcing (inventory selection)
   A. Considerations
      ▪ Knowledge of customer base
      ▪ Knowledge of product
      ▪ Mission statement (declared or implied)
      ▪ Subjective tastes of buyer
      ▪ Geographical constraints of location
      ▪ Type of cheese program
      ▪ Style of shop/restaurant/company etc.
      ▪ Producer integrity
      ▪ Seasonality
      ▪ Competitive landscape
      ▪ Product diversity
      ▪ Market trends
      ▪ Optimal retail price
   B. Supplier Programs
      ▪ Approved supplier programs (FSMA)
      ▪ What to require of producers/ distributors
        • 3rd party audits, certifications, licenses, food safety plan or HACCP, FSVP, GFSI- SQF, BRC, End-product testing, COA analysis from a lab, environmental testing plan, FSMA vs. NON FSMA Audits
      ▪ Store policies re: ingredients, payment terms, sampling allowance, demoing, what constitutes a valid return

2. Receiving
   A. Receiving protocols
      ▪ Documentation
        • Purchase orders
        • Invoices
        • Packing slips
        • Bills of Lading
        • Product evaluation results (Ripe, ready to sell?)
        • Visual
        • Olfactory
        • Tasting
        • Batch no. logged
        • COA attached
        • Receiving logs
        • Photos
      ▪ Check against purchase order, check actual received cheese against invoice/packing slip
      ▪ Temp incoming product
        • How to temp- in cheese, in box, in truck
      ▪ Check product specs. and quality proper labeling
      ▪ Preparing for incoming cheese
        • Making space in refrigerated areas
        • Staff preparation
        • Work surfaces: clearing and cleaning
   C. Unloading cheese
      ▪ Receiving area/ dedicated tables
      ▪ Unpack cheese
        • Put directly out for sale, or storage
      ▪ Triage
• What to do if product arrives out of temp/ wet/ dry, etc.
  ▪ When to return/dispose/reach out for credit
  ▪ Documentation needed
    ▪ Batch info, pictures
  ▪ Evidence of infestation
  ▪ Damaged or out of date product
    ▪ Acceptable time lag from receipt to discovery (if defects are not visible)
    ▪ Acceptable deviation from the norm
  ▪ Definitions: Best by, sell by, use by
  ▪ Discrepancy between purchase order and delivered product/ invoice - item name/ weight/ Qty. Weight discrepancies invoice to box to product - understanding the loss of weight from supplier to shop and how to handle this

3. Inventory management
   A. Ordering
      ▪ Pars
      ▪ Logs
      ▪ Tracking movement via sales/ shrink
      ▪ Ordering/ buying management
      ▪ Managing/evaluating promotions & sales goals
      ▪ Systems for controlling inventory
      ▪ Record keeping practices
      ▪ Determine monetary value of inventory or evaluate inventory to determine monetary value
      ▪ Internal reporting to gauge success
      ▪ Movement reports
   B. Rotation
      ▪ First in, first out
      ▪ Date received
      ▪ Make date/batch number
      ▪ Product lifecycle
        ▪ Knowing when to sell/push/ hold back based on assessment/ripeness/condition
   C. Controlling loss
      ▪ Reducing and recording waste
      ▪ Shrink
      ▪ Expiration dates and product past prime
      ▪ What to do when cheese doesn't sell
      ▪ Regular inventory checks
      ▪ When to clean/ how to clean, when to throw away

4. Storage & Shelf Life Guidelines
   A. Product lifecycle
   B. Date marking and labeling
   C. Requirements for cold storage
      ▪ Organizational flow
      ▪ By category, region, producer,
      ▪ Requirements for different business types
        ▪ Cheesemaker/ producer storage
        ▪ Distributor storage/warehouse
        ▪ Retail storage
        ▪ Restaurant
        ▪ Cart, back case
        ▪ Consumer storage recommendations
Domain 10: Point of Sale to Consumer/ Preparation for Sale/Service

1. **Types of cheese service**
   
   A. Distribution
   
   B. Retail / wholesale
      - Take and fulfill orders
      - Managing special orders
      - Prioritization
      - Cleaning between cheeses
      - Tasting and sampling
         - Active
         - Passive
      - Cutting
         - Cut to order
         - Cut and wrap
      - Wrapping
      - Manage sell by dates/ cut dates
      - Weighing for sale
      - Wholesale programs
      - Care of cheese on display
   
   C. Catering
      - Cheese platters
      - Off-site service
      - Hot service: fondue, raclette
   
   D. Restaurant
      - Portioning
      - Determining scope of cheese program
      - Suitability of program to goals of the restaurant
         - complimenting style of cuisine
         - local / national / international selection
      - Cheese presentation
      - Menu design
         - Cheese as starter course
         - Cheese as separate course in multi-course meal
         - Cheese as dessert
      - Plating
         - Kitchen or front of house
         - Proper serving temperature
         - Proper tasting order
      - Cheese cart
         - Appropriateness to style of restaurant
         - Table spacing
         - Ability of staff/designated fromager to make presentations
         - Ability to maintain during service
         - Working off vs. display only
      - “Ownership” of cheese program
         - Kitchen vs front of house
         - fromager vs out-sourcing to local cheese shop

2. **Customer service**
   
   A. Role of cheese professional
      - Consideration of what customer is looking for
      - Pricing
      - Educate and communicate about all aspects of cheese background
         - Rennet, mold, yeast types

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• Cheese names
• Ingredients and nutritional info
• Variety and milk type, heat treatment
• Provenance- producer/ affineur/ Cooperatives/ fruitière/ certifications/ designations/ regionalities
• Producer biographies
  ▪ Serving sizes and portioning
  ▪ Pairing ideas
  ▪ Recipe suggestions

B. Customer care
  ▪ Determine action
    ▪ Apology
  ▪ Discount
  ▪ Refund
  ▪ Documentation
    ▪ Share with staff to educate

3. Tastings and pairings
   A. Composition
     ▪ Classics
     ▪ Seasonal variation and availability
     ▪ Tasting progression
     ▪ Beverages
     ▪ Food
       ▪ Regional specialties
   ▪ Accompaniments
     ▪ Breads
     ▪ Fruits and vegetables
     ▪ Nuts
     ▪ Meats
     ▪ Condiments
     ▪ Honey
     ▪ Olives

B. Cooking with cheese
   ▪ Classic dishes
     ▪ Raclette
     ▪ Fondue
     ▪ Poutine
     ▪ Aligot
     ▪ Macaroni and cheese
     ▪ Grilled cheese sandwich
     ▪ Onion soup
     ▪ Frittata
     ▪ Welsh Rarebit
     ▪ Tartiflette
     ▪ Concoillotte
   ▪ Cheese as an ingredient
     ▪ Melting cheese vs. non-melting

C. Cheese boards
   ▪ Choices
   ▪ Condiments
   ▪ Visual appeal
Domain 11: Business Principles and Practices

1. **Research**
   A. **Industry statistics**
      - Cheese sales and trends
        - Historic, present, predicted
      - Survey
        - In house
        - Contracted
   B. **Market research**
      - Target market
      - Demographics of the market
      - Knowledge of competition
      - Pricing thresholds
      - Performance/market changes over time
        - Your products
        - Trends overall
        - New trends

2. **Accounting and finance**
   A. **Chart of Accounts**
      - Cost of goods sold vs. expenses
      - Profit & Loss statements
      - Cash flow
   B. **Costing strategy**
      - Definitions: Pricing, markup, margin
      - Delivered pricing versus freight on board/ free on board
      - Margin structure: distributor, wholesaler, retailer
      - Freight costs
      - Brokerage
      - Marketing costs
        - Sampling allowances
      - Identifying suggested retail price
      - Cost analysis of all cheeses produced before determining your selling price
      - Gross margin
        - Price architecture
        - Margin versus markup
        - Case procurement
        - Planograms
   C. **Reporting and profitability**
      - Regular financial health checks
        - Financial dashboard
      - Taxes
      - Overhead: Utilities, rent

3. **Human resources**
   A. **Insurance**
      - Types of coverage and levels of coverage
        - Product liability
        - Product spoilage
        - General liability
Natural disaster/crisis coverage
• Business property
• Worker’s comp
• Health

B. Wages and benefits
- Hours
- Federal overtime laws
- Exempt v. non-exempt

D. Management
- Creating a company culture

A. Hiring practices
- Interviewing
- Required documentation
- Employee handbook/ new hire packet

C. Employees
- Workplace behavior
- Educational opportunities
  - Field trips/ university training/ trade associations/ regional meetings/ ACS conference/ Cheesemonger competitions/ scholarships/independent cheese courses and tours
  - Resources: books, magazines, articles, podcasts, websites
  - Certification Exam
- Employee development
  - Evaluations
  - Writeups, disciplinary documentation
  - Corrective action plans
  - Termination procedures
  - Unemployment financial responsibility and remediation
  - Non-compete clauses

D. Training
- Employee training
  - Onboarding
  - Mentorship/ coaching

4. Marketing
A. Branding
B. Strategic goals
C. Sales
- Sales employees
- Brokers
- Role of distributors
- Goal setting
D. Marketing
- Advertising opportunities
- Competitions
- Social media
- Print advertising
- Website
- Demonstrations
E. Outreach and engagement
- End user
- Retail
- Food service
E. Cross platform strategies
   ▪ Social media, partnerships, written communications (blog newsletter, etc.), website
   ▪ Classes
   ▪ Sampling: Tastings, dinners, in store demos

5. Merchandising
   A. Packaging and paper goods
   B. Signage
      ▪ Sales sheets
      ▪ Price sheets
      ▪ Shelf talkers
      ▪ Cheese signs
      ▪ Promotional materials
   C. Visual merchandising
      ▪ Creating an effective and safe display
      ▪ Light oxidation
   D. Merchandising hot zones
      ▪ Countertops
      ▪ Eye-level shelving
   E. Impulse shopping
      ▪ Merchandising at cash wrap
      ▪ Cross merchandising displays