



**COFFEE
SKILLS
PROGRAM**

Barista Skills

Professional



BARISTA SKILLS CURRICULUM: Professional			
Title of module		Barista Skills (Espresso)	
Level		Professional	
Minimum recommended course hours		21 hours including exams	
Course aim		Overview: Designed to test advanced skills and detailed knowledge of the science behind processes used, expected from a professional barista (for example, from someone working as a barista for 12 months or more, with some management responsibilities). Successful candidates should have a detailed understanding of their ingredients and of the techniques available to maximize the quality of the drinks made. They should be able to manage the skills of others to produce quality drinks and provide excellent customer service. They should be able to maintain their equipment to ensure continued quality.	
Information for trainer		Introduction to Coffee, Barista Foundation, and Intermediate Brewing are recommended (but not mandatory) pre-requisite modules. Holding the Intermediate Barista Certification is a mandatory requirement. All knowledge and skill from these modules will be assumed as being held and may be tested through the practical and/or written assessments.	
Subject/ code	Sub code	Knowledge / Skill <i>(what does the student need to know/what should the student be able to do)</i>	Objective <i>(what does the student need to do to demonstrate knowledge or skill)</i>
1.0 COFFEE BEANS	1.1	Factors that influence differences in bean density including coffee origin, processing style, roast level, and age (green and roasted).	Describe espresso flavor in terms of blends, variety, origin, processing method, and roast degree. Can recognize how coffee density affects extraction.
	1.2	<p>The composition of the bean and what the components contribute in flavor and body.</p> <p>How different amounts, and combinations of sweet, acid, bitter affect flavor and balance.</p>	<p>Can name and identify by taste a range of organic acids and understand their importance to flavors in coffee.</p> <p>Formulate balance of espresso flavor: acidity, sweetness and or bitterness by manipulating extractions.</p>

	1.3	Evaluate by cupping different origins, processing and roast profiles, and how these offer different flavors and performance.	Can describe a blend of their own in terms of beans variety, origin, processing and roast and the desired flavor and mouthfeel this would achieve.
	1.4	How much caffeine typically is in a decaffeinated coffee vs coffee that has been unaltered and the effects on extraction and flavor.	Understand and explain how caffeine is removed from coffee via different decaffeination processes. Can summarize the various decaffeination processes in an effective, efficient way to customers.
	1.5	How the amount of Co2 that is retained within roasted coffee on any given roast date affects brew recipes.	Can distinguish coffee that is too fresh or stale by visual clues during its extraction, and flavor. Identify how storage temperature affects speed of beans degassing. Can recognize extraction/flow affected by Co2 and adjusts brew recipes accordingly. Uses techniques to maintain freshness in slow-selling beans/blends (guest blends, single origins, decaffeinated). Applies first-in, first-out policies to ensure rotation of fresh coffee on retail shelves.
	1.6	How different packaging methods affect freshness.	Selects packaging that maximizes shelf life. Can offer insight to selecting packaging and storage that maximizes shelf life.
	1.7	How climatic condition and environmental condition affect freshness.	Stores away from extremes of heat and cold.
2.0 WORKSPACE MANAGEMENT	2.1	Analyze a café layout to ensure speed and efficiency, good workflow and smooth customer traffic.	Identifies problems with café layout. Adjusts or recommends adjustments to café layout to correct problems related to speed, efficiency, workflow and customer traffic.

3.0 GRINDING, DOSING AND TAMPING	3.1	Advantages and disadvantages of various grinder features – including motor speed, size and types of burrs (flat or conical), grind distribution, degree of static and waste, construction, ease of use (for grinders with a dosing chamber and on-demand grinders).	<p>Selects grinder based on advantages and disadvantages related to the needs of the situation it will be used for.</p> <p>Explain the advantages and disadvantages of different grinder models as they relate to the needs of the situation. Can offer insight on selecting a grinder model.</p>
	3.2	Advantages and disadvantages of features of flat and conical burrs from a scientific perspective (motor speed, particle size, heat dispersion, burr replacement).	<p>Selects type of burrs based on advantages and disadvantages related to the needs of the situation they will be used for. Can offer insight on selecting a grinder burrs.</p> <p>Explain the differences related to burr types and their effect on grind particle size.</p>
	3.3	<p>Features of different styles of hand tampers and distribution tools and when to use each.</p> <p>The efficiency of certain distribution tools and techniques and how they affect consistency. Consistency can increase but efficiency potentially can decrease.</p>	<p>Selects hand tamper and distribution tools based on ease of use and diameter of filter basket it will be used with.</p> <p>Explain how different tampers and distribution tools can influence consistency and efficiency when used.</p>
	3.4	Degree of roast will affect the physical volume/mass of a dose and affect the amount of potential solubles and flow rate.	<p>Recognizes the grinder adjustments needed for different degrees of roast, and resultant different bean density.</p> <p>Recognizes that changing the dose causes changes to espresso flavor and body, through altering the mass to energy (temperature) ratio, available solids, and change in flow rate.</p>

	3.5	Analysis of inconsistency in dosing and tamping in others and its effect on extraction.	Identifies when uneven/unbalanced extractions occur due to inconsistent dosing and tamping from another barista. Can offer advice and suggestions to bring extractions back into balance and even extraction.
4.0 EXTRACTION & BREWING	4.1	<p>Purpose of latest features on espresso machines (temperature stability, pressure profiling, multiple boilers, PID systems, pre-infusion).</p> <p>Adjustments in pressure may cause the flow rate and dissolving of compounds to increase or decrease.</p> <p>Adjustments in temperature may cause the flow rate and dissolving of compounds to increase or decrease.</p>	<p>Recognizes that changes in temperature and pressure during extraction can alter espresso flavor and flow rate.</p> <p>Determine what adjustments can be made on an espresso machine to achieve a desired flavor and body in the espresso.</p>
	4.2	<p>How extraction measurement tools and techniques relate to the assessment of espresso (espresso brewing charts and formulas, measurement devices and software).</p> <p>Process of measurement using such tools.</p>	<p>Can demonstrate the use of extraction measurement tools (digital/optical refractometer or TDS meter) and techniques to assist in monitoring the extraction process.</p> <p>Can define "extraction percentage", "total dissolved solids" and "espresso brew formula" as it relates to espresso.</p>
	4.3	The interrelationship of the various extraction parameters and its effects.	<p>Describes how changes to the mass to energy ratio (the relationship between the quantity of ground coffee and the temperature of the hot water), will change extraction %.</p> <p>Analyzes the effect of long and short extraction ratios on espresso flavor/texture.</p> <p>Applies the principle of a "balanced" extraction to espresso.</p>

			Measures extraction percentages in espresso and explains why an extraction of 18-22% is considered balanced.
	4.4	Analysis of inconsistencies other baristas have with their extraction techniques.	Identifies when uneven/unbalanced extractions occur due to inconsistent extractions from another barista. Can offer advice and suggestions to bring extractions back into balance and even extraction.
	4.5	Establish a wide experience of coffees of various species/origins/process/roast informs brewing decisions and advise customers. Apply terminology within the SCA Flavor wheel to describe a wide range of coffees of various species/origins/process/roast.	Accurately describe the flavor, body, aroma, and aftertaste of any coffee prepared as an espresso. Based on these attributes, barista can recommend certain coffees for certain blends, drinks, and customer preferences. Often, baristas will be able to discern the origin, processing style and roast level based on these descriptors.
	4.6	Can discern an origin, processing style and roast level and give objective flavor descriptors to a customer.	Can recommend certain coffees for certain blends, drinks, and customer preferences.
5.0 MILK TECHNIQUES	5.1	Understand the components of milk and how they are impacted during the pasteurization and homogenization process. Be aware of the “route to market” of milk and its shelf life.	Describe the process(es) of pasteurization, ultraheat treatment, and homogenization. Follows use-by dates and shelf life of milk as well as storage requirements – from supplier to barista to customer. Describes the role of protein in forming foam and fat for coating the foam improving mouthfeel, drainage and flavor. Describe what implications this may have for a range of milk alternatives in their performance for a barista.

			<p>Understands how proteins may be affected by the acidity of coffee. Applies this knowledge during the milk steaming process.</p> <p>Can identify deterioration in foam quality caused by aging milk and damage in production.</p> <p>Can identify milk that will not foam as it is affected by lipolysis and proteolysis.</p> <p>Understand the problems caused by free fatty acids in preventing foaming.</p> <p>Identify how and why excessive heat denatures milk protein deteriorating flavor.</p> <p>Relate why some customers may be intolerant to lactose. Not producing the enzyme lactase, required to break down lactose into glucose and galactose.</p>
	5.2	Techniques to consistently produce high quality 'microfoam'.	Can consistently deliver the highest quality foam standards as per the SCA Foam Quality Guide.
	5.3	Ability to 'freepour' two latte art patterns to a consistently good standard – on two consecutive drinks.	Freepours' latte art patterns consistently to a reasonable standard or higher on SCA Latte Art Standards.
	5.4	Good techniques for improving micro-foam and maintaining consistency in drinks.	<p>Swirls milk in the pitcher before pouring when required.</p> <p>Can execute methods of milk sharing, to obtain even foam levels on drinks, when required.</p>
	5.5	Analysis of problems other baristas have with their milk techniques.	<p>Can identify problems other baristas have with their milk techniques.</p> <p>Offers correct advice and solutions related to texturing and heating milk.</p>

6.0 BARISTA MENU	6.1	Recognizes standards for drink range as well as regional variations around the world.	Can describe variations to standard drinks range.
	6.2	Applies techniques to prepare complex orders of drinks quickly and efficiently.	Organizes the workspace and plans the work load logically, efficiently and hygienically.
	6.3	Evaluates necessary information for espresso menus with regard to content and design.	Can design and write a menu Selects drinks (and prices) based on thorough research.
7.0 HYGIENE, HEALTH & SAFETY	7.1	Organizational and operational policies and procedures (for beverage preparation and service, cleaning and storage) – to keep everything in the espresso workspace safe and hygienic.	Documents and implements policies and procedures related to hygiene and safety – taking local laws and manufacturer's instructions into consideration. Trains staff in policies and procedure related to safety and hygiene.
8.0 CUSTOMER SERVICE	8.1	Recognize how customer service ensures quality drinks, speed of service, and exceeding customer expectations.	Documents and implements policies and procedures related to customer service.
	8.2	Demonstration of consistently exceptional customer service when communicating with customers.	Can develop methods of assessing customer satisfaction. Can evaluate work procedures and systems as to their suitability for good customer service. Can utilize on-selling and upselling techniques.
	8.3	Create policy for complaint handling and advise on techniques for dealing with complaints.	Develops methods for collecting and evaluating feedback from customers – and implements necessary changes. Communicates accurately on a range of coffee-related topics – while preparing and serving orders.

9.0 CLEANING, MAINTENANCE, TROUBLE- SHOOTING, & WATER	9.1	<p>Cleaning and maintenance procedures.</p> <p>Tools critical for espresso machine and grinder maintenance</p> <p>Proper use of common preventative maintenance tools</p> <p>Demonstrates the ability to change water filters, grouphead gaskets/seals and grinder burrs, clean and change drainage tubes, and properly adjust pump pressure</p> <p>Identifies leaky steam valves and grouphead gaskets</p> <p>Difference between necessary preventative maintenance and mechanical/electrical issues deserving of a service call</p>	<p>Documents and implements policies and procedures related to cleaning and maintenance – taking local laws and manufacturer's instructions into consideration.</p> <p>Identify tools to keep near the espresso machine</p> <p>Describe the process and importance of changing water filters, cleaning and changing grinder burrs, cleaning and changing drainage tubes, pump pressure adjustment, rebuilding steamwand valves, and changing grouphead gaskets and screens</p> <p>Recognize when service calls are warranted</p> <p>Recognize and identify common issues such as leaky steam valves and group head gaskets.</p>
	9.2	Total Dissolved Solids (TDS) and its effect on espresso	Ability to measure the TDS of water and understand how the results will influence brewing
	9.3	Alkalinity and its effect on espresso	Ability to measure alkalinity using 'drops kit' and understand how the results will influence your brewing
	9.4	Total Hardness (TH) and its effect on espresso	Ability to measure TH using 'drops kit' and understand how the results will influence your brewing
	9.5	pH and effect on espresso	Learn & practice to measure pH using digital meter and/or strips and understand how the results will influence your brewing

	9.6	Recognizes the need for water filtration based on testing.	<p>Explain the differences in water filtration systems and how they apply to the water within the situation.</p> <p>Can offer insight on choosing a water filtration system.</p>
10.0 CAFE MANAGEMENT	10.1	Establishing cost as related to the price of a drink – including cost of ingredients, staff costs, general overheads and taxes.	<p>Analyses prices of drinks to ensure appropriate profit is made.</p> <p>Develops standardized recipes/specifications to evaluate profits, control costs, and maintain consistency.</p>
	10.2	How factors like spoilage, waste and theft (other than costs) can impact on profit.	Implements policies and procedures to minimize spoilage, waste and theft.
	10.3	Supply sources	Understanding of appropriate suppliers (quality, price, reliability).
	10.4	Good techniques in staff management.	Being aware of applicable systems for rostering/scheduling.

References:

Title	Author	Type of Reference
Espresso Coffee: The Science of Quality	Andrea Illy & Rinantonio Viani	Book
The Coffee Brewing Handbook	Ted Lingle	Book
The Coffee Cupper's Handbook	Ted Lingle	Book
McGee on Food & Cooking	Harold McGee	Book
Some Aspects of Espresso Extraction	Jim Schulman	Article/on-line
The SCAE Water Charts	Marco Wellinger, Samo Smrke & Chahan Yeretzian	Book