



**COFFEE
SKILLS
PROGRAM**

Brewing

Foundation | Intermediate | Professional





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SKILLS
PROGRAM**

Brewing

Professional



Specialty
Coffee
Association



BREWING CURRICULUM: Professional				
Title of module		Brewing		
Level		Professional		
Recommended course hours		18 hours excluding exams		
Course aim		The course tests the ability of the professional brewer to navigate the Brewing Control Chart. This course is intended to extend the practical and sensory brewing capabilities of the professional brewer.		
Information for student		Students must have a certification in Brewing Intermediate; Barista Intermediate is recommended.		
Code/subject	Sub code	Knowledge/skills <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>	References
1.0 EXPLORING CORE BREWING VARIABLES	1.1	Essential Elements of Brewing List the 7 essential elements of the brewing process	Briefly review the 7 essential elements of the brewing process. This review will prepare the group for the in-depth exploration, discussion and myth busting of aspects of these variables.	The Coffee Brewing Handbook – SCAA Everything but Espresso, Rao The Craft and Science of Coffee, Folmer, et. al
	1.2	Temperature Recognize the relationship between temperature variation and differences in the finished brew.	Taste and chart all coffees. Compare & discuss the difference in taste.	

	1.3	<p>Wetting (blooming) Identify methods of varying wetting phase approaches. Recognize the relationship between wetting phase difference and differences in the finished brew.</p>	<p>Sensory & technical evaluation of three brews with variable wetting(blooming) parameters (none, some, excessive) using reference brew parameters. Common practice being 2g water per gram of coffee with 30sec even wetting</p>	
	1.4	<p>Agitation (turbulence) Identify methods of varying turbulence time, frequency, and force. Recognize the relationship between turbulence variation and differences in the finished brew.</p>	<p>Sensory & technical evaluation of three brews with varying levels of agitation (none, some, excessive) using the calibration brew parameters</p>	
	1.5	<p>Contact Time Identify methods of varying water contact time for a brew method. Recognize the relationship between contact time variation and differences in the finished brew</p>	<p>Sensory & technical evaluation of three brews with different contact times using the reference brew parameters</p>	
	1.6	<p>Filtering Materials Identify different filter media options. Recognize the relationship between various filtering media and differences in the finished brew.</p>	<p>Sensory & technical evaluation of paper, metal or cloth filters using one brewing method</p>	

	1.7	<p>Filter Shape Identify different filter media shapes. Recognize the relationship between various filter shapes (cone, truncated cone, flat bottom) and differences in the finished brew.</p>	<p>Sensory evaluation of different brews made using the same recipe and brewing parameters using 3 different shapes: flat bottom, cone, and truncated cone.</p>	<p>Relationship of Coffee bed depth to Volume of Filter by EE Lockhart</p> <p>The Coffee Brewing Handbook – SCAA Everything but Espresso, Rao, Chapter 5</p>
2.0 EXTRACTION	2.1	<p>Using the Professional Brewing Worksheet, formulate and carry out a brew plan for increasing/ decreasing extraction while maintaining consistent strength.</p>	<p>Brew and chart 16%, 20%, and 24% extraction at the same strength i.e. 1.3%.</p> <p>The acceptable margin of error on each extraction is 1% and .05% strength Taste and understand the difference in the cup.</p>	
3.0 STRENGTH	3.1	<p>Explain coffee to water ratios and possible impacts on other elements. Using the Professional Brewing Worksheet, Construct and carry out a brew plan for increasing/ decreasing strength while maintaining consistent extraction %.</p>	<p>Brew and chart 20% extraction. -target brew strengths are 1.15% / 1.35% / 1.45% - using the following brew ratios to create your brews: 50g/l, 60g/l(reference/ calibration brew), 70g/l</p>	

4.0 GRIND SIZE	4.1	Grind Particle Size Recognize contributions that different sized particles make to the finished brew.	Sensory & technical evaluation of different particle sizes and the impact in the cup. -below 400microns -between 400 and 800 microns -above 800 microns -combination (reference/ calibration brew)	
	4.2	Recognize effect of grinder burr edge quality on particle quality and distribution, using new (unseasoned), optimum condition, and heavily-worn burrs.	Evaluate two coffee samples ground using new or “seasoned”, and heavily worn burrs	
5.0 THE EFFECTS OF ROAST	5.1	Roast Level vs Cup Generalize the relationship between roast level and extraction.	The same coffee at three roast levels/profiles, brew all the same way (reference/ calibration brew) and chart to see how the roast level impacts the extraction.	
6.0 USING BY-PASS	6.1	Recognize sensory and measured differences between brews made with and without bypass. Construct bypass brew manually, measure brew before and after adding bypass water.	Taste and record observations, measure, and chart brew before and after diluting with bypass water	

	6.2	<p>How to chart Measure bypass sample created in 2.1 and use Calculation method to determine extraction % and strength.</p>		Guidelines for Using By-Pass from the SCAA
	6.3	<p>When and why to use it Discuss reasons to use bypass</p>	<p>Explain what bypass can do to your finished brew and when it is used. Sometimes used to speed up the brew process when producing large volumes. Sometimes used to reduce extraction by a small amount to lose a bitter edge.</p>	
7.0 KNOW YOUR WATER	7.1	<p>The Three Key Qualities of Water Identify the three central measures to characterize water for coffee brewing.</p> <p>Discuss Measure, Aim, Treat strategy</p>	Alkalinity, Total Hardness (TH), pH	<p>SCAE Water Chart, Page 0-1.</p> <p>The Craft and Science of Coffee, Folmer, et. al</p>
	7.2	<p>Alkalinity Measure: Practice measurement of Alkalinity and plotting on the Water Chart.</p> <p>Aim: Discuss Alkalinity's effects on the cup, and recommended levels.</p>	<p>Alkalinity Measure: Practice measurement of Alkalinity and plotting on the Water Chart.</p> <p>Aim: Discuss Alkalinity's effects on the cup, and recommended levels.</p>	<p>SCAE Water Chart pg 6 & 7 for background.</p> <p>SCAA Water Quality Handbook pg 9</p>

	7.3	<p>Total Hardness (TH) Discuss components of Total Hardness. Measure: Practice measurement of Total Hardness and plotting on the Water Chart.</p> <p>Aim: discuss Total Hardness's effects on the cup and equipment plus recommended levels.</p>	Learn & practice to measure TH using 'drops kit'	SCAE Water Chart pg 6 & 7 for background
	7.4	<p>pH Measure: Practice measurement of pH</p> <p>Aim: Discuss effect of pH on the cup and equipment plus recommended levels.</p>	Learn & practice to measure pH using digital meter and strips	http://en.wikipedia.org/wiki/Hard_water
	7.5	<p>Treatment strategies Discuss treatment strategies for addressing elements which are outside recommended levels.</p>	Learn to predict how extremes and or uncontrolled parameters impact coffee quality.	-Water for Coffee -SCAE Water chart
	7.6	<p>Total Dissolved Solids (TDS) Measure: Discuss TDS, potential limitations of TDS measurement.</p>		SCAE Water Chart pg 8 for limitations.

	7.7	Water Testing	Students to test samples provided by AST to determine viability of sample for brewing as per SCAE Water Chart and to discuss possible source of samples	
	7.8	Brewing Using Variable Waters	Brew & taste using three different waters: RO, no minerals added <20ppm total TDS, SCAE/SCAA water standard, High TDS Bottled Water	

REFERENCES:

The Coffee Brewer's Handbook	Ted R. Lingle
SCAE Water Chart Report	Marco Wellinger, Samo Smrke and Chahan Yeretjian
The Craft & Science of Coffee	Britta Folmer
The Water Quality Handbook	David Beeman, Paul Songer, and Ted R. Lingle
Water for Coffee: Science Story Manual	Maxwell Colonna-Dashwood and Christopher Hendon
SCAE Gold Cup Grinding Research Report	Francisca Listov-Saabye
SCAE Gold Cup European Extraction Preferences	