SENSORY SKILLS

Sensory skills

SCAE
COFFEE
DIPLOMA

SENSORY PROFESSIONAL

BLOOMS TAXONOMY: Remembering / Understanding

Level 5: Synthesis – Create a new point of view					
Compose	Plan	Propose	Design	Assemble	Create
Organise	Manage	Construct	Set-Up	Prepare	Write
Identify	Integrate	Produce	Theorise	Build	Systematise
Formulate					

Level 6: Evaluation – Justify a position					
Judge	Select	Verify	Choose	Score	Appraise
Review	Measure	Assess	Compute	Decide	Revise
Evaluate	Value	Test	Categorise	Estimate	

SUB CODE	KNOWLEDGE/SKILL REQUIRED	STANDARDS	REFERENCE
1.0 HOW WE TASTE, PERCEIVE AND INTERPRET - GENERALITIES			
1.01.01	**WHAT IS SENSORY ANALYSIS** **RECALL DEFINITION** Sensory evaluation has been defined as a scientific method used to evoke, measure, analyse and interpret those responses to products as perceived through the senses of sight, smell, touch, taste and hearing (Stone and Sidel, 2004) Lawless, HT and Heymann , H completed this definition by distinguishing four phases to sensory evaluation: **- "Evoke**": understand the products and define their presentation conditions to control potential bias **- "Measure":** sensory is a quantitative science in which data are collected establish relationships between product characteristics and human perception (sensory or more elaborated such as liking, etc..) **- "Analyse":** Proper statistical analysis is a critical part of sensory testing. Statistical methods are used to determine if the relationships between product characteristics are likely to be real and not due to uncontrolled variations **- "Interpret":** It is important to consider the method used, its limitations to make a decision within the context of the study	L5, L6	Stone, H and Sidel, JL (2004) Sensory Evaluation practices, 3rd Edition Academic, San Diego Lawless, HT, Heymann, H (2010) Sensory Evaluation of Food Principles and Practices 2nd Edition Springer, New York Meilgaard, M & co (1999) Sensory Evaluation Techniques 4th Edition, **New Boca Raton, FL: CRC Press** Carpenter, RP & co (2000) Guidelines for Sensory Analysis in Food Product Development and Quality Control 2nd Edition Aspen Publishers, Gaithersburg, MD Castriota-Scanderbeg, A et al "The appreciation of wine by sommeliers: a functional magnetic resonance study of sensory integration"

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1.01.02	Explain the challenge of working with a human measuring instrument that is highly variable across the population and over time Working in sensory science requires that you can demonstrate knowledge in the following disciplines: sensory physiology, psychology, experimental design and statistics Differentiate between the objective judgment of the trained taster from the subjective judgment of the consumers Explain a panel set up typically requires: • Trained tasters 6 to 40 making a panel • Standard questions/questionnaires • Preparation protocol • Test design • Analysis • Facilities Explain the panel aims to: • Identify • Discriminate • Describes • Compares • Investigate • Hedonic • Judgment (preference, liking)	L5, L6	Stone, H and Sidel, JL (2004) Sensory Evaluation practices, 3rd Edition Academic, San Diego Lawless, HT, Heymann, H (2010) Sensory Evaluation of Food Principles and Practices 2nd Edition Springer, New York Meilgaard, M & co (1999) Sensory Evaluation Techniques 4th Edition, **New Boca Raton, FL: CRC Press** Carpenter, RP & co (2000) Guidelines for Sensory Analysis in Food Product Development and Quality Control 2nd Edition Aspen Publishers, Gaithersburg, MD Castriota-Scanderbeg, A et al "The appreciation of wine by sommeliers: a functional magnetic resonance study of sensory integration"
1.02.01	**RECALL WHY IS SENSORY IMPORTANT IN COFFEE** Sensory Evaluation role: - Describe, differentiate and quantify sensory characteristics of the product - Identify which sensory profiles are preferred by end users - Relate sensory profiles and other product characteristics: physical, chemical, recipe, process - Scope: quality control, product development, marketing innovation, consumer acceptance and communication Technique widely used in food industry extended to others (car, perfumery, tobacco, pharmacy, etc …),. for Quality Control, or Product Development	L5, L6	Lingle (2001) Muñoz, AM, Civille, GV and Carr, BT (1992) Sensory Evaluation In Quality Control Van Nostrand Reinhold, New York. Yantis, JE [Ed] (1992) The Role of Sensory Analysis in Quality Control ASTM. West Conshohocken, PA
1.02.02	Cupping seeks to: • Identify potential defects and taints • Identify positive flavours and their quality • Evaluate intensity • Record the results Explain that sensory analysis establishes a general picture of a coffee's potential that can be refined and adjusted to various green coffee selection, blending and brewing practices	L5, L6	Lingle (2001) Muñoz, AM, Civille, GV and Carr, BT (1992) Sensory Evaluation In Quality Control Van Nostrand Reinhold, New York. Yantis, JE [Ed] (1992) The Role of Sensory Analysis in Quality Control ASTM. West Conshohocken, PA

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1.03.01	**WHAT IS CONDUCTING A SENSORY STUDY** Benefits of professional sensory analyses Planning of study From objective to interpreting and reporting results	L5, L6	Meilgaard, M & co (1999) Sensory Evaluation Techniques 4th Edition, **New Boca Raton, FL: CRC Press**
1.03.02	Be capable to conceptualise a professional sensory study	L5, L6	Meilgaard, M & co (1999) Sensory Evaluation Techniques 4th Edition, **New Boca Raton, FL: CRC Press**
1.04.01	**THE MEANING OF BEING A GRADUATE SENSORY PROFESSIONAL; SCOPE OF YOUR ABILITIES** Graduate will have: - the knowledge to run sensory evaluation in a coffee business e.g. generate a repeatable and methodical sensory measure of coffees - be aligned with the coffee standards - the basic sensory skills required to professionally start to identify specialty coffee qualities and to describe black coffee beverages characteristics	L5, L6	Meilgaard, M & co (1999) Sensory Evaluation Techniques 4th Edition, **New Boca Raton, FL: CRC Press**
1.04.02	Running sensory is managing people as the measurement instrument e.g. generate repeatable, calibrated and unbiased responses Running sensory is setting up repeatable tests following standard procedures appropriate to a problematic Running sensory is analysing data and reporting results Being a skilled taster helps the sensory professional to run the discipline; being the only skilled taster in a coffee business is expertise, not running sensory and risky Becoming a skilled taster is a long process requiring years of experiences	L5, L6	Meilgaard, M & co (1999) Sensory Evaluation Techniques 4th Edition, **New Boca Raton, FL: CRC Press**
2.0 PHYSIOLOGY AND SENSORY ATTRIBUTES			
2.01.01	**SENSORY ATTRIBUTES AND THE WAY TO PERCEIVE THEM** The senses used to assess a coffee: • Sight • Smell (orthonasal olfaction) • Flavour (retronasal olfaction, taste and trigeminal perception) • Consistency and texture	L5, L6	Lawless, HT, Heymann, H (2010) Sensory Evaluation of Food Principles and Practices 2nd Edition, Springer, New York 2003 Araujo, I et al – Taste: Olfactory convergence and the representation of the pleasantness of flavour in the human brain

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2.01.02	**Skilled in perceiving and abstracting attributes on a distinguished level**	L5, L6	Lawless, HT, Heymann, H (2010) Sensory Evaluation of Food Principles and Practices 2nd Edition, Springer, New York 2003 Araujo, I et al – Taste: Olfactory convergence and the representation of the pleasantness of flavour in the human brain
2.02.01	**ANATOMY & PHSIOLOGY OF SENSATION** **The chain of sensory perception** (Tasting as neurological circuit:) Receptors: - Taste buds for taste - Olfactory receptors for aroma and flavour (nasal epithelium) - Tactile receptors of the mouth cavity for texture mouthfeel (Papillea) Nerves (connection to the sensorial cortex [brain]): - Trigeminal nerve (temperature, astringency mouthfeels) - Fascial nerve (taste) - N glossopharyngeus Cortex/Brain: complex processes: starting at the sensorial Cortex		Meilgaard, M, GV Civille and BT Carr (2007) Sensory Evaluation Techniques 4th Edition, **New Boca Raton, FL: CRC Press**
2.02.02	**Understands the basic anatomy of sensation:** Understands the difference of a receptor and a nerve and their "function" Understanding that tasting is working with a neurological circuit: Apply the knowledge that adaptation, decrease in sensitivity due to continued exposure to a stimulus into daily cupping work (Brain / receptor / odour memory)		Meilgaard, M, GV Civille and BT Carr (2007) Sensory Evaluation Techniques 4th Edition, **New Boca Raton, FL: CRC Press**
2.02.03	**Sensation and perception** Information received by sensors is a sensation. Once interpreted by our brain it becomes a perception (Marieb 2007)		Meilgaard, M, GV Civille and BT Carr (2007) Sensory Evaluation Techniques 4th Edition, **New Boca Raton, FL: CRC Press**
2.02.04	Stress the importance of having sensitive and calibrated tasters		Meilgaard, M, GV Civille and BT Carr (2007) Sensory Evaluation Techniques 4th Edition, **New Boca Raton, FL: CRC Press**

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2.03.01	**TRESHOLD TEST** Psychometric curve: detection, recognition, increases of intensity, saturation and (pain) Flavour is not the simple addition of the three senses responses, there is perceptual interaction between stimuli co-experienced.		
2.03.02	Recognises basic tastes relevant for coffee in a threshold test Recognise that perceptual interactions between stimuli (e.g.: vanillin +sugar vs. basilic+ sugar) can modify our perception. The goal as a sensory analyst is to be as objective as possible.		
2.04.01	**PSYCHOLOGICAL FACTORS** **Bias to consider before conducting sensory evaluation** **Expectation error**: Code A or #1 or round nb 100, 450 can be associated with higher scores Seeing the green beans can influence your judgement (show picture of Jamaican Blue Mountain and Brazilian coffee) **Suggestion effect**: other comments or behavior can influence others e.g.: Mmmm! If the boss says “Sample A is so aromatic,” the others are likely to follow **Logical error**: a darker colour will be rated more intense Is a darker crema espresso necessarily more roasted? **Halo effect**: the judgement made to rating one attributes may influence other attributes rating If the coffee is more aromatic will it be rated more intense, more body, more acid, … **Order effect**: The preceding sample can affect the scoring of the following /adaptation After a dark roast sample, any moderately roasted sample will seem very acid	L5, L6	Meilgaard et al (2007)

SUB CODE	KNOWLEDGE/SKILL REQUIRED	STANDARDS	REFERENCE
2.04.02	Match specific examples of sensory psychological factors in the correct sequence with named errors The challenge of the sensory analyst is to avoid or control this bias so that they don't mislead the sensory result	L5, L6	Meilgaard et al (2007)
3.0 DETECTING SENSORIAL POSITIVE QUALITIES IN COFFEE			
3.01.01	**TASTE AND TEXTURES IN THE CONTEXT OF COFFEE – THE COFFEE STRUCTURE** Reminder: There are 5 prototypical tastes Reminder: All coffees are naturally acid, bitter and have a sweet perception (more than they are physically sweet) Have your own references for every key sensory attributes **Focus** on Different acidity qualities: • tartaric • malic • lactic • citric **Focus** on Taste: • bitter burnt caramel • taste bitter wood **Illustrate:** • Astringency • Body • Pungent	L5, L6	
3.01.02	Ability to discriminate between, and rank, four levels of acidity and bitterness in complex solution Describe intensity and quality of acidity, bitterness and mouthfeel in coffees (Part II) Re-acknowledge that individuals taste differently and determine threshold values	L5, L6	
3.02.01	**AROMAS AND FLAVOURS IN THE CONTEXT OF COFFEE** Main (Positive) aromas of the coffees: name, reference, sensation when above the coffee cup and in mouth Have your own references for every key sensory attributes Factors in the coffee value chain generating those aromas - most admitted model Develop the memory of aroma reference	L5, L6	

SUB CODE	KNOWLEDGE/SKILL REQUIRED	STANDARDS	REFERENCE
3.02.02	By groups of three aromas, find the correct association Aroma name, reference Nez du café and coffee presenting this aroma: • Floral – Sidamo GR2 washed • Nutty – Brazil NY2 FC natural • Spices – Sumatra GR1 • Tobacco leaf, humous – robusta • Winey – High grown washed Colombia • Cocoa – dark roasted Brasil NY2 natural • Honey – Pulped natural Brazil FC or honey process central America • Citrus – Kenya FAQ+ • Ninth – open for choice	L5, L6	
3.03.01	**THE COFFEE COMPOSITION – CHEMICALS AND SUPPOSED SENSORY EFFECT** The coffee composition complexity makes the sensory complexity Compound or mix of compounds and its sensory characteristics		
3.03.02	Difference in composition between Arabica and Robusta; The volatile and volatiles compounds of coffee The complexity of the coffee composition leads to approximate models of compounds making one coffee aroma		
4.0 DETECTING LOW SENSORIAL QUALITIES IN COFFEE – DEFECT AND TAINT			
4.01.01	**DEFINE POSITIVE AND NEGATIVE AROMAS IN COFFEE** Nature of taint and defect on coffee Their presence is severely jeopardise the quality of coffee Recognise and categorise key positive aromas and negative aromas in coffee	L5, L6	
4.01.02	Smell positive and negative aromas (need for kit)	L5, L6	
4.02.01	**EXAMPLES OF DEFECT AND TAINT FOUND IN GC, ROASTING, EXTRACTION, STORAGE** • Fermented or rio or musty or mouldy • Woody • Burnt, baked or under roasted • Over extracted / over brewed (too long too hot) • Stale/rancid Memorise Reference Experiment taint and defect in French press or espresso barista vs clean standard in pair test		

SUB CODE	KNOWLEDGE/SKILL REQUIRED	STANDARDS	REFERENCE
4.02.02	Link taint and defect to threshold: often they will be detected by a part of the population only given their concentration Link taint and defect to cultural habit and awareness: ex Rio Turkish / Greek coffee Skilled and sensitive tasters only will reject them in tasting		
5.0 RUNNING A CUPPING SESSION AND TASTING THE DIVERSITY OF COFFEE – CUPPING GENERALITIES			
5.01.01	**WHAT IS CUPPING** It is a sensory analysis process specific to coffee "Coffee cupping is a method used to systematically evaluate the aroma and taste characteristics of a sample of coffee beans" – (Ted Lingle 2001)	L5, L6	SCAA Lingle 'Coffee Cuppers Handbook'
5.01.02	Repeat a definition of cupping	L5, L6	SCAA Lingle 'Coffee Cuppers Handbook'
5.02.01	**KEY TERMINOLOGY/SENSORY VOCABULARY** Cupping coffee with: **Eye:** colour, froth, crema **Nose:** aroma categories (see point 5) **Mouth:** basic tastes and mouthfeel	L5, L6	Coffee – Sensorial Analysis – Vocabulary ISO TC 34/SC 15N 2113
5.02.02	Match key cupping terminology phrases with an explanation of the terms	L5, L6	Coffee – Sensorial Analysis – Vocabulary ISO TC 34/SC 15N 2113

6.0 THE STEPS OF COFFEE PROFILING			
6.01.01	**PROFILING INTENSITY OF A FEW IN MOUTH ATTRIBUTES WITH AN ALTERNATIVE PREPARATION METHOD: ESPRESSO, FRENCH PRESS, FILTER COFFEE…** Prepare four coded coffees at once to present the steps of profiling: • Generate vocabulary individually before regrouping terms • Separate descriptive from qualitative terms • Calibrate the groups on description e.g. give terms expected for each coffee • Select relevant descriptive terms only to make the profiling questionnaire/form (7 attributes maximum) • Ensure comprehension of attributes using definition and reference • Re-prepare same four coffees with different codes for individual rating in the rotation presentation • Report all scores on paper board questionnaires (1 questionnaire per coffee) to discuss scoring result and alignment / dispersion of scoring • Calibrate scoring • Re-taste, if needed on fresh samples Samples should be noticeably different and differ on the roasting and extractions more than on the origins **Example**: Brazilian light roast (Agtron 65 -70) Brazilian medium roast (Agtron 55 – 60) Ethiopian washed GR2 coarse grind (>700mμ) Ethiopian washed GR2 fine grind (<350mμ) **Acknowledge that the preparation protocol is set to compare coffees and not to optimise them (tackled in brewing and grinding)**	L5, L6	
6.01.02	Difference between comparative and monadic profiling Importance of a random or balanced presentation of samples. The rotation presentation in coffee Ability to rate coffees for core descriptive attributes acidity, bitter, sweet perception, body and a few specific flavours Recognise that calibration is key for panel repeatability Profiling is descriptive only and should not include qualitative notions (reserved for the expert hybrid method like SCAA cupping form) Analyse profiling results with average scores and dispersion State that profiling analysis requires statistical test (like Anova) to determine whether average are significantly different Relate the sensory differences observed and the nature of the samples	L5, L6	

7.0 THE SCAA CUPPING FORM			
7.01.01	**MASTER THE SCAA CUPPING:** **PREPARATION, TASTING AND CUPPING FORM, RESULT** Work as a group on a concrete examples of 5 coffees. Give individual end result position Objective of the method – describe and give a qualitative rating Mention other system in use: COE, Espresso, home systems, … • Explain cupping form dimension: descriptive, qualitative, defects and define attributes not known • Recap protocol and leave group set table • Eventually correct setting before water pouring • Individual full tasting, rating and presentation of every coffee key points • Reporting results on paper board • Calibration and re-tasting, on fresh coffees if needed Samples should be noticeably different, with differences in origin, cleanliness, finesse and balance **Example**: Colombia high overall grade Colombia low grade Colombia defect Kenya high grade Kenya low grade	L5, L6	
7.01.02	Be able to use standard terminology to clearly communicate on coffees Distinguish the difference between descriptive and qualitative terms and between positive and negative key terms Acknowledge that the terms balance, sweet perception, finesse are conceptual terms defining high quality coffee and requiring the experience of the coffee experts to be rated correctly as per his pairs Be able to spot the defective cup, the low and the high grades, rate correctly acidity and body Assimilate that the lowest amount of defect the better cup Know that the same coffee should be profiled similarly anywhere, but that it can score a different overall value depending on the scoring methodology used SCAA, COE Acknowledge that analysis is based on average and dispersion, and that experimental presentation design is the rotation Relate the scoring values and overall rating with the nature of the samples	L5, L6	

8.0 HOW TO SET UP SENSORY IN YOUR BUSINESS AND SENSORY APPLICATIONS – EQUIPMENT, MAINTENANCE AND STAFF			
8.01.01	**WHAT IS PANEL AND WHY SET UP A PANEL?** (Ref 1.0) - Robustness of the group versu a one person - Is a measurement instrument	L5, L6	
8.01.02	A group is better, more objective, not personal One is better than none	L5, L6	
8.02.01	**FACILITY, TASTING AND PREPARATION AREA** Workgroup discussion where the items below should be identified and acknowledged: The very necessary basics: • Separation preparation and tasting • Ability to prepare a repeatable stimulus • Ability to deliver standard tasting conditions (seated, individual booths) • Be practical (tap, water) Ideally Sensory analysis rooms must be: • Hygienic • Odour free • Encourage panellist sensitivity • 45 – 55% RH • Room temperature • Plain colours • No carpets • Encourage no bias • Lighting to meet ISO 3664 • Red light as further option Additional core equipment for a medium sized roastery cupping lab in addition to basic cupping equipment outlined in the foundation course includes the following: • Green coffee sample storage • Roast coffee sample storage • Humidity Meter/Control • Refractometer • Roast Colour Meter • O2/CO2 Meter • Grind Analysis Equipment	L5, L6	ISO standard 3664 2009 for light Meilgaard et al (2007)
8.02.02	Identify the key design features of a cupping lab / sensory lab Identify equipment that is not necessary for a cupping session Explain how a badly designed lab is counterproductive Demonstrate how extra sensory equipment can support sensory analysis of coffee and how they can add value to the business	L5, L6	ISO standard 3664 2009 for light Meilgaard et al (2007)

8.03.01	**CORE EQUIPMENT FOR TASTING AND SAMPLES** • Booth • Table • Spittoon • Cups • Spoons • Water quality (treatment) • Temperature Trainees to list for their business the 'must have' and the 'nice have'	L5, L6	
8.03.02	Explain that equipment can vary in modality (Example: turning table or not, sink spittoon or not). Identify the repeatability of testing and brew protocol as being the important point	L5, L6	
8.04.01	**EQUIPMENT AROUND PREPARATION** Storage area dry and cool, login equipment (as simple as stickers or high tech as scan), preparation devices like grinder, boiler, weight scale, dishwasher, sink, humidity and temperature logging Trainees to list for their business the 'must have' and the 'nice have'	L5, L6	Meilgaard et al Manufacturer manuals
8.04.02	Illustrate how a coffee sensory lab might receive and store samples adequately Detail how to test within desired age sensory property Repeat different preparation methods for common tests in coffee sensory analysis	L5, L6	Meilgaard et al Manufacturer manuals
8.05.01	**MAINTENANCE AND CLEANING** Grinder, machines Cleaning schedule daily, weekly, monthly Calibration of instruments	L5, L6	Manufacturer specifications
8.05.02	Explain that all equipment needs calibration Determine frequency with group Recall that food grade, odour and flavour free products are preferred for sensory	L5, L6	Manufacturer specifications
8.06.01	**STAFF** Tasks multiple in skills and discipline: job descriptions and recruitment Preparation, panel leader, analyst. Depend on size, costs Trainees draw their staff organisation and share with other trainees. Alternatively animators give a few examples in business	L5, L6	

8.06.02	Importance of keeping samples blind from tasters e.g. avoid preparatory and taster being the same person	L5, L6	
8.07.01	**IT ELECTRONIC** Excel, dedicated software or manual table for statistic Recording system Specific statistical methodology and data analysis will be covered in Professional	L5, L6	
9.0 SET UP YOUR SENSORY PANEL			
9.01.01	**WHAT PANEL FOR WHAT TEST** Recap from Intermediate		
9.02.01	**SCREENING TASTERS** Recap from Intermediate Don't get low sensitivity tasters		
9.03.01	**TRAIN YOUR PANEL AND PANELLISTS: WRITE A TRAINING PROGRAMME** • Write your own training program (either related to your own business or allocated by animator) – Share with the group Long process : 6 months minimum Program example in content and time Ratio: nb tasters / taster expertise / scope From the In/Out panellist to the SCAA/COE jury	L5, L6	Standard ISO SCAA, COE training Depend on activity Be practical and adapted to the topic in content and time: - Defect - Green coffee - Roasting - Brewing
9.03.02	Recognise that developing an appropriate level of sensitivity in coffee and gaining knowledge takes time Improving calibration, recognition and broadening the range of sensory test protocols a cupper has knowledge of, is part of their learning journey Understand that panel performance is a group exercise and not a competition	L5, L6	Standard ISO SCAA, COE training Depend on activity Be practical and adapted to the topic in content and time: - Defect - Green coffee - Roasting - Brewing

9.04.01	**CHECK PERFORMANCE AND CALIBRATION** Regular re-calibration of panel members yield better sensory results because: • Increased consistency • Ensures relevancy • Ensures objectivity The frequency of analysis: minimum bi-yearly, should not be less than yearly Calibration samples is one method of ensuring continuous assessment - Refer to calibration exercises done in Part II - Do calibration exercise with gritty/smooth material - Visual cappuccino barista	L5, L6	Meilgaard et al (2007)
9.04.02	Recognise calibration as an important and effective method of yielding consistent and relevant results	L5, L6	Meilgaard et al (2007)
10.0 APPLICATION – SHELF LIFE, NPD			
10.01.01	**SHELF LIFE** A legal demand for BBE date Because roasted coffee is a low moisture, low risk product where the BBE is based on internal quality checks that have to be documented by law Type of applicable tests: hedonic or sensory objective? **Example**: Consumer or trained tasters? Accelerated or real time shelf life? Use of reference sample or not? Sensory tests are usually carried out in relation with analytical measures, e.g. oxygen meter	L5, L6	Illy & Vianni (2005) Intermediate Sensory: Set up equipment (oxygen meter)
10.01.02	Explain that coffee changes chemically after roasting as it stales. CO2 decreases in coffee, peroxides develop and there is also an increase in off flavours Explain that this means the frequency of testing and period of determination changes through the shelf life Recall that roasters usually define their shelf life between 1 and 12 months. This is done depending on internal quality standards Refer to stale/rancid coffee tasted in Part I defects	L5, L6	Illy & Vianni (2005) Intermediate Sensory: Set up equipment (oxygen meter)

10.02.01	**NEW PRODUCT DEVELOPMENT** Ensure your development objective is met sensorially Groups set up a development plan including the sensory test for the following themes: *My new roaster doesn't behave like the old one and my customers have noticed the change. How do I come back to the same coffee profiles?* *I have tasted this green coffee at a colleague that was very qualitative. I have bought this same green coffee but it doesn't deliver the same at my place. How can I make a great cup?* *The coffees I am offering taste too much alike. How do I diversify?* *My customers complain that my coffees are too bitter. How can I correct?*	L5, L6	Make an exercise
10.02.02	Identify which tests are most applicable for different types of NPD, e.g. Using Triangle testing to determine if there is a difference between two options; Profiling for longer term solutions and full description Explain how to use tests discussed earlier in the course to determine if the quality of the product reflects the green coffee Explain how to integrate sensory tests with lab equipment to create relevant sensory results	L5, L6	Make an exercise

Key Terminology

Word or Term	Proposed Description	Source
Acidity	A basic taste characterised by the solution of an organic acid. A desirable sharp and pleasing taste … as opposed to an over-fermented sour taste	ICO, 1991
Aftertaste	The sensation produced by the lingering taste and aroma	Cappuccio, 2005
Aroma	The sensation of the gases released from brewed coffee, as they are inhaled through the nose through sniffing	Lingle, 2011
Astringent	An aftertaste sensation consistent with a dry feeling in the mouth, undesirable in coffee	ICO, 1991
Balance	A pleasing combination of two or more primary taste sensations	Lingle, 2011
Basic Tastes	The five basic tastes of sweet, sour, bitter, salty and umami	
Body	The physical properties of the beverage. A strong, but pleasant, full mouthfeel characteristic	ICO, 1991
Break	Aromatic assessment of the crust as it is broken three times	
Clean	Free from flavour taints or faults	Lingle, 2011
Crust	Aromatic assessment of the crust of wet coffee grounds that forms on the top of the brew surface immediately after brewing	
Cupping	A method used to systematically evaluate the aroma and taste characteristics of a sample of coffee beans	Lingle, 2011
Cupping Glasses/Bowls	All cups or glasses used should be of the same volume, dimensions and material of manufacture: **Cupping Glasses** 5 to 6 oz tempered glass **Porcelain bouillon bowls** of 175-225ml clean cups should be clean with no apparent fragrance and at room temperature	SCAA, 2009
Cupping Grind	Coarser than filter grind with 70% to 75% passing through a 850mμ sieve	SCAA, 2009
Cupping Roast	Sample roast targets: • Time: 8 – 12 minutes depending on roaster size • Colour: Agtron 60 – 65 (M-Basic)/Probat 105– 125 (colourette) • Coffees cupped 8 - 24 hours after roasting	SCAA, 2009
Dry	Assessment of the fragrance of the dry coffee grounds after grinding and prior to brewing	
Flavour	Flavor is defined as the sum of perceptions resulting from stimulation of the sense… it includes the aromatics, the tastes, the chemical feeling factors	Meilgaard et al, 2007

Fragrance	The sensation of the gases released from roasted and ground coffee beans, as the aromatic compounds are inhaled through the nose by sniffing	Lingle, 2011
Gustation	"The detection of stimuli dissolved in water, oil, or saliva, by the taste buds"	Meilgaard et al, 2007
Mouthfeel	The tactile sense derived from physical sensations in the mouth during and after ingestion	Lingle, 2011
Olfaction	Airborne odorants (chemical substances) that are sensed by the olfactory epithelium (located at the roof of the nasal cavity)	Meilgaard et al, 2007

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