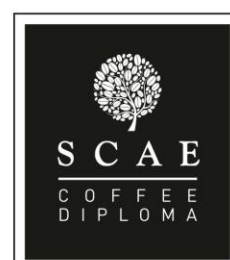


GREEN
COFFEE

Green coffee



SCAE COFFEE DIPLOMA: GREEN COFFEE

GREEN COFFEE FOUNDATION

BLOOMS TAXONOMY: Remembering / Understanding.

Level 1: Knowledge – Remembering information				
Recognize	Memorize	List	Name	Relate
Define	Identify	Distinguish	Repeat	Recall
Level 2: Comprehension – Explaining concepts				
Restate	Describe	Explain		
Discuss	Identify	Express	Translate	Recognize
Locate	Report	Extrapolate	Convert	Review
Interpret	Abstract	Transform		

Pre-Requisites

It is recommended that the following CDS courses are designated as pre-requisites to this CDS module Green Coffee Foundation Level:

1. Introduction to Coffee
2. Sensory/Cup Tasting Foundation.

The reason for recommending the 'Sensory/Cup Tasting Foundation' module as a pre-requisite is because there is a practical cupping in the examination and candidates will be more familiar with standard cupping protocol if the advice is followed.

SUB CODE	KNOWLEDGE/SKILL REQUIRED	STANDARDS	REFERENCE
1.0 THEORETICAL PRINCIPLES			
1.01.01	BOTANY Distinguish between species and variety in coffee		
1.01.02	List the two main species of coffee grown commercially as Arabica and Robusta	L1	Espresso Coffee A. Illy R. Viani (2005)
1.01.03	Recognise that Robusta also has the botanical name Canephora	L2	Espresso Coffee A. Illy R. Viani (2005)
1.02.01	THE ORIGIN OF COFFEE Recognise that coffee has been spread around the globe by people and that it originates in Africa		
1.02.02	Identify that all coffee is indigenous to Africa and that: 1. Arabica originates from Ethiopia 2. Robusta originates from West and Central Africa	L1	Espresso Coffee A. Illy R. Viani (2005)

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SUB CODE	KNOWLEDGE/SKILL REQUIRED	STANDARDS	REFERENCE
1.03.01	WHAT PART OF THE WORLD DOES COFFEE GROW? Distinguish between climates that can sustain coffee and those that cannot	L1	Espresso Coffee A. Illy R. Viani (2005)
1.03.02	Define that coffee growing countries are broadly located between the tropics of Cancer and Capricorn		
1.04.01	WHAT LIMITS WHERE COFFEE CAN BE GROWN IN THE WORLD? Recognise that coffee is susceptible to frost and that it has optimum growing conditions. Coffee beans turn black and quality is affected. Severe frost can cause internal damage to the plant tissue and kill it	L1	Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)
1.05.01	WHY IS BOTANY IMPORTANT? Unique differences in the species mean they are: 1. Farmed in different places 2. Taste different 3. Look different physically 4. Have a different value	L2	
1.05.02	Explain that Robusta requires a warmer and consistently wetter climate to survive than Arabica		
1.05.03	Distinguish between the pepper spice, more bitterness, and more body of Robusta		
1.05.04	Describe and recognise the physical difference in size and elliptical shape		
2.0 WORLD PRODUCTION			
2.01.01	SPECIES SPLIT Recognise that there is a different amount of Arabica and Robusta grown annually	L1	ICO
2.01.02	Recall that the split of production in any by species is approximately: 60% Arabica 40% Robusta	L1	ICO
2.02.01	PRODUCTION Recognise that different countries produce different volumes of coffee (always measured as 60kg bags in statistics)	L1	ICO
2.02.02	Recall that: 1. Brazil is the world's largest producer of coffee 2. Brazil is the world's largest Arabica producer 3. Vietnam is the world's largest Robusta producer	L1	ICO

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SUB CODE	KNOWLEDGE/SKILL REQUIRED	STANDARDS	REFERENCE
2.02.03	Total bags in current year	L2	ICO
2.02.04	Recognise that this changes on an annual basis and is increasing	L2	ICO
3.0 FARMING			
3.01.01	LAND TENURE Recognise that farms of different sizes grow coffee	L1	
3.01.02	Distinguish between the term smallholder and farm		
3.02.01	PLANT MANAGEMENT Recognise that there different farming systems used throughout the world to grow coffee	L2	ICO
3.02.02	Explain that differences in yields and pest resistance change how farmers grow coffee		
3.02.03	Explain that plants are looked after differently by farmers because if you compare Arabica and Robusta: 1. Robusta has higher potential yields of around 50% 2. Robusta is more pest resistant		
4.0 PROCESSING METHODOLOGY			
4.01.01	PROCESSING Recognise that processing is common to all coffees because you have to harvest the seed from the cherry in some way	L2	
4.01.02	Understand that processing is different in different countries often as a result of cultural norms rather than scientific fact	L2	
4.01.03	Understand that there are different risks associated with different processing methods	L2	
4.01.04	Carry out a practical cupping exercise where students: 1. Assess a natural, washed and pulped natural coffee side by side (ideally from the same producing country) 2. Comment on the cup characteristics in a group discussion	L2	
4.02.01	PICKING Recall that different picking methodologies exist	L1	Espresso Coffee A. Illy R. Viani (2005)
4.02.02	Distinguish between strip picking and selective picking	L1	

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SUB CODE	KNOWLEDGE/SKILL REQUIRED	STANDARDS	REFERENCE
4.02.03	Know that different land ownerships systems will have different types and amounts of processing equipment on a coffee farm ranging from none, through to a fully integrated system	L2	
4.02.04	Recall that some farmers will only part process their coffee and some farmers will prepare it all the way through to export	L2	
4.03.01	WASHED PROCESS Explain that the washed process is a broad term for a number of processes that involves the removal of pulp and mucilage from the coffee seed	L2	Espresso Coffee A. Illy R. Viani (2005)
4.03.02	Describe the basic flow of the washed process		
4.03.03	Recognise a pulper when shown a picture of either a vertical disc, horizontal drum, or eco pulper		
4.04.01	NATURAL PROCESS Explain that the natural (or dry process) is a broad term for a number of processing methods that involve drying whole coffee cherries	L2	Espresso Coffee A. Illy R. Viani (2005)
4.04.02	Describe the basic flow of the natural process		
4.05.01	PULPED NATURAL PROCESS Explain that the pulped natural process is a broad term for a group of processing methods where none or a small amount of mucilage as well as the pulp is removed from the coffee seed	L2	Espresso Coffee A. Illy R. Viani (2005)
4.05.02	Describe the basic flow of the pulped natural process		
4.06.01	DRYING Recall that different methodologies of drying exist	L1	Espresso Coffee A. Illy R. Viani (2005)
4.06.02	Distinguish between 1. Patios 2. African raised beds 3. Mechanical drying	L1	Espresso Coffee A. Illy R. Viani (2005)
4.07.01	MILLING Prior to export the husk or parchment of coffee needs to be removed and the coffee graded to defined standards Until that point it is stored under but close to 12% total moisture	L1	Espresso Coffee A. Illy R. Viani (2005)

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SUB CODE	KNOWLEDGE/SKILL REQUIRED	STANDARDS	REFERENCE
4.07.02	Explain that coffee has the husk or parchment removed before grading and shipment	L1	Espresso Coffee A. Illy R. Viani (2005)
4.08.01	GRADING Explain that coffee is graded and that this is where a difference in quality starts to be defined by the coffee trade.	L2	Espresso Coffee A. Illy & R. Viani (2005) Coffee: Growing, Processing, Sustainable Production J.N. Wintgens (2009)
4.08.02	Coffee is primarily graded by the number of defects and bean size		
4.08.03	Defects can modify cup quality leading to unpleasant flavours		
4.08.04	Homogenous bean size is important in achieving roast consistency		
4.08.05	Identify the difference between a coffee with a high defect count and a low defect count in terms of: 1. Physical difference 2. Cup consistency		
5.0 MARKETS			
5.01.01	FUTURES MARKETS Describe a futures market as: "A market that allows you to buy specific weights of coffee at a specified price within a specified future delivery period"	L2	
5.01.02	Explain that futures markets were created to reduce risk	L2	
5.02.01	MARKETS Explain that coffee is traded on futures markets and that the price of physical coffee derives from these markets	L2	
5.02.02	List the two main futures markets of NY and London and Identify which Species of coffee is traded on each	L2	



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SUB CODE	KNOWLEDGE/SKILL REQUIRED	STANDARDS	REFERENCE
6.0 STORAGE AND TRANSPORTATION			
6.01.01	TRANSPORT Recognise that coffee is shipped almost exclusively by boat and in containers and that: 1. bag weights are different 2. different bag materials can be used	L1	Coffee: Growing, Processing, Sustainable Production J. N. Wintgens (2009)
6.01.02	Identify different bag types from pictures and recall that their weight can vary 21 tonnes – 30kg	L1	Coffee: Growing, Processing, Sustainable Production J. N. Wintgens (2009)
6.01.03	Coffee will change over time. Explain that can affect quality	L2	ICO Resolution 420
6.01.04	Recall the key parameters of ICO resolution 402	L2	ICO Resolution 420
6.02.01	STORAGE Coffee will change over time and will not stay fresh indefinitely	L2	Espresso Coffee A. Illy & R. Viani (2005)
6.02.02	To keep speciality coffee in optimum condition it should be stored at 20°C and 60% RH		
6.02.03	Recall that coffee is seasonal and will become woody over time		
6.02.04	Recognise that the storage conditions of coffee will affect its longevity		
7.0 CERTIFICATION			
7.01.01	CERTIFICATION Part of the coffee industry focuses on socio-economic factors in addition to seeing coffee as a commodity	L2	ITC Exporters Guide
7.01.02	Third party accreditations exist that certify different stages in the coffee supply chain against socio-economic and environmental standards		
7.01.03	Explain that differentiation of coffee products through sustainable certification now comes in many forms		
7.01.04	Recognise three certification schemes and their broad goals from a list		



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SUB CODE	KNOWLEDGE/SKILL REQUIRED	STANDARDS	REFERENCE
8.0 DECAFFEINATION			
8.01.01	WHAT IS DECAFFEINATED COFFEE? Recognise this as a coffee where the majority of caffeine removed by physical process and solvent medium. Specifically in EU countries there has to be a maximum concentration of 0.1% related to the dry mass	L2	Coffee: Recent Developments R. J. Clarke (2001)
8.01.02	Recognise that decaffeinated coffee looks and cups different from caffeinated coffee		
8.02.01	WHAT IS CAFFEINE? Define caffeine as a bitter alkaloid that has a dose dependent action on human body	L2	
9.0 EQUIPMENT AND MAINTENANCE			
9.01.01	GRADING SCREENS Understand that green coffee enters a dry mill in different shapes and sizes but is sold in homogenous size bandings known as screen sizes	L1	
9.01.02	Recognise a sizing screen when shown one	L1	
9.01.03	Demonstrate how to use a set of sizing screens in an exam and report on results achieved from using them	L1	
9.02.01	MOISTURE METERS Understand that there are different types of moisture meter available and that they are used to confirm the total moisture of a coffee sample	L2	ICO
9.02.02	Recall that for speciality coffee the defined total moisture should be between 8 - 12.5% when tested		
9.02.03	Repeat the process of how to test a coffee for total moisture		
10.0 PLANNING AND FINANCIAL MANAGEMENT			
	Not required		

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Word or Term	Proposed Description	Source
Caffeine	A bitter alkaloid compound present in the coffee bean that has a dose dependent action on the human body	
Cash Market	Participants buy and sell physical green coffee that will be delivered either immediately or promptly. The cash transaction therefore involves the transfer of ownership of a specific lot of a particular quality of physical coffee	ITC
Certification	A guarantee that specific rules and regulations of voluntary standards are met in a certain environment (e.g. individual producer, producer group, co-operative, or even region)	ITC
Clean Coffee	A well graded coffee, free of defects	Wintgens
Coffee Cherry	The flesh fruit of the coffee tree	Wintgens
Coffee Farm	A specialised coffee farm where: <ul style="list-style-type: none"> workers who are not family members carry out the majority of work on the farm profit rather than subsistence is a primary goal 	
Decaffeinated Coffee	A coffee where the majority of caffeine has been removed by physical process and solvent medium. Specifically in EU countries there has to be a maximum concentration of 0.1% related to the dry mass	
Fermentation Tank	A specially designed tank, usually made of concrete, and often varying in shape and size with a sloped bottom. They are built for the natural fermentation and degradation of mucilage from coffee	
Futures Market	Participants buy and sell a price for a standard quality of coffee. The futures transaction centres around trading a futures contract based on a physical coffee at a price determined in an open auction – the futures market	
Grading	The process of separating green coffee by size, shape, density, colour and cup characteristics to defined standards prior to sale or export	
Mechanical Drier	Static or moving mechanical driers that force heated air through coffee to remove moisture until it reaches 12% total moisture	
Mucilage		
Natural Process	The whole cherries are dried on patios or racks under the sun or in mechanical driers	Illy
Non Visual Defect	Off tastes present in coffee only detectable by cup testing	Paraphrased from Illy
Parchment/Pergamino	The endocarp or inner skin surrounding the coffee. Coffee remains in this skin after the washed or pulped natural process and is kept form until milled	
Patio	Drying grounds for parchment coffee and cherries, usually made of concrete or asphalt and built on a slight incline to help drain rainwater	Paraphrased from Wintgens

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Word or Term	Proposed Description	Source
Pulped Natural Process	The cherries are pulped and the beans in parchment dried while surrounded by the mucilage	Illy
Pulper	A type of machine that removes the pulp, and sometimes part of the mucilage, from the coffee cherry	
Raised (African) Bed	Flat wire or plastic mesh trays assembled on table legs ... used to dry parchment coffee	Paraphrased from Wintgens
Screen Size	<p>Coffee is graded by size using rotating or shaking screens.</p> <p>Screen sizes are expressed as numbers (e.g. Screen 16) or as letters (AA).</p> <p>Screen sizes are either measured in 64ths of one inch e.g. screen 18 (18/64 inch) or by mm against a comparable ISO scale (7.10mm).</p> <p>Slotted screens with oblong slits (usually 4.5mm or 5mm) are used to remove peaberries</p>	Paraphrased from ITC
Selective Picking	The hand picking of ripe cherries only	Wintgens
Smallholder	<p>A small producer of coffee where:</p> <ul style="list-style-type: none"> • Farm work is mostly done by members and their families • They do not hire workers all year round 	Fairtrade Labelling Organisation (2009)
Species	A group of interbreeding individuals having some common characteristics not normally able to interbreed with other such groups	Wintgens
Strip Picking	Also known as 'milking' it consists of removing all the cherries present on a branch irrespective of their degree of ripeness	Wintgens
Total Moisture	The combined total of free and bound moisture in coffee expressed as a percentage	
Variety	A sub division of species	
Visual Defect	Anything that diverges from a normal bean inside the lot and that can be produced in the field or during the harvest, processing, transport or storage	Illy
Washed Process	The removal of the pulp by a pulper followed by the removal of the mucilage from the parchment which can be accomplished either mechanically, by the use of chemical products, or by fermentation	Illy
Yield	<p>The weight or volume of the harvest that has an economic value</p> <p>Average yield ranges by species (kg beans/ha) are: Arabica: 1500 - 3000 Robusta: 2300 - 4000</p>	<p>Wintgens</p> <p>ICO</p>