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Operational Risk Management in Financial Institutions

Certification: ORM Foundation | Operational Risk Manager | Operational Risk Lead Manager

ABOUT THIS DOCUMENT

ORM CERTIFICATION

The purpose of the ORM Certification is to provide the required knowledge that Operational Risk Managers need to reach one of three levels – Foundation, Manager, Lead Manager - and exercise their function effectively.

The content of this programme covers various published sources, market standards, general market practice, as well as findings from recent research.

The intention is to collate as much relevant knowledge for professional development as possible in one programme. This will provide a comprehensive view of ORM standards and theory, and the best market practices for professionals in the field.

BODY OF KNOWLEDGE

This document covers the core information that underpins the ORM Certification. Its purpose is to define the theoretical and professional knowledge that candidates must demonstrate to receive the ORM Certification.

The content is organized in such a way that candidates can select the coverage and examination required to obtain the certification at ORM Foundation, Operational Risk Manager and Operational Risk Lead Manager levels.

STRUCTURE OF THE BODY OF KNOWLEDGE

The Body of Knowledge curriculum is comprised of ten blocks:

BLOCK 01: Regulatory Context and Risk Governance

BLOCK 02: Framework and Policies

BLOCK 03: Risk Appetite

BLOCK 04: Incident Data Collection

BLOCK 05: Risk and Control Self-Assessment

BLOCK 06: Risk Culture

BLOCK 07: Key Risk Indicators

BLOCK 08: Operational Risk Disclosures and Reputation

BLOCK 09: Scenario Analysis

BLOCK 10: Capital Modeling

Each block is segmented into components and topics, progressing from general definitions and concepts to more specific subjects. Each block describes the knowledge delivered alongside the skills and learning outcomes tested for each certification, for example:

BLOCK 02: Framework and Policies

COMPONENT 1: ORM framework

TOPIC: Elements and structure of an ORM framework

LEARNING OUTCOMES:

- Understand the definitions and main elements of an ORM Framework
- Competence to distinguish the variations between an ORM and an enterprise risk management framework

A cross in the table indicates a knowledge test for this level of certification.



BLOCK 01: REGULATORY CONTEXT AND RISK GOVERNANCE DESCRIPTION

AIM

This block sets out the knowledge required with regards to the regulatory requirements for ORM. It explains the role of governance in risk management, the three lines model and the recommended risk governance structure. It also highlights the role and responsibilities of risk committees at various levels.

LEARNING OBJECTIVES

This first block provides the candidate with a deep understanding of ORM from a regulatory perspective, as well as the fundamentals of governance requirements for the successful implementation of an ORM framework.

- 1. Regulatory context
- 2. The role of governance
- 3. Three Lines Model
- 4. The role of risk committees



BLOCK 01: REGULATORY CONTEXT AND RISK GOVERNANCE

	COMPONENT 1: REGULATORY CONTEXT			
Topics	Learning Outcomes	ORM Foundation	ORM Manager	ORM Lead Manage
Three regulatory pillars	The rationale for banking and insurance regulationsThe three regulatory pillars since Basel II	х	х	х
Pillar 1	• Competence to understand the role of minimum regulatory requirements • Fundamentals of the new Standardized Approach		Х	Х
Pillar 2	Understand the role of Supervisory Review Process		Х	Х
Pillar 3	Understand the role of Market Discipline		Х	Х
Regulations in the world	Understand some of the differences between national supervisors		Х	Х
	COMPONENT 2: THE ROLE OF GOVERNANCE			
Topics	Learning Outcomes	ORM Foundation	ORM Manager	ORM Lead Manage
Scope and role of governance	 Understand the definitions of governance and risk governance Understand the scope of application of risk governance 	х	х	х
The Board of Directors	Understand the Board of Directors' risk management roles and responsibilities	Х	Х	Х
Senior Management	Understand Senior Management's risk management roles and responsibilities	Х	Х	Х
	COMPONENT 3: THREE LINES MODEL			
Topics	Learning Outcomes	ORM Foundation	ORM Manager	ORM Lead Manage
Introduction	 Understand the need for clear roles and responsibilities Competence to use the three lines model	Х	Х	х
First line	 Understand the definition of the first line Understand the ORM roles and responsibilities of the first line Competence to define and understand the concept of risk ownership 	х	х	Х
Second line	 Understand the definition of the second line Understand the ORM and oversight roles and responsibilities of the second line Understand the risk function's involvement in line, project and change management 	Х	х	Х
Third line	 Analyze and understand the Internal Audit role Competence to understand the criteria for an audit review and validation of an operational risk function 		Х	х
Three lines interactions	Competence to understand and organize a constructive relationship between the three lines Competence to understand the various ways to implement the three lines model		Х	х
	COMPONENT 4: THE ROLE OF RISK COMMITTEES			
Topics	Learning Outcomes	ORM Foundation	ORM Manager	ORM Lead Manag
Risk committees	 Understand the various risk committees at board, executive and line management level Competence to define proper terms of reference for the risk committees Competence to design an appropriate escalation process Competence to understand the main steps to embed ORM 	el	Х	Х



BLOCK 02: FRAMEWORK AND POLICIES

DESCRIPTION

AIM

This block sets out the knowledge required by the candidate to understand the ORM framework and the role of policies and procedures, as well as the minimum standards, as part of the implementation of an effective ORM framework.

LEARNING OBJECTIVES

This second block provides the candidate with the concepts and tools to build an effective ORM framework and develop the required standard templates, minimum content and approval process for policies and procedures.

- 1. ORM framework
- 2. The role of policies and procedures
- 3. Operational risk policy and minimum standards



BLOCK 02: FRAMEWORK AND POLICIES

	COMPONENT 1: ORM FRAMEWORK			
Topics	Learning Outcomes	ORM Foundation	ORM Manager	ORM Lead Manager
Elements and structure of an ORM framework	Understand the definitions and main elements of an ORM framework Competence to distinguish the variations between an ORM and an enterprise risk management framework	х	x	х
Framework proportionality	Competence to understand different types, complexity and comprehensiveness of ORM frameworks Competence to define a framework that is proportionate to the complexity and size of the organization Competence to understand the minimum criteria under which an ORM framework meets regulatory expectations		Х	Х
	COMPONENT 2: THE ROLE OF POLICIES AND PROCEDURES			
Topics	Learning Outcomes	ORM Foundation	ORM Manager	ORM Lead Manager
Definition and importance of policies and procedures	 Understand the role of documentation to demonstrate compliance with regulatory requirements and use test Competence to organize a documentation hierarchy between policies, procedures and guidelines, and to understand the roles of the different documents Understand the main components and structure of policies and procedures 	х	Х	х
Managing and embedding policies and procedures	 Understand the requirements to maintain policies and procedures Competence to evaluate and regularly update the content of policies and documentation Competence to understand the steps to take to embed and evaluate policies in an organization 		Х	х
	COMPONENT 3: OPERATIONAL RISK POLICY AND MINIMUM STAN	DARDS		
Topics	Learning Outcomes	ORM Foundation	ORM Manager	ORM Lead Manager
The nature and role of operational risk policies	 Competence to recognize the role of operational risk policies Understand the various policies related to operational risk Competence to understand how the operational risk policies support the implementation of an ORM framework 	х	х	х
Minimum requirements	 Understand the rationale for minimum standards Understand how to set up minimum standards Understand when minimum standards are needed as part of a framework implementation 		Х	Х



BLOCK 03: RISK APPETITE

DESCRIPTION

AIM

This block sets out the knowledge that the candidate needs to define a risk appetite. It considers the key risks an organization might face, establishing the boundaries for acceptable and unacceptable incidents, and creating the necessary controls that these limits require.

LEARNING OBJECTIVES

This block provides the candidate with the necessary knowledge to develop an actionable risk appetite structure and organize its implementation and communication within an organization.

- 1. Industry guidance on risk appetite
- 2. Structure of actionable risk appetite
- 3. Communicating risk appetite



BLOCK 03: RISK APPETITE

	COMPONENT 1: INDUSTRY GUIDANCE ON RISK APPETITE			
Topics	Learning Outcomes	ORM Foundation	ORM Manager	ORM Lead Manager
Definitions of risk appetite and tolerance	 Understand the definitions of risk appetite, tolerance and supporting metrics according to the Basel recommendations Understand the variations of risk appetite and tolerance definitions in different industry standards (ISO, COSO) 	X	X	х
The role of risk appetite	 Understand the role of appetite in corporate governance and the responsibility of the board of directors Understand the role of risk appetite as the driver of consistency in an ORM framework 	X	Х	х
	COMPONENT 2: STRUCTURE OF ACTIONABLE RISK APPETITE			
Topics	Learning Outcomes	ORM Foundation	ORM Manager	ORM Lead Manager
Risk appetite structure	 Understand the building blocks of actionable risk appetite, from statement to monitoring KRIs Understand the role of risk appetite statements and metrics as the criteria for risk decisions in an organization 	х	Х	Х
Risk tolerance	Competence to associate risk tolerance metrics to risk appetite statements Competence to dissociate risk tolerance and statements of unacceptable behaviors	Х	Х	Х
Key controls	Competence to determine key controls associated with risk appetite statements	Х	Х	Х
Appetite KRIs	Competence to determine the risk limits / KRIs / supporting associated risk appetite statements	X	Х	х
	COMPONENT 3: COMMUNICATING RISK APPETITE			
Topics	Learning Outcomes	ORM Foundation	ORM Manager	ORM Lead Manager
Expressions of risk appetite	 Understand how risk appetite informs the impact and likelihood scales of the risk matrix and its accepted risk levels Understand how risk appetite refines the control environment and monitoring metrics Understand how risk appetite levels define the selection of pre- and post-incidents' action plans 	x	х	х
Confronting appetite statements with reality	Competence to highlight the discrepancies in implementation and practice with stated appetite Competence to define bottom-up risk appetite statements by observing how the business operates	х	Х	х



BLOCK 04: INCIDENT DATA COLLECTION

DESCRIPTION

AIM

This block sets out the knowledge the candidate needs for the standards and processes to put in place in order to collect, analyze and report on operational risk incidents effectively.

LEARNING OBJECTIVES

This fourth block equips the candidate with the skills to organize incident data collection in line with regulatory standards, to perform root cause analysis of incidents when needed, and to report on loss events effectively.

- 1. Incident data collection standards
- 2. Categorizing risk events
- 3. Roles and responsibilities in incident data collection
- 4. Analyzing and reporting on incident data
- 5. Learning from external loss data



BLOCK 04: INCIDENT DATA COLLECTION

	COMPONENT 1: INCIDENT DATA COLLECTION STANDARDS			
Topics	Learning Outcomes	ORM Foundation	ORM Manager	ORM Lead Manage
Definition of operational risk incidents	 Losses, gains and near misses Incident collection thresholds 	х	Х	х
Data collection standards	 Understand and implement minimum reporting criteria as mandated by regulation Competence to understand the challenges in data quality and history 	Х	Х	Х
Rationale for incident data collection	Understand the purpose of implementing a risk event data collection program	Х	Х	Х
	COMPONENT 2: CATEGORIZING RISK EVENTS			
Topics	Learning Outcomes	ORM Foundation	ORM Manager	ORM Lead Manag
Regulatory categories and mapping	 Understand the structure of regulatory risk events taxonomies Understand the need to map internal categories to Basel categories Competence to categorize operational risk events effectively 	Х	Х	Х
Risk event taxonomies	 Understand the difference between risk categories and risk taxonomies Competence to understand benefits of risk taxonomies on causes, risks and impacts Competence to design a risk taxonomy that fits the risk profile of the firm 		Х	Х
	COMPONENT 3: ROLES AND RESPONSIBILITIES IN INCIDENT DATA COL	LLECTION		
Topics	Learning Outcomes	ORM Foundation	ORM Manager	ORM Lead Manage
Three lines responsibilities in data collection	 Understand the roles and responsibilities in relation to incident data collection Competence to encourage and facilitate a comprehensive incident data collection 	Х	х	Х
Governance of action plans	 Competence to understand when to open, remediate and close an incident Understand the roles and responsibilities or the three lines in the decision to open, act on and close an incident 	Х	Х	х
Responsibilities senior management	• Understand the roles and responsibilities of the senior management in relation to the monitoring of incident collection and action plans	Х	Х	Х
	COMPONENT 4: ANALYZING AND REPORTING ON INCIDENT DA	TA		
Topics	Learning Outcomes	ORM Foundation	ORM Manager	ORM Lead Manag
Reporting on incident data	 Understand the typical summary reporting on incidents data to senior management and risk committees Competence to design engaging reporting to the business on incident data Competence to understand the benefits of sharing the experience of a past incident and designing methods to convey that experience 		х	х
Analyzing operational risk incidents	 Understand the different types of root cause analysis and their benefits Competence to perform a root cause analysis Competence to decide when to use root cause analysis of incidents or near misses Competence to draw the lessons learnt from one or several incidents 	Х	Х	х
Adjusting reporting to data	Competence to understand how to adjust reporting design to the data reported		Х	Х
	COMPONENT 5: LEARNING FROM EXTERNAL LOSS DATA			
Topics	Learning Outcomes	ORM Foundation	ORM Manager	ORM Lead Manag
External loss data sources	 Understand the various sources of operational risk loss data in the public domain Competence to select relevant external loss experience to the firm 		х	Х
Learning from external loss data	Competence to include lessons learnt from external data in an ORM framework		Х	Х



BLOCK 05: RISK AND CONTROL SELF-ASSESSMENT (RCSA) DESCRIPTION

AIM

This block sets out the knowledge required by the candidate to design and implement a risk and control self-assessment process, to collate the information in a risk register and to report on it.

LEARNING OBJECTIVES

This block equips the candidate with the skills needed to design an effective RCSA programme, in line with the size and complexity of the organization in scope. At the end of this block, the candidate should be able to define the relevant scales of a heatmap, organize, run and report on an RCSA process and the action plans.

- 1. RCSA: definition, scope and process
- 2. Heatmaps and risk scales
- 3. Controls and risk mitigation types
- 4. Running an RCSA process and reporting on it



BLOCK 05: RISK AND CONTROL SELF-ASSESSMENT (RCSA)

	COMPONENT 1: RCSA: DEFINITION, SCOPE AND PROCESS			
Topics	Learning Outcomes	ORM Foundation	ORM Manager	ORM Lead Manage
Definition and role of an RCSA	 Competence to define an RCSA in line with the risk framework and appetite Competence to highlight the benefits and role of an RCSA in an ORM framework Understand the regulatory requirements regarding RCSA Understand the use of RCSA findings in the three lines 		Х	х
RCSA scope and process	Understand the different methods to run an RCSA programme: workshop, questionnaires, interviews Competence to design the most appropriate RCSA program for an organization: per process, per business lines or mixed Understand the differences between top-down and bottom-up RCSA and the purpose each exercise serves Understand the limitations and challenges of RCSA methods		Х	х
	COMPONENT 2: HEATMAPS AND RISK SCALES			
Topics	Learning Outcomes	ORM Foundation	ORM Manager	ORM Lead Manage
Heatmaps	 Understand the nature and roles of heatmaps Competence to understand the role and alignment of heatmaps in an ORM framework, in particular with risk appetite 	Х	Х	x
Risk scales	 Competence to define impacts scales of a heatmap Competence to define likelihood scales of a heatmap Competence to discuss the benefits and drawbacks of defining different scales 	X	X	X
Biases and challenges	 Understand the biases and challenges in risk assessment Understand the need to accompany the first line in the complexity of an RCSA Competence to address behavioral biases and challenges of an RCSA process 		X	Х
	COMPONENT 3: CONTROLS AND RISK MITIGATION TYPES			
Topics	Learning Outcomes	ORM Foundation	ORM Manager	ORM Lead Manage
Control types	 Understand the differences between preventive, detective, corrective and directive controls Competence to list examples of controls Competence to define a control typology that will fit organizational needs 	х	х	х
Control assessment	 Understand the concepts of design effectiveness and operating effectiveness Competence to design an appropriate control testing programme Understand the definition of a key control Competence to assess controls while accounting their interdependencies 		Х	х
Other risk mitigation	Understand the other types of risk responses	Х	Х	Х
	COMPONENT 4: RUNNING AN RCSA PROCESS AND REPORTING C	N IT		
Topics	Learning Outcomes	ORM Foundation	ORM Manager	ORM Lead Manage
Design and roll-out of an RCSA process	 Understand the main elements of RCSAs organization: units, participants, inputs, governance Competence to define RCSA units suitable for an organization Understand the roles of workshops vs. desk work in an RCSA process Competence to organize an RCSA process step by step 		х	х
Reporting of RCSA results and action plans	 Understand the methods to collate and present RCSA results for an organization for a bottom-up or a top-down exercise Understand the importance of action plans as a main outcome of RCSAs Competence to design relevant types of action plans for categories of issues Understand recommended rules to maintain and update RCSA results and follow-up or action plans 	f	х	х



BLOCK 06: RISK CULTURE

DESCRIPTION

AIM

This block sets out the knowledge required by the candidate about the scope of risk culture and conduct in financial organizations and the possible metrics to monitor both. It covers the contributing elements to a good risk culture in the organization and explains how it supports the Use Test of ORM.

LEARNING OBJECTIVES

This sixth block enables candidates to define a target risk culture for their organization and set objectives for conduct and culture. Candidates review the competence to design and implement a structured approach to influence risk culture and use common metrics to monitor good conduct in financial organizations.

- 1. Defining and monitoring conduct in financial organizations
- 2. Defining risk culture
- 3. Risk culture drivers and change management
- 4. The Use Test



BLOCK 06: RISK CULTURE

	COMPONENT 1: DEFINING AND MONITORING CONDUCT IN FINANCIAL OR	GANIZATIO	NS	
Topics	Learning Outcomes	ORM Foundation	ORM Manager	ORM Lead Manage
Regulatory perspective	 Understand and define the three conduct regulatory objectives: consumer protection, market integrity, and effective competition Understand the need for risk-based incentives to support good conduct and good risk culture 		х	х
Conduct and culture monitoring	Understand the metrics to capture conduct risk Competence to design effective conduct and risk culture reporting in financial organizations		Х	Х
	COMPONENT 2: DEFINING RISK CULTURE			
Topics	Learning Outcomes	ORM Foundation	ORM Manager	ORM Lead Manage
Risk culture definitions	 Understand the importance of risk culture for effective risk management Competence to define a target risk culture and articulate the key behaviors that will express this underlying culture Understand and analyze the organizational components of the risk culture 		х	Х
Risk culture criteria	 Competence to describe roles and responsibilities of the different parties to ensure a strong risk culture within the organization Understand and apply risk culture assessment techniques 		Х	Х
	COMPONENT 3: RISK CULTURE DRIVERS AND CHANGE MANAGEN	MENT		
Topics	Learning Outcomes	ORM Foundation	ORM Manager	ORM Lead Manage
Risk culture drivers	 Competence to understand key drivers of behaviors Competence to design incentives structures and work environment to leverage such drivers Identify and involve the influencers for better results 		х	х
Change	Competence to use the business' language to build a constructive partnership Identify and adapt to the existing practices to successfully embed ORM			
management process	Understand the behavioral competences to get ORM buy-in in an organization Understand how to communicate and encourage the selected key behaviors		X	Х
	• Order stand now to communicate and encodinge the selected key behaviors			
Measuring success	Competence to select the relevant metrics to monitor and assess progress of the target behaviors		Х	Х
Measuring success			Х	Х
Measuring success Topics	target behaviors	ORM Foundation	ORM	X ORM Lead Manag
	COMPONENT 4: THE USE TEST	Foundation	ORM	ORM



BLOCK 07: KEY RISK INDICATORS (KRIS)

DESCRIPTION

AIM

This block sets out the knowledge that the candidate needs to define and design Key Risk Indicators (KRIs) to proactively monitor the risk level in an organization.

LEARNING OBJECTIVES

This block provides the candidate with the necessary knowledge to design an effective indicator program, specify relevant indicators for various risks, use indicators as an effective management tool and define threshold levels for KRIs that translate corporate risk appetite.

- 1. Definitions and roles of KRIs
- 2. KRI selection framework
- 3. Reporting on KRIs



BLOCK 07: KEY RISK INDICATORS (KRIS)

LEARNING OUTCOMES

	COMPONENT 1: DEFINITIONS AND ROLES OF KRIS			
Topics	Learning Outcomes	ORM Foundation	ORM Manager	ORM Lead Manager
Definitions and scope of KRIs	 Understand the role of key metrics in the new Basel guidance Understand the role of early warning systems 		х	Х
Roles of the KRIs	• Understand the role of preventive KRIs in an ORM framework		X	Х
KRIs features	Understand the desirable features of KRIs		Х	Х
Issue management	Understand the nuance between KRIs and 'issues' in an organization		Х	Х
	COMPONENT 2: KRI SELECTION FRAMEWORK			
Topics	Learning Outcomes	ORM Foundation	ORM Manager	ORM Lead Manager
Steps of a KRI framework	 Understand the different steps to identify and select preventive KRIs Understand the links between KRIs and risk appetite 		х	Х
KRIs and risk drivers	 Understand the links between preventive KRIs and risk drivers Competence to define and articulate the causes and root causes of the key risks Competence to select relevant metrics of risk drivers for key operational risk types 		х	х
Using existing indicators	Competence to turn existing indicators into KRIs Competence to define the missing metrics of key risks drivers		х	х
Categories of KRIs	Understand the various categories of KRIs: exposure, stress, failure and causal		Х	Х
	COMPONENT 3: REPORTING ON KRIS			
Topics	Learning Outcomes	ORM Foundation	ORM Manager	ORM Lead Manager
KRI metrics design	 Understand the various elements of metrics design: data source, frequency, thresholds and governance Competence to select appropriate rules for the thresholds of KRIs Competence to design governance rules for KRIs collection, reporting and remediation 		Х	Х
KRI reporting	Understand the various types of KRIs reporting and their audience Understand the levels of KRIs escalation Competence to select the relevant methods to aggregate or escalate KRIs data		Х	х



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KRI maintenance

 \bullet Competence to validate the preventative nature of KRIs

• Understand when and how to update a list of KRIs

BLOCK 08: OPERATIONAL RISK DISCLOSURES AND REPUTATION DESCRIPTION

AIM

This block sets out the knowledge the candidate requires to participate in and design external communications on operational risk, in line with regulatory requirements as well as the fundamentals of reputation risk management.

LEARNING OBJECTIVES

It enables candidate to understand the mandatory risk disclosure as well as the recommended qualities of effective risk communication. The candidate will also learn the key principle of risk communication to build reputation and crisis communication to protect it when needed.

- 1. ORM disclosures requirements
- 2. Disclosures quality attributes
- 3. Risk communication and reputation



BLOCK 08: OPERATIONAL RISK DISCLOSURES AND REPUTATION

	COMPONENT 1: ORM DISCLOSURES AND REQUIREMENTS			
Topics	Learning Outcomes	ORM Foundation	ORM Manager	ORM Lead Manager
Regulatory requirements	 Understand the current ORM disclosures requirements Understand the role of Pillar 3 in the regulation 			Х
Evolution	• Understand the evolution of ORM disclosures requirements through the regulation			Х
	COMPONENT 2: DISCLOSURES QUALITY ATTRIBUTES			
Topics	Learning Outcomes	ORM Foundation	ORM Manager	ORM Lead Manager
Disclosure quality	 Understand different dimensions to qualify ORM disclosure: design, governance, measurement, reporting, response Understand the role and benefits of each dimension in ORM disclosures 			Х
Defining attributes	Competence to define quality criteria for each dimension of ORM disclosures			Х
	COMPONENT 3: RISK COMMUNICATION AND REPUTATION			
Topics	Learning Outcomes	ORM Foundation	ORM Manager	ORM Lead Manager
Reputation and risk events	 Understand the reputation risk associated with operational risk events Understand the reputation risk associated with ineffective risk disclosures 			Х
Crisis communication	 Understand the three 'Rs' in crisis communication: regret, reason, repair Competence to design a communication plan in case of a risk event 			Х
Reputation management framework	Competence to define a stakeholder map for reputation management Understand the elements of a reputation management framework			Х



BLOCK 09: SCENARIO ANALYSIS

DESCRIPTION

AIM

This block sets out the knowledge the candidate needs to support the design and the implementation of a structured scenario analysis.

LEARNING OBJECTIVES

It enables the candidate to understand how to assess rare but plausible extreme events in an organization using risk drivers and control assessment and the fundamental concept of loss distribution.

- 1. Role and regulatory context of scenario analysis
- 2. Successive steps of scenario analysis
- 3. Scenario assessment techniques
- 4. Probabilities and distributions
- 5. Scenario analysis validation



BLOCK 09: SCENARIO ANALYSIS

Topics	Learning Outcomes	ORM Foundation	ORM Manager	ORM Lead Manage
Role of scenario analysis	 Understand the definition of scenarios for ORM Understand the benefits of scenario analysis from a management perspective Understand the benefits of scenario analysis from a capital perspective 			х
Regulatory requirements for scenario analysis	Understand the regulatory requirements for scenario analysis and assessment Understand the differences and similarities between scenarios and stress testing for ORM			х
	COMPONENT 2: SUCCESSIVE STEPS OF SCENARIO ANALYSIS			
Topics	Learning Outcomes	ORM Foundation	ORM Manager	ORM Lead Manager
Steps of scenario analysis	 Understand the step-by-step approach for scenario analysis: governance, scope, identification, selection, assessment Competence to design a scenario analysis program relevant for the organization Competence to understand the role of scenario analysis in an ORM framework 			х
	COMPONENT 3: SCENARIO ASSESSMENT TECHNIQUES			
Topics	Learning Outcomes	ORM Foundation	ORM Manager	ORM Lead Manage
Assessment challenges	 Understand the concept and challenge of behavioral biases in scenario analysis Understand the data requirements and data challenges in scenario analysis 			х
Qualitative and quantitative assessment	 Competence to apply expert elicitation and Delphi techniques in scenario analysis Understand the concept and method of factor analysis and fault tree for scenario analysis Understand the pros and cons of the different scenario assessment techniques Competence to apply the most appropriate method for an organization, given data and skills available 			
Scenario dependencies	Competence to understand and highlight the dependencies between scenarios Competence to design an indirect dependency structure between scenarios			х
	COMPONENT 4: PROBABILITIES AND DISTRIBUTIONS			
Topics	Learning Outcomes	ORM Foundation	ORM Manager	ORM Lead Manage
Essential quantitative concepts for scenario analysis	 Understand the concept and role of basic probability calculus for dependent and independent events (Bayesian probability) Understand the concept and role of a probability distribution Understand the concept and role of uncertainties in probabilistic estimates Competence to apply simple Monte Carlo simulations 			Х
	COMPONENT 5: SCENARIO ANALYSIS VALIDATION			
Topics	Learning Outcomes	ORM Foundation	ORM Manager	ORM Lead Manage
Validation process	Competence to organize the validation process of a scenario analysis program			х
Documentation	 Competence to define the information that needs to be reported and its format for internal and external validation purposes Understand the links between results of scenarios and risk appetite and tolerance Competence to disclose results of plausible but hypothetical scenarios 			Х



BLOCK 10: CAPITAL MODELING

DESCRIPTION

AIM

This block sets out the knowledge the candidate needs to understand and review the essential concepts of internal capital modeling for ORM.

LEARNING OBJECTIVES

It enables candidate to understand how operational capital is modeled in financial institutions, with a focus on the Loss Distribution Approach, to complement scenario analysis. It explains how to combine past losses with prospective risk to deliver a best estimate of capital needs for ORM.

- 1. Regulatory requirements for operational risk capital
- 2. Internal and external loss data and features
- 3. Principles of a Loss Distribution Approach (LDA)
- 4. Tail events and Extreme Value Theory (EVT)
- 5. Validation process, limitations and benefits of capital modeling



BLOCK 10: CAPITAL MODELING

	COMPONENT 1: REGULATORY REQUIREMENTS FOR OPERATIONAL RIS	K CAPITAL		
Topics	Learning Outcomes	ORM Foundation	ORM Manager	ORM Lead Manag
The role of capital modeling	 Understand the importance of accurate capital modeling in firms Understand the roles and differences between Pillar 1 and Pillar 2 capital modeling Competence to evaluate the cost of capital for financial institutions and its implication on capital calculation 			х
asel II and Basel III regulation for operational risk	 Understand the elements of AMA for operational risk Understand the reason for the Standardized Approach reform and its implication on capital modeling 			х
	COMPONENT 2: INTERNAL AND EXTERNAL LOSS DATA AND FEAT	URES		
Topics	Learning Outcomes	ORM Foundation	ORM Manager	ORM Lead Manag
Loss data features	 Understand the particularities of operational loss data Understand the benefits and limitations of using external loss data in operational risk modeling Understand the characteristics of main data consortiums 			х
Aixing internal and external loss data	• Competence to use decision criteria when mixing internal and external loss data for cameasurement	pital		х
	COMPONENT 3: PRINCIPLES OF A LOSS DISTRIBUTION APPROACH	(LDA)		
Topics	Learning Outcomes	ORM Foundation	ORM Manager	ORM Lead Manag
LDA applications	 Understand the rationale behind the use of LDA in operational risk modeling Understand the 3 main steps of an LDA approach Competence to know when to select an LDA approach in operational risk modeling 			х
Frequency and severity distributions	 Understand the main features of the most commonly used frequency distributions Understand the main features of the most commonly used severity distributions Competence to apply simple convolutions 			х
	COMPONENT 4: TAIL EVENTS AND EXTREME VALUE THEORY (E	VT)		
Topics	Learning Outcomes	ORM Foundation	ORM Manager	ORM Lead Manag
Tail of distribution	 Understand the difference between the body and the tail of distribution Understand the notions of value at risk (VaR) and its applications to ORM Competence to identify the limitations of a VaR approach in case of data scarcity 			Х
EVT in operational risk	Understand the principles and assumptions in EVT Understand conditions under which EVT can be used in operational risk modeling			Х
Tails events and scenarios	 Competence to recognize and qualify tail events in operational risk Competence to combine scenarios and extreme loss events to model the tail of a distr Understand the combination of AMA's four components to design a robust capital ass 			x
C	COMPONENT 5: VALIDATION PROCESS, LIMITATIONS AND BENEFITS OF CAP	ITAL MODE	LING	
Topics	Learning Outcomes	ORM Foundation	ORM Manager	ORM Lead Manag
ssentials of model validation	 Understand the elements of a good model Understand the need for model validation Competences to list most assumptions and limitations related to the model choices 			х
Model validation process	 Understand the steps of a validation process Competence to self-evaluate and justify the main choices to be made in capital model 	ing		Х
Capital modeling limitations and benefits	Competence to evaluate the role, benefits and limitations of capital modeling Competence to know how to use capital modeling effectively	,		Х



THE KNOWLEDGE TEAM

The Body of Knowledge was developed by a team of people chosen for their expertise and contributions in the ORM field. Chapelle would like to thank this team for their commitment and ongoing contribution to the development and review of this document.

The team was coordinated by:

DR. ARIANE CHAPELLE,

Managing Partner, Chapelle Consulting and Honorary Reader, University College London (UK).

DAVID LANNOY,

Director, Chapelle Consulting (Belgium) and Associate Lecturer, IESEG (France).

Knowledge team members were:

MARIANNE COLLIN,

Chief Risk Officer, Belfius Banque, Belgium.

DR. BERTRAND HASSANI,

Professor at Paris 1 Sorbonne and former Head of Risk Methodologies, Banco Santander, France.

FRANCE LEBLANC,

Chief Risk Officer, SSQ Assurances, Québec.

AMEDEE PROUVOST,

Director of Operational Risk, World Bank, USA.

CYRILLE REYNARD,

President, Operational Risk Observatory and Head of Risk, Managing Director, Banque Cramer & Cie, Switzerland.

DR. EVAN SEKERIS,

Head of Model Validation, PNC and former regulator, Federal Reserve Bank of Richmond, USA.

ANDREW SHEEN,

Former representative of the UK, Basel Committee of operational risk (WIGOR) and former regulator, UK FSA and PRA, UK.

