Module Outline   Revised

Professional Qualification:	Certified Operational Risk Management Professional (CORP) (QF Level 5)
Programme Title:	Professional Certificate for ECF on Operational Risk Management (ORM)
Module Title:	Advanced Operational Risk Management (M4)**
Credit:	30 (21 contact hours, 3 examination hours and 276 self-study hours)
Teaching/Training Activities:	Training Class
Pre-requisite:	Advanced Certificate for ECF on Operational Risk Management (ORM)
Remarks:	**Pitched at QF Level 5

Professional Qualification / Module Objective

This Professional Qualification / module has been developed with the aim to nurture a sustainable talent pool of operational risk management practitioners in the banking industry. Candidates will acquire technical skills, professional knowledge and conduct for entry-level and junior level of job roles in the operational risk management function that take up a majority of responsibility in the operational risk management and business function risk and control.

Professional Qualification Intended Outcomes(PQIOs) / Module Intended Outcomes (MIOs) & Units of Competencies (UoCs)

Upon completion of the Professional Qualification, candidate should be able to:

PQIO / MIOs	Intended Outcome/Competence	Unit of Competencies (UoCs)
PQIO / MIO 1:	Develop and establish operational risk management frameworks and associated policies and procedures	107403L6
PQIO / MIO 2:	Evaluate the operational risks encountered by different business units of the AI and establish effective mitigating controls	107404L6 109308L5
PQIO / MIO 3:	Manage operational risks by using risk management control tools, e.g. risk control self-assessment (RCSA) and key risk indicators (KRIs)	107404L6 109300L5
PQIO / MIO 4:	Develop risk control measures by using scenario analysis and stress testing to identify potential operational risk events and assess their potential impact	107405L5 107414L5 109307L5

PQIO / MIO 5:	Review the risk profile of the AI/business function and apply operational risk modelling to quantify and predict operational risks	107406L5
PQIO / MIO 6:	Compile the dashboards and metrics to measure and analyse operational risks within different business units	107405L5
PQIO / MIO 7:	Develop business continuity plan and recovery strategy	107412L5/ 109313L5 107414L5
PQIO / MIO 8:	Build and promote a risk focused culture within the AI/within the business function	107409L4
PQIO / MIO 9:	Propose strategic operational risk advice and remediation actions to senior management on findings of operational risk events	107405L5 107406L5 107412L5/ 109313L5 109308L5
PQIO / MIO 10:	Design and deliver operational risk training to business units	107602L5/ 109592L5

Assessment Activity

Type of Assessment Activity	PQIO / MIO	Weighting (%)
Examination	MIO 1 - 10	100%

Examination Format and Duration

Time allowed: 3 hours

The examination consists of: 40-50 Multiple Choice Questions and 2-3 Essay Type Questions

Examination passing rate: 60%

CORP Certification Requirement

Completion of Module 4 of the ECF on ORM (Professional Level) training and successfully passed the following examination on top of the Core Level qualification and having at least 5 years of relevant work experience in operational risk management, business function risk and control, and/ or internal audit (related to operational risk management and controls within an AI) and currently as a Relevant Practitioner.

Syllabus

Chapter 1: Operational Risk Assessment Methodology And New Products Risk Assessment	
1	- Introduction
2	- Risk Assessment Criteria • Optimal Risk Taking for Banks

		• Stages for Risk Assessment Process
		• Critical Risk Factors in Various Business Area
		• Operational Risk Assessment Methods
		• Operational Risk Assessment Requirements
		• Operational Risk Assessment Tools
		• Operational Risk Assessment Factors
		• Operational Risk Management Cycle
		• Timeliness of Operational Risk Assessment
		• Operational Risk Assessment Process Map
		• Developing Assessment Criteria
		• Operational Risk Rating Scale (Sample)
3	-	Risk Taxonomy
		• Operational Risk Taxonomy
		• Development of Operational Risk Taxonomy
		• Objective and Benefits of Operational Risk Taxonomy
		• Value of Operational Risk Taxonomy
		• Risk Taxonomy Hierarchy
		• Taxonomy by Business Lines,
		• Taxonomy by Operational Risk Event Types
		• Taxonomy by Operational Risk Causes
		• Taxonomy by Operational Risk Loss Effects
		• Taxonomy by Control Categories
		• Operational Risk Taxonomy Mapping
		• Basel Taxonomy Activity Examples (Level 3) – Loss Event Type Classification
		• Best Practice: ORX Operational Risk Taxonomy
		• Connection of the ORX Reference Taxonomy to the Basel Event Types
		• ORX Reference Taxonomy
		• ORX Bow Tie Method
		• ORX Reference Taxonomy
		• Top-level Observations From The Data
4	-	New Process Change Risk Assessment
		• Manage Business Process Change Process
		• Types of Business Process Changes
		• Change Management R&R - First Line
		• Change Management R&R - Second Line
		• Business Process Change Scorecard
		• Points of Risk Consideration (Example)
		• Risk Assessment Thresholds for Business Process Change
		• Operational Risk Perspective on Change
		• Challenges on Risk Management for Changes

		• Cohorts in Responding to Change
		• Common Causes of Change Failure
		• Information Requirement on Change
		• Stage Involvement of Risk Function
		• KRI for Monitoring Project Risks
5	-	New Product Risk Assessment Cycle
		• New Product Definition
		• Industry Observation on New Product
		• Drivers for New Product
		• Features of New Product
		• Categorization of New Product
		• New Product Development Lifecycle
		• New Product Risk Assessment Requirement
		• Examples of Significant Changes to Risk Profile of Product (HKMA Illustration)
		• Principles Governing the New-Product-Approval Process
		• Issues on Managing New Product
		• Types of Risks in New Process
		• New Product Policy (Sample)
		• New Product Committee (NPC)
		• KRI for New Product
		• New Product Risk Rating (NPRR)
		• New Product Documentation
		• New Product Risk Roles and Responsibilities – First Line
		• New Product Risk Roles and Responsibilities – Second Line
		• Product Expiration
		• Consideration of Conflict of Interest
6	-	Offboarding and Periodic Review
		• Factors for Product Offboarding
		• Overview of Post Implementation Review
		• Scope of Post Implementation Review
		• Overview of Periodic Product Review
		• Scope of Periodic Product Review
7	-	Case Studies
		• Case Study: Mis-selling of Investment Products
		• Case Study: Deficient practices in ascertaining insurance protection for bill discounting business
		• Case Study: Underpayment of stamp duty for certain OTC transactions
8	-	Best Practice Guidance
		• New Product Checklist (Sample)

Chapter 2: Scenario Analysis And Stress Testing		
1	-	Introduction
2	-	Stress Testing
		• Definition of Scenario Analysis, Stress Testing and Reverse Stress Testing
		• Relationship between Scenario Analysis, Stress Testing and Reverse Stress Testing
		• Demarcating Scenario Analysis, Stress and Reverse Stress testing
		• Overview and Risk Factors of Operational Risk Stress Testing
		• Value of Operational Risk Stress Testing
		• Elements of Operational Risk Stress Testing
		• Types of Risks Covered in Stress Testing
		• Guiding Principles of Stress Testing
		• Purpose of Stress Testing and Scenario Analysis
		• Features of Stress Testing and Scenario Analysis
		• Benefits of Stress Testing and Scenario Analysis
		• Linkage to Capital Planning Process
3	-	Scenario Analysis
		• Overview of Scenario Analysis
		• Conducting Effective Scenario Analysis
		• Identifying and Agreeing the Focus of Analysis
		• Determining the Level of Analysis
		• Key Components of Scenario Analysis Framework
		• Scenario Design and Scenario Execution
		• Approach in Developing Scenario Analysis
		• Governance and Responsibilities
4	-	Selection of The Scenarios
		• Animal Kingdom of Risks
		• Black Swam Examples
		• Gray Rhino Examples
		• Questions on Understanding the Unknowns
		• Steps in Building Scenario Analysis
		• Relevance of Scenario Analysis
		• Forward-looking Focus
		• Data Collection
		• Scenario Risk Drivers
		• Scenario Distribution
		• High Severity Scenario Examples
		• Scenario Biases
		• Possible Relationships between Operational Losses and Macroeconomic

		Conditions for Basel Event Types
		• Identifying and Approving a Portfolio of Scenarios
		• Techniques for Identifying Scenarios
		• Sample of Common Scenarios (Corporate Bank)
		• Assessing COVID Impact with Scenario Analysis
5	-	Execution and Analysis
		• Running a Scenario Workshop
		• Causes of Scenarios
		• Assessing Impacts
		• Assessing Likelihood
		• Management Response
		• Scenario Template
		• Expert Assessment and Biases
		• Validation and Governance
		• Preparing for Operational Risk Workshop
		• Conducting a Workshop
		• The Participants
		• Assessing Probability and Impact
		• Workshop Analysis Techniques
		• Validation of Output
		• Governing the Process
		• Making Effective Use of the Outputs
		• Risk and Capital Modeling
		• Calculating Baseline Loss
		• Expected Levels of Loss
		• Unexpected Levels of Loss
		• Key Challenges in Scenario Analysis
6	-	Benchmarking with The Industry
		• Industry Benchmarking of Scenario Analysis
		• Industry Survey on Scenario Analysis
7	-	Regulatory Guideline
		• Global Regulatory Timeline
		• BCBS Principles for Sound Stress Testing Practices and Supervision
		• HKMA Requirement on Stress Testing and Operational Risk Scenario Analysis
8	-	Case Studies
		• Case Study: Phishing emails and fraudulent bank websites stealing customers' e-banking account information
9	-	Best Practice Guidance
		• Stress Testing Toolkit
		• Reverse Stress Testing Methodology

Chapter 3: Key Risk Indicators		
1	-	Introduction
2	-	Difference Between Key Risk Indicator, Key Control Indicator and Key Performance Indicator
		• Definitions of Operational Risk Indicators
		• Risk Indicators
		• Control Indicators
		• Performance Indicators
		• Dimensions and Types of Key Risk Indicators
		• KRI vs KCI vs KPI
		• Composite Indicators
		• Essentials of Key Indicators
		• Categories of Key Risk Indicators
		• Exposure Indicators
		• Failure Indicators
		• Stress Indicators
		• Causal Indicators
		• BCBS Principles
3	-	Design
		• Life Cycle of Key Risk Indicators
		• Roles of Key Risk Indicators
		• Translating Risk Appetite
		• Risk Monitoring
		• Governance and Assurance
		• Risk Assessment and Modelling
		• Relevance
		• Measurable
		• Leading vs Lagging Indicators
		• Types of Indicators
		• Bow Tie Diagram for Key Risk Indicators
		• Easy to Collect and Monitor
		• Comparable
		• Auditable
		• Selecting Indicators: Top Down or Bottom Up
		• Consideration for Top-down Approach
		• Consideration for Bottom-up Approach
		• Deciding Frequency
		• Consideration for Number of Key Risk Indicators
		• Thresholds and Limits

		• Selection Criteria
		• Basic Indicator Approach
		• BIA Example 1
		• BIA Example 2
3	-	Standardized Approach (SA)
		• The Standardized Approach
		• Advantages of Standardized Approach
		• TSA Example 1
		• TSA Example 2
4	-	Alternative Standardized Approach (ASA)
		• Alternative Standardized Approach
5	-	Advanced Measurement Approach (AMA)
		• Advanced Measurement Approach
		• Advanced Measurement Approach Distribution Curve
		• AMA Quantitative Stipulations
		• AMA Qualitative Stipulations
		• Internal Measurement Approach
		• Loss Distribution Approach
		• Advantages and Disadvantages of LDA
		• Standard LDA methods
		• Step 1: Modeling Frequency
		• Frequency in an LDA Model: Example
		• Qualities of the Poisson Distribution
		• Step 2: Modeling Severity
		• Selecting a Severity Distribution
		• The Severity Probability Distribution
		• Step 3: Monte Carlo Simulation
		• Correlation
		• Scenario Analysis Approach to Modeling Operational Risk Capital
		• Advantages and Disadvantages of an SA Approach
		• Hybrid Approach to Modeling Operational Risk Capital
		• Insurance
		• Disclosure
6	-	Revised Standardized Approach (RSA)
		• Revised Standardized Approach
		• Methodology of Revised Standardized Approach
		• Reduced Risk Management Incentive
		• Implications For Banks (Data, systems and processes, business model, capital)
		• Business Indicator Component
		• Loss Component

7	-	Case Studies
		• Case Study: Insufficient controls over storage of title deeds of customers
8	-	Best Practice Guidance
		• Data Comparability Problem
		• Changing Level of Operational Risk Capital
		• Operational Risk Management Road Map
		• Operational Risk Allocation Rules
		• Charging Framework (Sample)

Chapter 5: Risk Control Self-Assessment

1	-	Introduction
2	-	Operational Risk Process and Key Control Analysis
		• Definition of RCSA
		• Types and Approaches of RCSA
		• General Control Environment Self-Assessment on Minimum Expected Controls
		• Characteristics of RCSA
		• Benefits of RCSA
		• Key Business Identification
		• Governance and Responsibilities
		• Frequency and Timing
		• BCBS Principles
3	-	Process Risk Mapping and Control
		• Business Process and Process Risk
		• Sign off on the Business Process
		• Tools on Operational Risk Mapping
		• Key Operational Risk Process by Function
4	-	Business Process Management Tool
		• Business Process Management
		• Root Cause Analysis
		• Operational Risk Event Types
		• Operational Risk Causal Factors
		• Risk Assessment Criteria
		• Subjective Risk Assessment
		• RCSA – Scorecard Approach
		• RCSA – Questionnaire Approach
		• RCSA Proactive Risk Identification and Management Tool
		• Management Results Reporting Tools
		• Heat Mapping
		• Operational Frequency – Severity Risk Mapping
		• RCSA Follow Up

5	-	• Advantage and Disadvantage of RCSA Quantification of Potential Exposure • Risk (Probability and Impact) Matrix • Quantification Techniques • Maximum Potential Exposure
6	-	Residual Risk Assessment and Treatment • Inherent Risk Exposure • Residual Risk Exposure • Causes • Effects • Action Plan • Other Elements • Risk Treatment Strategies • Operational Risk Action Plan
7	-	Operational Risk Reporting and Dashboards • Reporting RCSA Results • Reporting Action Planning • Internal Audit Planning and Reporting
8	-	Case Studies • Case Study: Misappropriation of a customer's funds by a staff member using a returned ATM card
9	-	Best Practice Guidance • Top-Down and Bottom-Up • Completing an RCSA: Approaches and Techniques • Workshop Approach • Planning • Attendees • Structure and Duration of the Workshop • Facilitation • Validation • Questionnaires • Scope of Questionnaire • Designing a Questionnaire • Content of Questionnaire • Integrating an RCSA into the Operational Risk Management Framework
Chapter 6: Operational Risk Events		
1	-	Introduction
2	-	Different Types of Risk Events • Definition of Operational Risk Event

		•	Identification of Loss Events
		•	Brainstorming Loss Events
		•	Defining Loss Events
		•	Screening Loss Events
		•	Factors of Review of Loss Events
		•	Actual Events and Near Misses
		•	Categorisation of Events
		•	Governance and Responsibilities
		•	BCBS Principles
3	-	Root Cause Analysis	
		•	Root Cause Analysis
		•	Fault Tree Analysis
		•	Ishikawa Cause and Effect Diagram
		•	Causes of Risk Events
		•	Control Failures
		•	Direct And Indirect Impacts
		•	Financial and Non-Financial Impacts
		•	Aligning with the Wider Operational Risk Framework
		•	Operational Risk Causal Factors
		•	Operational Risk Effect Types
4	-	Data Collection	
		•	Data Capture Requirements
		•	Reasons of Data Collection
		•	Date and Time of the Event
		•	Risk Event Type
		•	Location
		•	Causes
		•	Control Failures
		•	Direct and Indirect Impacts
		•	Financial and Non-Financial Impacts
		•	External Data Collection
		•	Data Collection: Difficulties and Solutions
		•	Aligning with the Wider Operational Risk Framework
5	-	Escalation	
		•	Incident Management and Notification
		•	Loss Prediction
		•	Loss Prevention
		•	Loss Control
		•	Loss Reduction
		•	Assumptions, Avoidance and Transference

		• Reporting of Operational Risk Events
		• Using Operational Risk Event Data
		• Using Loss Data to Support Risk Assessments and Monitoring
		• Using Loss Data to Support The Risk Appetite and Tolerance Activities
		• Using External Data to Benchmark Internal Loss Data
		• Using Loss Data to Support the Identification of Emerging Risks
		• Insight and Oversight
		• Supporting Risk Governance
6	-	Treatment of Boundary Loss
		• Treatment of Credit Risk Related Operational Risk Events
		• Treatment of Market Risk Related Operational Risk Events
		• Goodwill Payment
		• Single Versus Many Events
		• Specific Criteria on Loss Data Identification, Collection and Treatment
		• General Criteria on Loss Data Identification, Collection and Treatment
		• Lesson Learnt Session
7	-	Lesson Learnt and Corrective Actions
		• Source Data Documentation
		• Training and Awareness
		• Review on Other ORM Tools
		• External Event Analysis
8	-	Case Studies
		• Case Study: Misappropriation of a customer's funds by a staff member using a returned ATM card
9	-	Best Practice Guidance
		• Thematic reviews
		• Risk Modelling
		• Risk Culture
		• Reasons for collecting Operational Risk Event/Loss Data
		• Connecting multiple, related events
		• Validation of loss estimates
		• When to close an event
Chapter 7: Regulatory And Supervisory Frameworks		
1	-	Introduction
2	-	Compliance with Regulatory Standards
		• Recap on Hong Kong Monetary Authority, SA-1: Risk Management Framework; October 2017
		• Recap on Hong Kong Monetary Authority, OR-1: Operational Risk Management; November 2005

3	-	Supervisory Approach of Regulators
	•	HKMA Risk-based Supervisory Approach
	•	Relationship with the Prudential Regulator
	•	Continuous Supervision
	•	The HKMA's Risk-based Supervisory Methodology
	•	Risk Assessment Exercise
	•	Consolidated Supervision
	•	HKMA Risk Assessment on AI
	•	Primary prudential obligations of an AI
4	-	On-Site Examination and Prudential Meetings
	•	Preparation for On-site Examinations
	•	Preparation for Off-site Reviews
	•	Prudential Meetings
5	-	Guidelines from The BCBS (10)
	•	Recap on Basel Committee: Principles For The Sound Management Of Operational Risk; June 2011
	•	Recap on Basel Committee: Revisions to the principles for the sound management of operational risk: August 2020
	•	Basel Committee: Consolidated Basel Framework April 2019
6	-	Regulatory Focus
	•	HKMA 2020 Focus
	•	HKMA 2021 Work Priorities
7	-	Case Studies
	•	Case Study: Account takeover using a lost HKID card
8	-	Best Practice Guidance
	•	Regulatory Compliance Toolkit
Chapter 8: Contingency, Business Continuity And Recovery Planning		
1	-	Introduction
2	-	Types of Resilience Risk
	•	Definition of Resiliency
	•	Threats to Financial Resilience
	•	Interconnects of Financial and Operational Resiliency
	•	Drivers of Operational Resilience
	•	Risk, Resilience and Sustainability
3	-	Resiliency Risk Framework
	•	Operational Resilience Framework
	•	Questions on Operational Resilience
	•	Common Challenges
	•	COVID-19 Challenges

		• Building Blocks of Operational Resilience
		• Approach to Operational Resiliency
4	-	Effective Tools of Planning, Execution and Testing
		• Business Continuity Planning
		• Business Continuity Execution
		• Business Continuity Testing and Review
		• Business Continuity Insurance
5	-	Regulatory Requirements
		• Overview of International Regulation and Standard
		• Evolution of Regulation on Operational Resiliency (UK)
		• Meeting Regulator Expectation
		• Regulators Step Up Pressure
		• Resilience is a Governance Issue
		• IOSCO Principles on Cyber-resilience
		• BCBS Consultation on Operational Resiliency August 2020
		• HK Regulator Position on COVID-19
6	-	Integration into Operational Risk
		• Enterprise Resiliency Office
		• Maintaining Financial Resiliency In Post COVID-19
		• Integration Operational Resiliency into Operational Risk
7	-	Case Studies
		• Case Study: Guide to Better Operational Resilience
8	-	Best Practice Guidance
		• Take-away on Resiliency Risk Management
		• BCP Checklist
Chapter 9: Risk Culture, Awareness And Key Components Of Successful Operational Risk Management Implementation		
1	-	Introduction
2	-	Risk Culture and Awareness
		• Recap on the Importance of Operational Risk Culture
		• Performance Metrics of Operational Risk Culture
3	-	Importance and Application of Trainings in Operational Risk Management
		• Operational Risk Training
		• Means of Operational Risk Training
		• Contents of Operational Risk Training
		• Review and Maintain Operational Risk Training
4	-	Communication and Engagement Plan of Operational Risk Management in The Workplace
		• Motive: Reduce Routine Losses and Improve Efficiency

		• Motive: Reduce the Required Amount of Regulatory Capital
		• Motive: Improve Operational Efficiency
		• Motive: Overcome Operational Risk Challenges
		• Methods of Communication and Engagement
5	-	Communication with Senior Management on Operational Risk Topics
		• Communication on Elements of Operational Risk Framework
		• Communication on Risk Can Be Aggregated and Presented in Simple and Concise Manner to Senior Management
		• Communication on Interpretation of High Level Operational Risk Results to Draw
		• Communication on Meaningful Conclusions and Trends That Will Impact the Organization
		• Communication on Explanation of Operational Risk Measurement Tools and Methodologies in Simple and Concise
		• Manner to All Business Units and Senior Management
		• Operational Risk Reporting Process
		• Common Content of ORM Reports
		• Successful Factors in ORM Reporting and Why They Are Important
		• Risk Report Best Practice Examples
		• What Does This Mean In Practice
		• Objectives of Operational Risk Reporting
		• Characteristics of Operational Risk Reporting
		• Contents in Operational Risk Reports (Examples)
		• Operational Risk Reports
		• Timeliness of Reports
6	-	Oversight, Monitoring and Understanding of Relevant Operational Risk Management Processes Taken Up by Subject Matter Experts
		• Engagement Model between Operational Risk and Internal Audit
		• Engagement Model between Operational Risk and Compliance
		• Engagement Model between Operational Risk and Business Continuity
		• Engagement Model between Operational Risk and Other Subject Matter Experts
7	-	Case Studies
		• Case Study: Enforcement action against Société Générale by the SFC following the investigation of the HKMA
8	-	Best Practice Guidance
		• ORM Implementation Toolkit
Chapter 10: Operational Risks Related To The Key Areas For Future Banking		
1	-	Introduction
2	-	Green and Sustainable Banking
		• Current Landscape

			• Climate Risk Concept
			• Types of Climate Risks
			• Climate Risk Impact
			• Physical and Transition Risk
			• Key Climate Related Risk for Financial Institutions
			• Managing Climate Risk
			• Climate Risk and Opportunities
			• Task Force on Climate Related Financial Disclosure (TCFD)
			• TCFD Recommendations
			• TCFD Supplement Guidance
			• How Banks Addressing Climate Risk
			• TCFD Key Implementation Challenges
			• Typology of Physical Risk
			• From Physical Risk to Financial Stability Risk
			• Typology of Transition Risk
			• From Transition Risk to Financial Stability Risk
			• Climate Financial Risk Assessment
			• Example of Climate Risk Impact on Bank
			• How Financial Firms Addressing Climate Risk
			• Climate Risk Framework
			• Four Biodiversity-related Financial Risks
			• Operational Risk Assessment
			• Climate Risk Stress Testing
			• Operational Risk Scenarios (Example)
			• Incorporating Climate Risk into Enterprise Risk
3	-	Digital Banking Services	
			• Journey of Intelligent Process Automation
			• Adversarial Risk
			• Risk Assessment Framework
			• Technology Risk Assessment Framework
			• Third Party Risk Assessment Framework
			• Recognition of Risk and Control
			• Proactive Risk and Control Consciousness
			• Call to Action
			• Emerging Risk in Fintech
			• Risk Questions to Answer
			• Operational Risk in Retail Payments and Digital Wallets
			• Operational Risk in Fintech Credit
			• Operational Risk in Robo-advisors
			• Operational Risk in DLT-based Wholesale Payment Systems

		• Operational Risk in Private Digital Currencies
		• Operational Risk in AI and Machine Learning
4	-	Case Studies
		• Case Study: The HKMA suspends Leung Wai Yu for three months
5	-	Best Practice Guidance
		• Risk Management for New Initiatives Toolkit
Chapter 11: The Future and Challenges Of Operational Risk Management		
1	-	Introduction
2	-	Competence Development
		• ORM Officer Professional Standard Summary of Core Competencies
		• HK SFC Managers-In-Charge of Core Functions (MIC)
		• HKMA Enhanced Competence Framework for Banking Practitioners
		• Strengthening Individual Accountability
3	-	Emerging and Proactive Risk Management
		• Performing Environmental Scanning
		• Proactive ORM Monitoring
		• Forces Driving Complexity, Increasing Risk
		• Identification of Emerging Risks and Opportunities
		• Use of Operational Risk in Decision Making
		• Early Warning Signal
		• Develop Scenarios
		• Generate Options and Strategy
		• Implement Strategy
		• Review Risk Development
		• Effective Lines of Defense
		• Predictive Risk Intelligence
		• Embedding Operational Risk into Business
		• Overview of Deliverables by Stakeholders
4	-	Deployment of Artificial Intelligence
		• Key Trends in Risktech
		• Application of Technology in the Financial and Non-financial Risk Management
		• Priority of RegTech and RiskTech
		• GARP Survey on AI/RPA
		• AI Adoption in Risk Management
		• Risk Managers in Assessing AI Adoption or Non-adoption Risk
		• Empower Risk and Compliance
		• Trade Lifecycle Enabled by AI
		• Digitization of Risk Management
		• CCAR and Stress Testing

		• Risks and Opportunities: Questions on AI	
		• Risks on AI	
		• Key Points on AI Development Path	
5	-	Challenges and Solutions	
		• Integrating ORM Framework	
		• Engaging the Right People	
		• Adding Value	
		• Overcoming the Cultural Challenges	
		• What Does Success Look Like	
		• Key Elements to Embed Operational Risk	
		• Operational Risk Deliverables	
6	-	Case Studies	
		• Case Study: The Monetary Authority Suspends Chu Lai Kwan for Breaching the Code of Conduct and Internal Policy of Her Employer	
7	-	Best Practice Guidance	
		• Overcome ORM Challenges Toolkit	
Chapter 12: Integrated Case Studies And Best Practices			
1	-	Introduction	
2	-	Integrated Case Studies	
		• Operational Risk Lessons from the OCC's Citibank Fine	
		• Swiss banks suffer tax-dodging fines	
		• Aussie banks pay for underpaying staff	
3	-	Best Practice Guidance	
		• Interbank payment weaknesses	
		• Swiss tax evasion	
		• Data breaches top $2bn since 2012	

Recommended Readings

Essential Readings:

1. Ariane Chapelle (2018). Operational Risk Management: Best Practices in the Financial Services Industry (1st ed.) WILEY.
2. The Hong Kong Institute of Bankers (2013). *Operational Risk Management* (1st ed.) WILEY.
3. HKIB Handouts - Advanced Operational Risk Management (2021)

Supplementary Readings

1. Basel Committee: Consultative Document Revisions To The Principles For The Sound Management Of Operational Risk; November 2020
2. Basel Committee: The Basel Framework: Frequently Asked Questions; June 2020
3. Basel Committee: Consultative Document Principles For Operational Resilience; August 2020

4. Basel Committee: Launch Of The Consolidated Basel Framework; December 2019

5. Basel Committee: Sound Practices: Implications Of Fintech Developments For Banks And Bank Supervisors; February 2018

6. Basel Committee: Basel III: Finalising Post-Crisis Reforms; December 2017

7. Basel Committee: Principles For The Sound Management Of Operational Risk; June 2011

8. Hong Kong Monetary Authority, TM-E-1: Risk Management of E-Banking; October 2019

9. Hong Kong Monetary Authority, IC-1: Risk Management Framework; October 2017

10. Hong Kong Monetary Authority, OR-1: Operational Risk Management in Supervisory Policy Manual; November 2005

11. Hong Kong Monetary Authority, TM-G-1: General Principles for Technology Risk Management, June 2003

12. Hong Kong Monetary Authority, TM-G-2: Business Continuity Planning, December 2002

13. Hong Kong Monetary Authority, Operational Incidents Watch

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