

## Module Outline

### ECF on Operational Risk Management (ORM)

### Module 4 “Advanced Operational Risk Management”

<b>Benchmarked HKQF Level:</b>	5
<b>No. of Credits:</b>	30
<b>Total Notional Learning Hours:</b>	300
<b>a) Class contact hours:</b>	21 hours (3-hour per session x 7)
<b>b) Self-study hours:</b>	276 hours
<b>c) Assessment hours:</b>	3 hours
<b>Pre-requisite:</b>	N/A

### Module Objective

This 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.

### Module Intended Outcomes (MIOs) and Units of Competencies (UoCs)

Upon completion of the Module 4, candidates should be able to:

<b>MIOs</b>	<b>Intended Outcomes / Competence</b>	<b>*Unit of Competencies (UoCs)</b>
MIO-1	Develop and establish operational risk management frameworks and associated policies and procedures.	107405L5 107406L5
MIO-2	Evaluate the operational risks encountered by different business units of the AI and establish effective mitigating controls.	107412L5/ 109313L5 107414L5
MIO-3	Manage operational risks by using risk management control tools, e.g. risk control self-assessment (RCSA) and key risk indicators (KRIs).	109297L5 109307L5 109308L5
MIO-4	Develop risk control measures by using scenario analysis and stress testing to identify potential operational risk events and assess their potential impact.	109309L5
MIO-5	Analyse the risk profile of the AI/business function and apply operational risk modelling to quantify and predict operational risks.	

MIO-6	Compile the dashboards and metrics to measure and analyse operational risks within different business units.	
MIO-7	Develop business continuity plan and recovery strategy.	
MIO-8	Build and promote a risk focused culture within the AI/within the business function.	
MIO-9	Propose strategic operational risk advice and remediation actions to senior management on findings of operational risk events.	
MIO-10	Design and deliver operational risk training to business units.	

*\*Note: For the details of the UoCs, please refer to the Specification of Competency Standards (SCS) of Retail Banking and Corporate & Commercial Banking which were developed by HKCAAVQ.*

## Assessment

<b>Examination duration:</b>	3 hours
<b>Examination format:</b>	Part A: Multiple Choice Questions (MCQ) with 50 questions; Part B: 2 out of 3 Essay Type Questions.
<b>Pass mark:</b>	60%

## Syllabus

<b>Chapter 1: Operational Risk Assessment Methodology And New Products Risk Assessment</b>	
<b>1.1</b>	<b>Introduction</b>
<b>1.2</b>	<b>Risk Assessment Criteria</b>
1.2.1	- Optimal Risk Taking for Banks
1.2.2	- Stages for Risk Assessment Process
1.2.3	- Critical Risk Factors in Various Business Area
1.2.4	- Operational Risk Assessment Methods
1.2.5	- Operational Risk Assessment Requirements
1.2.6	- Operational Risk Assessment Tools
1.2.7	- Operational Risk Assessment Factors
1.2.8	- Operational Risk Management Cycle

1.2.9	- Timeliness of Operational Risk Assessment
1.2.10	- Operational Risk Assessment Process Map
1.2.11	- Developing Assessment Criteria
1.2.12	- Operational Risk Rating Scale (Sample)
<b>1.3</b>	<b>Risk Taxonomy</b>
1.3.1	- Operational Risk Taxonomy
1.3.2	- Development of Operational Risk Taxonomy
1.3.3	- Objective and Benefits of Operational Risk Taxonomy
1.3.4	- Value of Operational Risk Taxonomy
1.3.5	- Risk Taxonomy Hierarchy
1.3.6	- Taxonomy by Business Lines
1.3.7	- Taxonomy by Operational Risk Event Types
1.3.8	- Taxonomy by Operational Risk Causes
1.3.9	- Taxonomy by Operational Risk Loss Effects
1.3.10	- Taxonomy by Control Categories
1.3.11	- Operational Risk Taxonomy Mapping
1.3.12	- Basel Taxonomy Activity Examples (Level 3) – Loss Event Type Classification
1.3.13	- Best Practice: ORX Operational Risk Taxonomy
1.3.14	- Connection of the ORX Reference Taxonomy to the Basel Event Types
1.3.15	- ORX Reference Taxonomy
1.3.16	- ORX Bow Tie Method
1.3.17	- ORX Reference Taxonomy
1.3.18	- Top-level Observations From The Data
<b>1.4</b>	<b>New Process Change Risk Assessment</b>
1.4.1	- Manage Business Process Change Process
1.4.2	- Types of Business Process Changes
1.4.3	- Change Management R&R - First Line
1.4.4	- Change Management R&R - Second Line
1.4.5	- Business Process Change Scorecard
1.4.6	- Points of Risk Consideration (Example)
1.4.7	- Risk Assessment Thresholds for Business Process Change

1.4.8	- Operational Risk Perspective on Change
1.4.9	- Challenges on Risk Management for Changes
1.4.10	- Cohorts in Responding to Change
1.4.11	- Common Causes of Change Failure
1.4.12	- Information Requirement on Change
1.4.13	- Stage Involvement of Risk Function
1.4.14	- KRI for Monitoring Project Risks
<b>1.5</b>	<b>New Product Risk Assessment Cycle</b>
1.5.1	- New Product Definition
1.5.2	- Industry Observation on New Product
1.5.3	- Drivers for New Product
1.5.4	- Features of New Product
1.5.5	- Categorisation of New Product
1.5.6	- New Product Development Lifecycle
1.5.7	- New Product Risk Assessment Requirement
1.5.8	- Examples of Significant Changes to Risk Profile of Product (HKMA Illustration)
1.5.9	- Principles Governing the New-Product-Approval Process
1.5.10	- Issues on Managing New Product
1.5.11	- Types of Risks in New Process
1.5.12	- New Product Policy (Sample)
1.5.13	- New Product Committee (NPC)
1.5.14	- KRI for New Product
1.5.15	- New Product Risk Rating (NPRR)
1.5.16	- New Product Documentation
1.5.17	- New Product Risk Roles and Responsibilities – First Line
1.5.18	- New Product Risk Roles and Responsibilities – Second Line
1.5.19	- Product Expiration
1.5.20	- Consideration of Conflict of Interest
1.5.21	- Customer Onboarding
1.5.22	- Key Process and Regulatory Requirements of Customer Onboarding
1.5.23	- Risk Mitigation of Customer Onboarding

<b>1.6</b>	<b>Offboarding and Periodic Review</b>
1.6.1	- Factors for Product Offboarding
1.6.2	- Overview of Post Implementation Review
1.6.3	- Scope of Post Implementation Review
1.6.4	- Overview of Periodic Product Review
1.6.5	- Scope of Periodic Product Review
1.6.6	- Customer Offboarding
1.6.7	- Key Process and Regulatory Requirement of Customer Offboarding
1.6.8	- Risk and Mitigation of Customer Offboarding
1.6.9	- Latest Trend of Customer Onboarding and Offboarding
<b>1.7</b>	<b>Case Studies</b>
1.7.1	- Case Study: Mis-selling of Investment Products
1.7.2	- Case Study: Deficient practices in ascertaining insurance protection for bill discounting business
1.7.3	- Case Study: Underpayment of stamp duty for certain OTC transactions
<b>1.8</b>	<b>Best Practice Guidance</b>
1.8.1	- New Product Checklist (Sample)
<b>Chapter 2: Scenario Analysis And Stress Testing</b>	
<b>2.1</b>	<b>Introduction</b>
<b>2.2</b>	<b>Stress Testing</b>
2.2.1	- Definition of Scenario Analysis, Stress Testing and Reverse Stress Testing
2.2.2	- Relationship between Scenario Analysis, Stress Testing and Reverse Stress Testing
2.2.3	- Demarcating Scenario Analysis, Stress and Reverse Stress testing
2.2.4	- Overview and Risk Factors of Operational Risk Stress Testing
2.2.5	- Value of Operational Risk Stress Testing
2.2.6	- Elements of Operational Risk Stress Testing
2.2.7	- Types of Risks Covered in Stress Testing
2.2.8	- Guiding Principles of Stress Testing
2.2.9	- Purpose of Stress Testing and Scenario Analysis
2.2.10	- Features of Stress Testing and Scenario Analysis
2.2.11	- Benefits of Stress Testing and Scenario Analysis

2.2.12	- Linkage to Capital Planning Process
2.2.13	- Relationship between Sensitivity Analysis, Scenario Analysis, Stress Testing, Reverse Stress Testing, and Back Testing
<b>2.3</b>	<b>Scenario Analysis</b>
2.3.1	- Overview of Scenario Analysis
2.3.2	- Conducting Effective Scenario Analysis
2.3.3	- Identifying and Agreeing the Focus of Analysis
2.3.4	- Determining the Level of Analysis
2.3.5	- Key Components of Scenario Analysis Framework
2.3.6	- Scenario Design and Scenario Execution
2.3.7	- Approach in Developing Scenario Analysis
2.3.8	- Governance and Responsibilities
<b>2.4</b>	<b>Selection of The Scenarios</b>
2.4.1	- Animal Kingdom of Risks
2.4.2	- Black Swan Examples
2.4.3	- Gray Rhino Examples
2.4.4	- Questions on Understanding the Unknowns
2.4.5	- Steps in Building Scenario Analysis
2.4.6	- Relevance of Scenario Analysis
2.4.7	- Forward-looking Focus
2.4.8	- Data Collection
2.4.9	- Scenario Risk Drivers
2.4.10	- Scenario Distribution
2.4.11	- High Severity Scenario Examples
2.4.12	- Scenario Biases
2.4.13	- Possible Relationships between Operational Losses and Macroeconomic Conditions for Basel Event Types
2.4.14	- Identifying and Approving a Portfolio of Scenarios
2.4.15	- Techniques for Identifying Scenarios
2.4.16	- Sample of Common Scenarios (Corporate Bank)
2.4.17	- Assessing COVID Impact with Scenario Analysis
<b>2.5</b>	<b>Execution and Analysis</b>
2.5.1	- Running a Scenario Workshop

2.5.2	- Causes of Scenarios
2.5.3	- Assessing Impacts
2.5.4	- Assessing Likelihood
2.5.5	- Management Response
2.5.6	- Scenario Template
2.5.7	- Expert Assessment and Biases
2.5.8	- Validation and Governance
2.5.9	- Preparing for Operational Risk Workshop
2.5.10	- Conducting a Workshop
2.5.11	- The Participants
2.5.12	- Assessing Probability and Impact
2.5.13	- Workshop Analysis Techniques
2.5.14	- Validation of Output
2.5.15	- Governing the Process
2.5.16	- Making Effective Use of the Outputs
2.5.17	- Risk and Capital Modeling
2.5.18	- Calculating Baseline Loss
2.5.19	- Expected Levels of Loss
2.5.20	- Unexpected Levels of Loss
2.5.21	- Key Challenges in Scenario Analysis
<b>2.6</b>	<b>Benchmarking with The Industry</b>
2.6.1	- Industry Benchmarking of Scenario Analysis
2.6.2	- Industry Survey on Scenario Analysis
<b>2.7</b>	<b>Regulatory Guideline</b>
2.7.1	- Global Regulatory Timeline
2.7.2	- BCBS Principles for Sound Stress Testing Practices and Supervision
2.7.3	- HKMA Requirement on Stress Testing and Operational Risk Scenario Analysis
<b>2.8</b>	<b>Case Studies</b>
2.8.1	- Case Study: Phishing emails and fraudulent bank websites stealing customers' e-banking account information
<b>2.9</b>	<b>Best Practice Guidance</b>
2.9.1	- Stress Testing Toolkit

2.9.2	- Reverse Stress Testing Methodology
2.9.3	- Backtesting for Operational Risk
<b>Chapter 3: Key Risk Indicators</b>	
<b>3.1</b>	<b>Introduction</b>
<b>3.2</b>	<b>Difference Between Key Risk Indicator, Key Control Indicator and Key Performance Indicator</b>
3.2.1	- Definitions of Operational Risk Indicators
3.2.2	- Risk Indicators
3.2.3	- Control Indicators
3.2.4	- Performance Indicators
3.2.5	- Dimensions and Types of Key Risk Indicators
3.2.6	- KRI vs KCI vs KPI
3.2.7	- Composite Indicators
3.2.8	- Essentials of Key Indicators
3.2.9	- Categories of Key Risk Indicators
3.2.10	- Exposure Indicators
3.2.11	- Failure Indicators
3.2.12	- Stress Indicators
3.2.13	- Causal Indicators
3.2.14	- BCBS Principles
<b>3.3</b>	<b>Design</b>
3.3.1	- Life Cycle of Key Risk Indicators
3.3.2	- Roles of Key Risk Indicators
3.3.3	- Translating Risk Appetite
3.3.4	- Risk Monitoring
3.3.5	- Governance and Assurance
3.3.6	- Risk Assessment and Modelling
3.3.7	- Relevance
3.3.8	- Measurable
3.3.9	- Leading vs Lagging Indicators

3.3.10	- Types of Indicators
3.3.11	- Bow Tie Diagram for Key Risk Indicators
3.3.12	- Easy to Collect and Monitor
3.3.13	- Comparable
3.3.14	- Auditable
3.3.15	- Selecting Indicators: Top Down or Bottom Up
3.3.16	- Consideration for Top-down Approach
3.3.17	- Consideration for Bottom-up Approach
3.3.18	- Deciding Frequency
3.3.19	- Consideration for Number of Key Risk Indicators
3.3.20	- Thresholds and Limits
3.3.21	- Specialised Thresholds
3.3.22	- Value Proposition of Risk Indicators
<b>3.4</b>	<b>Analysis</b>
3.4.1	- Analysis of Loss Related Indicators
3.4.2	- Analysis of Cause Related Indicators
3.4.3	- Analysis of Control Related Indicators
3.4.4	- Risk Monitoring
3.4.5	- Triggers for Escalation
3.4.6	- Managing and Reporting Risk Indicators
3.4.7	- Adding or Changing Indicators
3.4.8	- Taking Action to Resolve Threshold or Limit Breaches
3.4.9	- Comparative Analysis – Joining the Dots
3.4.10	- Overview of KRI Reporting
<b>3.5</b>	<b>Reporting</b>
3.5.1	- Level of KRI Reporting
3.5.2	- Reporting to Different Audiences
3.5.3	- Frequency of Reporting
3.5.4	- Data Visualisation
<b>3.6</b>	<b>Validation</b>
3.6.1	- Validating Indicators

3.6.2	- Governance, Responsibilities and Assurance
<b>3.7</b>	<b>Case Studies</b>
3.7.1	- Case Studies: The Monetary Authority Suspends CHUI Chau Mang For Four Months
3.7.2	- Case Studies: Enforcement Collaboration - Pang Hon Pan Banned For 21 Months
<b>3.8</b>	<b>Best Practice Guidance</b>
3.8.1	- Sample Key Risk Indicators (KRI)
3.8.2	- Sample Key Performance Indicators (KPI)
3.8.3	- Sample Key Control Indicators (KCI)
3.8.4	- Sample KRI Reports
3.8.5	- Success Factors in KRI Implementation
<b>Chapter 4: Capital Requirements For Operational Risk</b>	
<b>4.1</b>	<b>Introduction</b>
4.1.1	- Introduction
4.1.2	- Concepts and Applications of Accounting Capital, Economic Capital and Risk Weighted Assets
4.1.3	- Difference and Context of Operational Risk Accounting Capital, Economic Capital and Risk Weighted Assets
4.1.4	- Expected Loss and Unexpected Loss in Operational Risk
4.1.5	- Different Tiers Of Capital, LDAC, And The Systemic Risk Buffer Under The Basel Regime
<b>4.2</b>	<b>Basic Indicator Approach (BIA)</b>
4.2.1	- Operational Risk Capital Calculation
4.2.2	- Capital Approach
4.2.3	- BCBS Principles
4.2.4	- Position of Various Capital Measurement Approach
4.2.5	- Selection Criteria
4.2.6	- Basic Indicator Approach
4.2.7	- BIA Example 1
4.2.8	- BIA Example 2
<b>4.3</b>	<b>Standardised Approach (SA)</b>
4.3.1	- The Standardised Approach
4.3.2	- Advantages of Standardized Approach
4.3.3	- TSA Example 1

4.3.4	- TSA Example 2
<b>4.4</b>	<b>Alternative Standardised Approach (ASA)</b>
4.4.1	- Alternative Standardised Approach
<b>4.5</b>	<b>Advanced Measurement Approach (AMA)</b>
4.5.1	- Advanced Measurement Approach
4.5.2	- Advanced Measurement Approach Distribution Curve
4.5.3	- AMA Quantitative Stipulations
4.5.4	- AMA Qualitative Stipulations
4.5.5	- Internal Measurement Approach
4.5.6	- Loss Distribution Approach
4.5.7	- Advantages and Disadvantages of LDA
4.5.8	- Standard LDA methods
4.5.9	- Step 1: Modeling Frequency
4.5.10	- Frequency in an LDA Model: Example
4.5.11	- Qualities of the Poisson Distribution
4.5.12	- Step 2: Modeling Severity
4.5.13	- Selecting a Severity Distribution
4.5.14	- The Severity Probability Distribution
4.5.15	- Step 3: Monte Carlo Simulation
4.5.16	- Correlation
4.5.17	- Scenario Analysis Approach to Modeling Operational Risk Capital
4.5.18	- Advantages and Disadvantages of an SA Approach
4.5.19	- Hybrid Approach to Modeling Operational Risk Capital
4.5.20	- Insurance
4.5.21	- Disclosure
<b>4.6</b>	<b>Revised Standardized Approach (RSA)</b>
4.6.1	- Revised Standardized Approach
4.6.2	- Methodology of Revised Standardized Approach
4.6.3	- Reduced Risk Management Incentive
4.6.4	- Implications For Banks (Data, systems and processes, business model, capital)
4.6.5	- Business Indicator Component

4.6.6	- Loss Component
<b>4.7</b>	<b>Case Studies</b>
4.7.1	- Case Study: Insufficient controls over storage of title deeds of customers
<b>4.8</b>	<b>Best Practice Guidance</b>
4.8.1	- Data Comparability Problem
4.8.2	- Changing Level of Operational Risk Capital
4.8.3	- Operational Risk Management Road Map
4.8.4	- Operational Risk Allocation Rules
4.8.5	- Charging Framework (Sample)
<b>Chapter 5: Risk Control Self-Assessment</b>	
<b>5.1</b>	<b>Introduction</b>
<b>5.2</b>	<b>Operational Risk Process and Key Control Analysis</b>
5.2.1	- Definition of RCSA
5.2.2	- Types and Approaches of RCSA
5.2.3	- General Control Environment Self-Assessment on Minimum Expected Controls
5.2.4	- Characteristics of RCSA
5.2.5	- Benefits of RCSA
5.2.6	- Key Business Identification
5.2.7	- Governance and Responsibilities
5.2.8	- Frequency and Timing
5.2.9	- BCBS Principles
<b>5.3</b>	<b>Process Risk Mapping and Control</b>
5.3.1	- Business Process and Process Risk
5.3.2	- Sign off on the Business Process
5.3.3	- Tools on Operational Risk Mapping
5.3.4	- Key Operational Risk Process by Function
<b>5.4</b>	<b>Business Process Management Tool</b>
5.4.1	- Business Process Management
5.4.2	- Root Cause Analysis
5.4.3	- Operational Risk Event Types
5.4.4	- Operational Risk Causal Factors

5.4.5	- Risk Assessment Criteria
5.4.6	- Subjective Risk Assessment
5.4.7	- RCSA – Scorecard Approach
5.4.8	- RCSA – Questionnaire Approach
5.4.9	- RCSA Proactive Risk Identification and Management Tool
5.4.10	- Management Results Reporting Tools
5.4.11	- Heat Mapping
5.4.12	- Operational Frequency – Severity Risk Mapping
5.4.13	- RCSA Follow Up
5.4.14	- Advantage and Disadvantage of RCSA
<b>5.5</b>	<b>Quantification of Potential Exposure</b>
5.5.1	- Risk (Probability and Impact) Matrix
5.5.2	- Quantification Techniques
5.5.3	- Maximum Potential Exposure
<b>5.6</b>	<b>Residual Risk Assessment and Treatment</b>
5.6.1	- Inherent Risk Exposure
5.6.2	- Residual Risk Exposure
5.6.3	- Causes
5.6.4	- Effects
5.6.5	- Action Plan
5.6.6	- Other Elements
5.6.7	- Risk Treatment Strategies
5.6.8	- Operational Risk Action Plan
<b>5.7</b>	<b>Operational Risk Reporting and Dashboards</b>
5.7.1	- Reporting RCSA Results
5.7.2	- Reporting Action Planning
5.7.3	- Internal Audit Planning and Reporting
<b>5.8</b>	<b>Case Studies</b>
5.8.1	- Case Study: Loss Of Certificates Of Financial Instruments Pledged For Credit Facilities
<b>5.9</b>	<b>Best Practice Guidance</b>
5.9.1	- Top-Down and Bottom-Up

5.9.2	- Completing an RCSA: Approaches and Techniques
5.9.3	- Workshop Approach
5.9.4	- Planning
5.9.5	- Attendees
5.9.6	- Structure and Duration of the Workshop
5.9.7	- Facilitation
5.9.8	- Validation
5.9.9	- Questionnaires
5.9.10	- Scope of Questionnaire
5.9.11	- Designing a Questionnaire
5.9.12	- Content of Questionnaire
5.9.13	- Integrating an RCSA into the Operational Risk Management Framework
<b>Chapter 6: Operational Risk Events</b>	
<b>6.1</b>	<b>Introduction</b>
<b>6.2</b>	<b>Different Types of Risk Events</b>
6.2.1	- Definition of Operational Risk Event
6.2.2	- Identification of Loss Events
6.2.3	- Brainstorming Loss Events
6.2.4	- Defining Loss Events
6.2.5	- Screening Loss Events
6.2.6	- Factors of Review of Loss Events
6.2.7	- Actual Events and Near Misses
6.2.8	- Categorisation of Events
6.2.9	- Governance and Responsibilities
6.2.10	- Basel Consultative Paper – Revisions to Principles for the Sound Management of Operational Risk (PSMOR)
<b>6.3</b>	<b>Root Cause Analysis</b>
6.3.1	- Root Cause Analysis
6.3.2	- Fault Tree Analysis
6.3.3	- Ishikawa Cause and Effect Diagram
6.3.4	- Causes of Risk Events
6.3.5	- Control Failures

6.3.6	- Direct And Indirect Impacts
6.3.7	- Financial and Non-Financial Impacts
6.3.8	- Aligning with the Wider Operational Risk Framework
6.3.9	- Operational Risk Causal Factors
6.3.10	- Operational Risk Effect Types
<b>6.4</b>	<b>Data Collection</b>
6.4.1	- Data Capture Requirements
6.4.2	- Reasons of Data Collection
6.4.3	- Date and Time of the Event
6.4.4	- Risk Event Type
6.4.5	- Location
6.4.6	- External Data Collection
6.4.7	- Data Collection: Difficulties and Solutions
6.4.8	- Aligning with the Wider Operational Risk Framework
<b>6.5</b>	<b>Escalation</b>
6.5.1	- Incident Management and Notification
6.5.2	- Loss Prediction
6.5.3	- Loss Prevention
6.5.4	- Loss Control
6.5.5	- Loss Reduction
6.5.6	- Assumptions, Avoidance and Transference
6.5.7	- Reporting of Operational Risk Events
6.5.8	- Using Operational Risk Event Data
6.5.9	- Using Loss Data to Support Risk Assessments and Monitoring
6.5.10	- Using Loss Data to Support The Risk Appetite and Tolerance Activities
6.5.11	- Using External Data to Benchmark Internal Loss Data
6.5.12	- Using Loss Data to Support the Identification of Emerging Risks
6.5.13	- Insight and Oversight
6.5.14	- Supporting Risk Governance
<b>6.6</b>	<b>Treatment of Boundary Loss</b>
6.6.1	- Treatment of Credit Risk Related Operational Risk Events

6.6.2	- Treatment of Market Risk Related Operational Risk Events
6.6.3	- Goodwill Payment
6.6.4	- Single Versus Many Events
6.6.5	- Specific Criteria on Loss Data Identification, Collection and Treatment
6.6.6	- General Criteria on Loss Data Identification, Collection and Treatment
6.6.7	- Lesson Learnt Session
<b>6.7</b>	<b>Lesson Learnt and Corrective Actions</b>
6.7.1	- Source Data Documentation
6.7.2	- Training and Awareness
6.7.3	- Review on Other ORM Tools
6.7.4	- External Event Analysis
<b>6.8</b>	<b>Case Studies</b>
6.8.1	- Case Study: Use Of Fraudulent Documents And Information For Obtaining Factoring Financing
<b>6.9</b>	<b>Best Practice Guidance</b>
6.9.1	- Thematic reviews
6.9.2	- Risk Modelling
6.9.3	- Risk Culture
6.9.4	- Reasons for collecting Operational Risk Event/Loss Data
6.9.5	- Connecting multiple, related events
6.9.6	- Validation of loss estimates
6.9.7	- When to close an event
<b>Chapter 7: Regulatory And Supervisory Frameworks</b>	
<b>7.1</b>	<b>Introduction</b>
<b>7.2</b>	<b>Compliance with Regulatory Standards</b>
7.2.1	- Recap on Hong Kong Monetary Authority, SA-1: Risk Management Framework; October 2017
7.2.2	- Recap on Hong Kong Monetary Authority, OR-1: Operational Risk Management; July 2022
7.2.3	- Concentration Risk on Outsourcing
7.2.4	- Risk and Impact of Concentration Risk on Outsourcing
7.2.5	- Mitigation and Example of Concentration Risk on Outsourcing
<b>7.3</b>	<b>Supervisory Approach of Regulators</b>

7.3.1	- HKMA Risk-based Supervisory Approach
7.3.2	- Relationship with the Prudential Regulator
7.3.3	- Continuous Supervision
7.3.4	- The HKMA's Risk-based Supervisory Methodology
7.3.5	- Risk Assessment Exercise
7.3.6	- Consolidated Supervision
7.3.7	- HKMA Risk Assessment on AI
7.3.8	- Primary prudential obligations of an AI
<b>7.4</b>	<b>On-Site Examination and Prudential Meetings</b>
7.4.1	- Preparation for On-site Examinations
7.4.2	- Preparation for Off-site Reviews
7.4.3	- Prudential Meetings
<b>7.5</b>	<b>Guidelines from The BCBS (10)</b>
7.5.1	- Recap on Basel Committee: Principles For The Sound Management Of Operational Risk; June 2011
7.5.2	- Recap on Basel Committee: Revisions to the principles for the sound management of operational risk: August 2020
7.5.3	- Basel Committee: Consolidated Basel Framework April 2019
7.5.4	- Revisions To The Principles For The Sound Management Of Operational Risk; March 2021
<b>7.6</b>	<b>Regulatory Focus</b>
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7.6.2	- HKMA Work Priorities in 2024
7.6.3	- Key Performance Indicators of Banking
<b>7.7</b>	<b>Case Studies</b>
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8.1.2	- Disaster Recovery, Business Continuity and Related Concepts: A Detailed Overview
<b>8.2</b>	<b>Types of Resilience Risk</b>

8.2.1	- Definition of Resiliency
8.2.2	- Threats to Financial Resilience
8.2.3	- Interconnects of Financial and Operational Resiliency
8.2.4	- Drivers of Operational Resilience
8.2.5	- Risk, Resilience and Sustainability
8.2.6	- Types of Disasters
<b>8.3</b>	<b>Resiliency Risk Framework</b>
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8.3.2	- Questions on Operational Resilience
8.3.3	- Common Challenges
8.3.4	- COVID-19 Challenges
8.3.5	- Building Blocks of Operational Resilience
8.3.6	- Approach to Operational Resiliency
<b>8.4</b>	<b>Effective Tools of Planning, Execution and Testing</b>
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8.4.2	- Business Continuity Execution
8.4.3	- Business Continuity Testing and Review
8.4.4	- Business Continuity Insurance
<b>8.5</b>	<b>Regulatory Requirements</b>
8.5.1	- Overview of International Regulation and Standard
8.5.2	- Evolution of Regulation on Operational Resiliency (UK)
8.5.3	- Meeting Regulator Expectation
8.5.4	- Regulators Step Up Pressure
8.5.5	- Resilience is a Governance Issue
8.5.6	- IOSCO Principles on Cyber-resilience
8.5.7	- BCBS Consultation on Operational Resiliency, March 2021
8.5.8	- HK Regulators' Position on COVID-19
8.5.9	- HKMA Supervisory Policy Manual (SPM): New module OR-2 on "Operational Resilience" and revised module TM-G-2 on "Business Continuity Planning"
8.5.10	- Effective Incident Management Programme
8.5.11	- HKMA Timeline on Operational Resilience
8.5.12	- BCP and Operational Resilience according to the Hong Kong Monetary Authority

8.5.13	- Business Continuity Planning and Risk Assessment Methodologies
8.5.14	- Incident Response
8.5.15	- Sound Practices for Payment Operations
8.5.16	- Banking Sector's Support for Implementation of Severe Weather Trading
<b>8.6</b>	<b>Integration into Operational Risk</b>
8.6.1	- Enterprise Resiliency Office
8.6.2	- Maintaining Financial Resiliency In Post COVID-19
8.6.3	- Integration Operational Resiliency into Operational Risk
<b>8.7</b>	<b>Case Studies</b>
8.7.1	- Case Study: Guide to Better Operational Resilience
8.7.2	- Case Study: Disaster – Do not do
<b>8.8</b>	<b>Best Practice Guidance</b>
8.8.1	- Take-away on Resiliency Risk Management
8.8.2	- BCP Checklist
8.8.3	- Best Practice of Operational Resilience in Financial Services
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9.2.2	- Performance Metrics of Operational Risk Culture
9.2.3	- How Operational Risk Culture Can Be Improved
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9.3.2	- Means of Operational Risk Training
9.3.3	- Contents of Operational Risk Training
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9.4.3	- Motive: Improve Operational Efficiency

9.4.4	- Motive: Overcome Operational Risk Challenges
9.4.5	- Sample Timeline of Communication and Engagement
9.4.6	- Tips for Effective Communication Strategy for Stakeholder Engagement
9.4.7	- Operational Risk Communication
9.4.8	- Operational Risk Engagement
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9.4.11	- Overview Of Deliverables By Stakeholders
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9.5.2	- Communication on Risk Can Be Aggregated and Presented in Simple and Concise Manner to Senior Management
9.5.3	- Communication on Interpretation of High-Level Operational Risk Results to Draw
9.5.4	- Communication on Meaningful Conclusions and Trends That Will Impact the Organisation
9.5.5	- Communication on Explanation of Operational Risk Measurement Tools and Methodologies in Simple and Concise
9.5.6	- Manner of Communication with All Business Units and Senior Management
9.5.7	- Managing Effective Operational Risk Reporting Process
9.5.8	- Content of Operational Risk Management Information System
9.5.9	- Sample of Operational Risk Report
9.5.10	- Sample of Operational Risk Dashboard
9.5.11	- Objectives of Operational Risk Communication
9.5.12	- Characteristics of Operational Risk Communication
9.5.13	- Topics of Operational Risk Communication (Examples)
9.5.14	- Key Points to Convey in Operational Risk Communication
9.5.15	- Usability of Operational Risk Communication
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<b>9.6</b>	<b>Oversight, Monitoring and Understanding of Relevant Operational Risk Management Processes Taken Up by Subject Matter Experts</b>
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<b>9.7</b>	<b>Case Studies</b>
9.7.1	- Case Study: Enforcement action against Société Générale by the SFC following the investigation of the HKMA
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10.2.10	- TCFD Recommendations
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10.2.12	- How Banks Addressing Climate Risk
10.2.13	- TCFD/ISSB Key Implementation Challenges
10.2.14	- Typology of Physical Risk
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10.2.17	- From Transition Risk to Financial Stability Risk
10.2.18	- Climate Financial Risk Assessment
10.2.19	- Example of Climate Risk Impact on Bank
10.2.20	- How Financial Firms Addressing Climate Risk
10.2.21	- Climate Risk Framework
10.2.22	- HKMA Climate Risk Initiative
10.2.23	- Four Biodiversity-related Financial Risks
10.2.24	- Operational Risk Assessment
10.2.25	- Climate Risk Stress Testing
10.2.26	- Operational Risk Scenarios (Example)
10.2.27	- Incorporating Climate Risk into Enterprise Risk
10.2.28	- HKMA Climate Risk Framework
10.2.29	- Governance: Key Takeaways
10.2.30	- Strategy: Key Takeaways
10.2.31	- Risk Management: Key Takeaways
10.2.32	- Disclosure: Key Takeaways
10.2.33	- HKMA Publishes Report On First Climate Risk Stress Test of The Hong Kong Banking Sector
10.2.34	- HKMA Guidelines for Banking Sector Climate Risk Stress Test
10.2.35	- Hong Kong Green Taxonomy
10.2.36	- HK's Green and Sustainable Finance Strategy
10.2.37	- Cross-agency Steering Group Announces Priorities To Further Strengthen Hong Kong's Sustainable Finance Ecosystem
<b>10.3</b>	<b>Digital Banking Services</b>
10.3.1	- Journey of Intelligent Process Automation
10.3.2	- Adversarial Risk
10.3.3	- Risk Assessment Framework
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10.3.5	- Third Party Risk Assessment Framework
10.3.6	- Recognition of Risk and Control
10.3.7	- Proactive Risk and Control Consciousness
10.3.8	- Call to Action
10.3.9	- Emerging Risk in Fintech

10.3.10	- Risk Questions to Answer
10.3.11	- Operational Risk in Retail Payments and Digital Wallets
10.3.12	- Operational Risk in Fintech Credit
10.3.13	- Operational Risk in Robo-advisors
10.3.14	- Operational Risk in DLT-based Wholesale Payment Systems
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10.3.16	- Operational Risk in AI and Machine Learning
10.3.17	- Overview of Digital Banking
10.3.18	- Trends of Digital Banking
10.3.19	- Risks and Mitigants of Digital Banking
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10.3.21	- Promotion of Mobile Point-of-Sale (POS) Terminals
<b>10.4</b>	<b>Case Studies</b>
10.4.1	- Case Study: The HKMA suspends Leung Wai Yu for three months
<b>10.5</b>	<b>Best Practice Guidance</b>
10.5.1	- HKMA "White Paper on Green and Sustainable Banking"
10.5.2	- HKMA Develops Two-year Roadmap To Promote RegTech Adoption
10.5.3	- HKMA FinTech 2025
<b>Chapter 11: The Future and Challenges Of Operational Risk Management</b>	
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<b>11.2</b>	<b>Competence Development</b>
11.2.1	- ORM Officer Professional Standard Summary of Core Competencies
11.2.2	- HK SFC Managers-In-Charge of Core Functions (MIC)
11.2.3	- HKMA Enhanced Competence Framework for Banking Practitioners
11.2.4	- Strengthening Individual Accountability
11.2.5	- Competencies of an Operational Risk Professional in Hong Kong
<b>11.3</b>	<b>Emerging and Proactive Risk Management</b>
11.3.1	- Performing Environmental Scanning
11.3.2	- Proactive ORM Monitoring
11.3.3	- Forces Driving Complexity, Increasing Risk
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11.3.7	- Develop Scenarios
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11.3.10	- Review Risk Development
11.3.11	- Effective Lines of Defense
11.3.12	- Predictive Risk Intelligence
11.3.13	- Embedding Operational Risk into Business
11.3.14	- Overview of Deliverables by Stakeholders
<b>11.4</b>	<b>Deployment of Artificial Intelligence</b>
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11.4.2	- Application of Technology in the Financial and Non-financial Risk Management
11.4.3	- Priority of RegTech and RiskTech
11.4.4	- GARP Survey on AI/RPA
11.4.5	- AI Adoption in Risk Management
11.4.6	- Risk Managers in Assessing AI Adoption or Non-adoption Risk
11.4.7	- Empower Risk and Compliance
11.4.8	- Trade Lifecycle Enabled by AI
11.4.9	- Digitisation of Risk Management
11.4.10	- CCAR and Stress Testing
11.4.11	- Risks and Opportunities: Questions on AI
11.4.12	- Using AI/Machine Learning in Operational Risk Management
11.4.13	- Key Points on AI Development Path
<b>11.5</b>	<b>Challenges and Solutions</b>
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11.5.2	- Overcoming The Operational Risk Challenges
11.5.3	- Opportunity Window
11.5.4	- Potential Pitfalls And Workable Solutions
11.5.5	- Integrating ORM Framework
11.5.6	- Engaging the Right People

11.5.7	- Adding Value
11.5.8	- Action Roadmap – Things That Are Usually Overlooked!
11.5.9	- What Does Success Look Like
11.5.10	- Key Elements to Embed Operational Risk
11.5.11	- Operational Risk Deliverables
11.5.12	- The Future of Operational Risk
11.5.13	- Defining Next-generation Operational-risk Management
11.5.14	- Develop Second-line Oversight To Ensure Operational Excellence And Business-process Resiliency
11.5.15	- Transform Risk Detection With Data And Real-time Analytics
11.5.16	- Develop Talent And The Tools To Manage Specialized Risk Types
11.5.17	- Bank Employees Drive Corporate Performance But Are Also A Potential Source Of Operational Risk
11.5.18	- Manage Human-factor Risks
11.5.19	- Targeted Analytics Tools
11.5.20	- Operational Risk Maturity Model
<b>11.6</b>	<b>Case Studies</b>
11.6.1	- Case Study: The Monetary Authority Suspends Chu Lai Kwan for Breaching the Code of Conduct and Internal Policy of Her Employer
<b>11.7</b>	<b>Best Practice Guidance</b>
11.7.1	- AI/Machine Learning in Operational Risk Use Cases
11.7.2	- Overcome ORM Challenges Toolkit
<b>Chapter 12: Integrated Case Studies And Best Practices</b>	
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12.2.2	- Punjab National Bank Letter of Commitment Fraud
12.2.3	- Aussie banks pay for underpaying staff
12.2.4	- Citibank Payment Error
<b>12.3</b>	<b>Best Practice Guidance</b>
12.3.1	- Interbank payment weaknesses
12.3.2	- Swiss tax evasion
12.3.3	- Data breaches top \$2bn since 2012

## Recommended Readings

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