FRM P2 | Summary of Changes | 2024

	No. of Chapters	No. of LOS	% of Total
Same	75	467	79%
New	18	120	20%
Changes	10	5	1%
Total	103	592	100%
Deleted	12	69	12%

New
Changes
Deleted

Reading No.	Reading Name	No. of LOS		
		New	Changes	Deleted
17	Fundamentals of Credit Risk	5		
18	Governance	5		
19	Credit Risk Management	10		
22	Credit Scoring and Rating	4		
24	Country Risk: Determinants, Measures, and Implications	7		
25	Estimating Default Probabilities	11	1	
26	Credit Value at Risk	5		
29	Credit Risk	5		
30	Credit Derivatives	8		
31	Derivatives	10		
35	Central Clearing	10		
94	Review of the Federal Reserve's Supervision and Regulation of Silicon Valley Bank	6		
95	The Credit Suisse CoCo Wipeout: Facts, Misperceptions, and Lessons for Financial Regulation	4		
96	Artificial Intelligence and Bank Supervision	4		
97	Financial Risk Management and Explainable	5		
98	Artificial Intelligence Risk Management Framework	5		
102	The Crypto Ecosystem: Key Elements and Risks	3		
103	Digital Resilience and Financial Stability	3		
7	Correlation Basics: Definitions, Applications, and Terminology	1		
20	Capital Structure in Banks		1	
21	Introduction to Credit Risk Modeling and Assessment	3		
27	Portfolio Credit Risk	2		
28	Structured Credit Risk	1		
38	The Evolution of Stress Testing Counterparty Exposures		1	
43	Risk Measurement and Assessment	1		1
44	Risk Mitigation	1	2	
52	Case Study: Third-Party Risk Management	1		
91	Hedge Funds			1
	Credit Risks and Credit Derivatives			6
	Rating Assignment Methodologies			10
	Spread Risk and Default Intensity Models			13
	The Credit Analyst			2
	The Credit Decision			4
	The Credit Transfer Markets — and Their Implications			5
	Understanding the Securitization of Subprime Mortgage			6
	Artificial Intelligence Risk & Governance			4
	Inflation: a look under the hood			4
	Machine Learning and AI for Risk Management			4
	The Blockchain Revolution: Decoding Digital Currencies			4
	The future monetary system			5

Changes in Reading

New
Change
Deleted

Subject	Reading No 2024	Reading Name	Details of Changes 24	Reading No 2023
Market Risk	1	Estimating Market Risk Measures: An Introduction and Overview		1
	2	Non-parametric Approaches		2
	3	Parametric Approaches (II): Extreme Value		3
	4	Backtesting VaR		4
	5	VaR Mapping		5
	6	Basel Committee on Banking Supervision		6
	7	Correlation Basics: Definitions, Applications, and Terminology	1 LOS New	7
	8	Empirical Properties of Correlation: How Do Correlations Behave in the Real World?		8
	9	Financial Correlation Modeling — Bottom-Up Approaches		9
	10	Empirical Approaches to Risk Metrics and Hedging		10
	11	The Science of Term Structure Models		11
	12	The Evolution of Short Rates and the Shape of the Term Structure		12
	13	The Art of Term Structure Models: Drift		13
	14	The Art of Term Structure Models: Volatility and Distribution		14
	15	Volatility Smiles		15
	16	Fundamental Review of the Trading Book		16
Credit Risk	17	Fundamentals of Credit Risk		-
	18	Governance		-
	19	Credit Risk Management		-
	20	Capital Structure in Banks	1 LOS Change	19
	21	Introduction to Credit Risk Modeling and Assessment	3 LOS New	-
	22	Credit Scoring and Rating		-
	23	Credit Scoring and Retail Credit Risk Management		31
	24	Country Risk: Determinants, Measures, and Implications		-
	25	Estimating Default Probabilities		-
	26	Credit Value at Risk		-
	27	Portfolio Credit Risk	2 LOS New	23
	28	Structured Credit Risk	1 LOS New 1 LOS Deleted	24
	29	Credit Risk		-
	30	Credit Derivatives		-
	31	Derivatives		-
	32	Counterparty Risk and Beyond		25
	33	Netting, Close-out and Related Aspects		26
	34	Margin (Collateral) and Settlement		27
	35	Central Clearing		-
	36	Future Value and Exposure		28
	37	CVA		29
	38	The Evolution of Stress Testing Counterparty Exposures	1 LOS Change	30
	39	An Introduction to Securitisation		33
		The Credit Decision		17
		The Credit Analyst		18
		Rating Assignment Methodologies		20
		Credit Risks and Credit Derivatives		21
		Spread Risk and Default Intensity Models		22
		The Credit Transfer Markets — and Their Implications		32
		Understanding the Securitization of Subprime Mortgage Credit		34
Operational Risk	40	Introduction to Operational Risk and Resilience		35
	41	Risk Governance		36
	42	Risk Identification		37

Subject	Reading No 2024	Reading Name	Details of Changes 24	Reading No 2023
Operational Risk	43	Risk Measurement and Assessment	1 LOS New 1 LOS Deleted	38
	44	Risk Mitigation	1 LOS New 2 LOS Changes	39
	45	Risk Reporting		40
	46	Integrated Risk Management		41
	47	Cyber-resilience: Range of practices		42
	48	Case Study: Cyberthreats and Information Security Risks		43
	49	Sound Management of Risks related to Money Laundering and Financing of Terrorism		44
	50	Case Study: Financial Crime and Fraud		45
	51	Guidance on Managing Outsourcing Risk		46
	52	Case Study: Third-Party Risk Management	1 LOS New	47
	53	Case Study: Investor Protection and Compliance Risks in Investment Activities		48
	54	Supervisory Guidance on Model Risk Management		49
	55	Case Study: Model Risk and Model Validation		50
	56	Stress Testing Banks		51
	57	Risk Capital Attribution and Risk-Adjusted Performance Measurement		52
	58	Range of practices and issues in economic capital frameworks		53
	59	Capital Planning at Large Bank Holding Companies: Supervisory Expectations and Range of Current Practice		54
	60	Capital Regulation Before the Global Financial Crisis		55
	61	Solvency, Liquidity and Other Regulation After the Global Financial Crisis		56
	62	High-level summary of Basel III reforms		57
	63	Basel III: Finalising post-crisis reforms		58
Liquidity Risk	64	Liquidity Risk		59
	65	Liquidity and Leverage		60
	66	Early Warning Indicators		61
	67	The Investment Function in Financial-Services Management		62
	68	Liquidity and Reserves Management: Strategies and Policies		63
	69	Intraday Liquidity Risk Management		64
	70	Monitoring Liquidity		65
	71	The Failure Mechanics of Dealer Banks		66
	72	Liquidity Stress Testing		67
	73	Liquidity Risk Reporting and Stress Testing		68
	74	Contingency Funding Planning		69
	75	Managing and Pricing Deposit Services		70
	76	Managing Non-deposit Liabilities		71
	77	Repurchase Agreements and Financing		72
	78	Liquidity Transfer Pricing: A Guide to Better Practice		73
	79	The US Dollar Shortage in Global Banking and the International Policy Response		74
	80	Covered Interest Parity Lost: Understanding the Cross-Currency Basis		75
	81	Risk Management for Changing Interest Rates: Asset-Liability Management and Duration Techniques		76
	82	Illiquid Assets		77
Investment Risk	83	Factor Theory		78
	84	Factors		79
	85	Alpha (and the Low-Risk Anomaly)		80
	86	Portfolio Construction		81
	87	Portfolio Risk: Analytical Methods		82
	88	VaR and Risk Budgeting in Investment Management		83
	89	Risk Monitoring and Performance Measurement		84
	90	Portfolio Performance Evaluation		85
	91	Hedge Funds	1 LOS Deleted	86
	92	Performing Due Diligence on Specific Managers and Funds		87
	93	Predicting Fraud by Investment Managers		88

Subject	Reading No 2024	Reading Name	Details of Changes 24	Reading No 2023
Current Issues	94	Review of the Federal Reserve's Supervision and Regulation of Silicon Valley Bank		-
	95	The Credit Suisse CoCo Wipeout: Facts, Misperceptions, and Lessons for Financial Regulation		-
	96	Artificial Intelligence and Bank Supervision		-
	97	Financial Risk Management and Explainable, Trustworthy, Responsible AI		-
	98	Artificial Intelligence Risk Management Framework		-
	99	Climate-related risk drivers and their transmission channels		91
	100	Climate-related financial risks – measurement methodologies		92
	101	Principles for the effective management and supervision of climate-related financial risks		93
	102	The Crypto Ecosystem: Key Elements and Risks		-
	103	Digital Resilience and Financial Stability		-
		Machine Learning and AI for Risk Management		89
		Artificial Intelligence Risk & Governance		90
		Inflation: a look under the hood		94
		The Blockchain Revolution: Decoding Digital Currencies		95
		The future monetary system		96

Changes in LOS

New
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Reading No.	Reading Name	Learning Outcome	2024 LOS	2023 LOS	Changes
		Market Risk			
1	Estimating Market Risk Measures: An Introduction and Overview	Estimate VaR using a historical simulation approach.	1a	1a	
		Estimate VaR using a parametric approach for both normal and lognormal return distributions.	1b	1b	
		Estimate the expected shortfall given profit and loss (P&L) or return data	1c	1c	
		Estimate risk measures by estimating quantiles.	1d	1d	
		Evaluate estimators of risk measures by estimating their standard errors.	1e	1e	
		Interpret quantile-quantile (QQ) plots to identify the characteristics of a distribution.	1f	1f	
2	Non-parametric Approaches	Apply the bootstrap historical simulation approach to estimate coherent risk measures.	2a	2a	
		Describe historical simulation using non-parametric density estimation.	2b	2b	
		Compare and contrast the age-weighted, the volatility-weighted, the correlation-weighted, and the filtered historical simulation approaches	2c	2c	
		Identify advantages and disadvantages of non-parametric estimation methods.	2d	2d	
3	Parametric Approaches (II): Extreme Value	Explain the importance and challenges of extreme values in risk	3a	3a	
		Describe extreme value theory (EVT) and its use in risk management.	3b	3b	
		Describe the peaks-over-threshold (POT) approach	3c	3c	
		Compare and contrast the generalized extreme value (GEV) and POT approaches to estimating extreme risks	3d	3d	
		Discuss the application of the generalized Pareto (GP) distribution in the POT approach.	3e	3e	
		Explain the multivariate EVT for risk management.	3f	3f	
4	Backtesting VaR	Describe backtesting and exceptions and explain the importance of backtesting VaR models.	4a	4a	
		Explain the significant difficulties in backtesting a VaR model.	4b	4b	
		Verify a model based on exceptions or failure rates.	4c	4c	
		Identify and describe Type I and Type II errors in the context of a backtesting process.	4d	4d	
		Explain the need to consider conditional coverage in the backtesting framework.	4e	4e	
		Describe the Basel rules for backtesting.	4f	4f	
5	VaR Mapping	Explain the principles underlying VaR mapping and describe the mapping process.	5a	5a	
		Explain and demonstrate how the mapping process captures general and specific risks.	5b	5b	
		Differentiate among the three methods for mapping portfolios of fixed-income securities	5c	5c	
		Summarize how to map a fixed-income portfolio into positions of standard instruments	5d	5d	
		Describe how mapping of risk factors can support stress testing.	5e	5e	
		Explain how VaR can be computed and used relative to a performance benchmark.	5f	5f	
		Describe the method of mapping forwards, forward rate agreements, interest rate swaps, and options.	5g	5g	
6	Basel Committee on Banking Supervision	Explain the following lessons on VaR implementation: time horizon over which VaR is estimated, the recognition of time-varying volatility in VaR risk factors, and VaR backtesting	6a	6a	
		Describe exogenous and endogenous liquidity risk and explain how they might be integrated into VaR models.	6b	6b	

Reading No.	Reading Name	Learning Outcome	2024 LOS	2023 LOS	Changes
6	Basel Committee on Banking Supervision	Compare VaR, expected shortfall, and other relevant risk measures.	6c	6c	
		Compare unified and compartmentalized risk measurement.	6d	6d	
		Compare the results of research on top-down and bottom-up risk aggregation methods.	6e	6e	
		Describe the relationship between leverage, market value of asset, and VaR within an active balance sheet management framework.	6f	6f	
7	Correlation Basics: Definitions, Applications, and Terminology	Describe financial correlation risk and the areas in which it appears in	7a	7a	
		Explain how correlation contributed to the global financial crisis of 2007-	7b	7b	
		Describe how correlation impacts the price of quanto options as well as other multi-asset exotic options	7c		
		Describe the structure, uses, and payoffs of a correlation swap.	7d	7c	
		Estimate the impact of different correlations between assets in the trading book on the VaR capital charge.	7e	7d	
		Explain the role of correlation risk in market risk and credit risk.	7f	7e	
		Relate correlation risk to systemic and concentration risk.	7g	7f	
8	Empirical Properties of Correlation: How Do Correlations Behave in the	Describe how equity correlations and correlation volatilities behave throughout various economic states.	8a	8a	
		Calculate a mean reversion rate using standard regression and calculate the corresponding autocorrelation.	8b	8b	
		Identify the best-fit distribution for equity, bond, and default correlations.	8c	8c	
9	Financial Correlation Modeling — Bottom-Up Approaches	Explain the purpose of copula functions and how they are applied in finance.	9a	9a	
		Describe the Gaussian copula and explain how to use it to derive the joint probability of default of two assets.	9b	9b	
		Summarize the process of finding the default time of an asset correlated to all other assets in a portfolio using the Gaussian copula.	9c	9c	
10	Empirical Approaches to Risk Metrics and Hedging	Explain the drawbacks to using a DV01-neutral hedge for a bond position	10a	10a	
		Describe a regression hedge and explain how it can improve a standard DV01-neutral hedge.	10b	10b	
		Calculate the regression hedge adjustment factor, beta	10c	10c	
		Calculate the face value of an offsetting position needed to carry out a regression hedge.	10d	10d	
		Calculate the face value of multiple offsetting swap positions needed to carry out a two-variable regression hedge.	10e	10e	
		Compare and contrast level and change regressions.	10f	10f	
		Describe principal component analysis and explain how it is applied to constructing a hedging portfolio.	10g	10g	
11	The Science of Term Structure Models	Calculate the expected discounted value of a zero-coupon security using a binomial tree	11a	11a	
		Construct and apply an arbitrage argument to price a call option on a zero-coupon security using replicating portfolios.	11b	11b	
		Define risk-neutral pricing and apply it to option pricing.	11c	11c	
		Distinguish between true and risk-neutral probabilities and apply this difference to interest rate drift	11d	11d	
		Explain how the principles of arbitrage pricing of derivatives on fixed-income securities can be extended over multiple periods	11e	11e	
		Define option-adjusted spread (OAS) and apply it to security pricing.	11f	11f	
		Describe the rationale behind the use of recombining trees in option pricing.	11g	11g	
		Calculate the value of a constant-maturity Treasury swap, given an interest rate tree and the risk-neutral probabilities	11h	11h	
		Evaluate the advantages and disadvantages of reducing the size of the time steps on the pricing of derivatives on fixed-income securities.	11i	11i	
		Evaluate the appropriateness of the Black-Scholes-Merton model when valuing derivatives on fixed-income securities	11j	11j	

Reading No.	Reading Name	Learning Outcome	2024 LOS	2023 LOS	Changes
12	The Evolution of Short Rates and the Shape of the Term Structure	Explain the role of interest rate expectations in determining the shape of the term structure	12a	12a	
		Apply a risk-neutral interest rate tree to assess the effect of volatility on the shape of the term structure.	12b	12b	
		Estimate the convexity effect using Jensen's inequality.	12c	12c	
		Evaluate the impact of changes in maturity, yield, and volatility on the convexity of a security	12d	12d	
		Calculate the price and return of a zero-coupon bond incorporating a risk premium.	12e	12e	
13	The Art of Term Structure Models: Drift	Construct and describe the effectiveness of a short-term interest rate tree assuming normally distributed rates, both with and without drift.	13a	13a	
		Calculate the short-term rate change and standard deviation of the rate change using a model with normally distributed rates and no drift.	13b	13b	
		Describe methods for addressing the possibility of negative short-term rates in term structure models.	13c	13c	
		Construct a short-term rate tree under the Ho-Lee Model with time-dependent drift.	13d	13d	
		Describe uses and benefits of the arbitrage-free models and assess the issue of fitting models to market prices.	13e	13e	
		Describe the process of constructing a simple and recombining tree for a short-term rate under the Vasicek Model with mean reversion.	13f	13f	
		Calculate the Vasicek Model rate change, standard deviation of the rate change, expected rate in T years, and half-life.	13g	13g	
		Describe the effectiveness of the Vasicek Model.	13h	13h	
14	The Art of Term Structure Models: Volatility and Distribution	Describe the short-term rate process under a model with time-dependent volatility	14a	14a	
		Calculate the short-term rate change and determine the behavior of the standard deviation of the rate change using a model with time-dependent volatility.	14b	14b	
		Assess the efficacy of time-dependent volatility models.	14c	14c	
		Describe the short-term rate process under the Cox-Ingersoll-Ross (CIR) and lognormal models.	14d	14d	
		Calculate the short-term rate change and describe the basis point volatility using the CIR and lognormal models.	14e	14e	
		Describe lognormal models with deterministic drift and mean reversion.	14f	14f	
15	Volatility Smiles	Describe a volatility smile and volatility skew.	15a	15a	
		Explain the implications of put-call parity on the implied volatility of call and put options.	15b	15b	
		Compare the shape of the volatility smile (or skew) to the shape of the implied distribution of the underlying asset price and to the pricing of options on the underlying asset	15c	15c	
		Describe characteristics of foreign exchange rate distributions and their implications on option prices and implied volatility	15d	15d	
		Describe the volatility smile for equity options and foreign currency options and provide possible explanations for its shape	15e	15e	
		Describe alternative ways of characterizing the volatility smile.	15f	15f	
		Describe volatility term structures and volatility surfaces and how they may be used to price options.	15g	15g	
		Explain the impact of the volatility smile on the calculation of an option's Greek letter risk measures.	15h	15h	
		Explain the impact of a single asset price jump on a volatility smile.	15i	15i	
16	Fundamental Review of the Trading Book	Describe the changes to the Basel framework for calculating market risk capital under the Fundamental Review of the Trading Book (FRTB) and the motivations for these changes.	16a	16a	

Reading No.	Reading Name	Learning Outcome	2024 LOS	2023 LOS	Changes
16	Fundamental Review of the Trading Book	Compare the various liquidity horizons proposed by the FRTB for different asset classes and explain how a bank can calculate its expected shortfall using the various horizons.	16b	16b	
		Explain the FRTB revisions to Basel regulations in the following areas: - Classification of positions in the trading book compared to the banking book - Backtesting, profit and loss attribution, credit risk, and securitizations	16c	16c	
Credit Risk					
17	Fundamentals of Credit Risk	Define credit risk and explain how it arises using examples	17a		
		Explain the distinctions between insolvency, default, and bankruptcy	17b		
		Identify and describe transactions that generate credit risk	17c		
		Describe the entities that are exposed to credit risk and explain circumstances under which exposure occurs	17d		
		Discuss the motivations for managing or taking on credit risk	17e		
18	Governance	Define risk management responsibilities in an organization and explain the three lines of defense framework for effective risk management and control	18a		
		Explain the processes that lead to risk taking including credit origination, credit risk assessment, and credit approval processes	18b		
		Discuss the following key principles underlying best practice for the governance system of credit risk: Guidelines, Skills, Limits, and Oversight	18c		
		Describe the most common parameters of a credit-sensitive transaction	18d		
		Describe the roles of the credit committee in an organization	18e		
19	Credit Risk Management	Describe key elements of an effective lending or financing policy	19a		
		Explain the importance and challenges of setting exposure and concentration limits	19b		
		Describe the scope and allocation processes of a bank's credit facility and explain bank-specific policies and actions to reduce credit risk	19c		
		Discuss factors that should be considered during the credit asset classification process	19d		
		Describe and explain loan loss provisions and loan loss reserves	19e		
		Identify and explain the components of expected loss and distinguish between expected loss and unexpected loss	19f		
		Explain the requirements for estimating expected loss under IFRS 9	19g		
		Describe a workout procedure for loss assets and compare the following two approaches used to manage loss assets: retaining loss assets and writing off loss assets	19h		
		Explain the components of credit risk analysis	19i		
		Explain the components of credit risk management capacity, and outline key questions that the board of directors of a bank should ask	19j		
20	Capital Structure in Banks	Evaluate a bank's economic capital relative to its level of credit risk.	20a	19a	
		Identify and describe important factors used to calculate economic capital for credit risk: probability of default, exposure, and loss rate	20b	19b	
		Define and calculate expected loss (EL).	20c	19c	
		Define and calculate unexpected loss (UL).	20d	19d	
		Estimate the variance of default probability assuming a binomial distribution	20e	19e	
		Calculate UL for a credit asset portfolio and the UL contribution of each asset under various scenarios of portfolio composition, asset characteristics and size	20f	19f	
		Describe how economic capital is derived.	20g	19g	
		Explain how the credit loss distribution is modeled.	20h	19h	
		Describe challenges to quantifying credit risk.	20i	19i	
21	Introduction to Credit Risk Modeling and Assessment	Explain the capital adequacy, asset quality, management, earnings, and liquidity (CAMEL) system used for evaluating the financial condition of a bank.	21a	18c	

Reading No.	Reading Name	Learning Outcome	2024 LOS	2023 LOS	Changes
21	Introduction to Credit Risk Modeling and Assessment	Describe quantitative measurements and factors of credit risk, including probability of default, loss given default, exposure at default, expected loss, and time horizon.	21b	17f	
		Estimate capital adequacy ratio of a financial institution	21c		
		Describe the judgmental approaches, empirical models, and financial models to predict default	21d		
		Apply the Merton model to calculate default probability and the distance to default and describe the limitations of using the Merton model.	21e	20h	
		Compare and contrast different approaches to credit risk modeling, such as those related to the Merton model, Credit Risk Plus (CreditRisk+), CreditMetrics, and the Moody's-KMV model	21f	21e	
		Apply risk-adjusted return on capital (RAROC) to measure the performance of a loan	21g		
22	Credit Scoring and Rating	Compare the credit scoring system to the credit rating system in assessing credit quality and describe the different types of each system	22a		
		Distinguish between through-the-cycle and point-in-time credit rating systems	22b		
		Describe the process for developing credit risk scoring and rating models	22c		
		Describe rating agencies' assignment methodologies for issue and issuer ratings, and identify the main criticisms of the credit rating agencies' ratings	22d		
23	Credit Scoring and Retail Credit Risk Management	Analyze the credit risks and other risks generated by retail banking	23a	31a	
		Explain the differences between retail credit risk and corporate credit risk.	23b	31b	
		Discuss the "dark side" of retail credit risk and the measures that attempt to address the problem.	23c	31c	
		Define and describe credit risk scoring model types, key variables, and applications.	23d	31d	
		Discuss the key variables in a mortgage credit assessment and describe the use of cutoff scores, default rates, and loss rates in a credit scoring model.	23e	31e	
		Discuss the measurement and monitoring of a scorecard performance including the use of cumulative accuracy profile (CAP) and the accuracy ratio (AR) techniques.	23f	31f	
		Describe the customer relationship cycle and discuss the trade-off between creditworthiness and profitability	23g	31g	
		Discuss the benefits of risk-based pricing of financial services.	23h	31h	
24	Country Risk: Determinants, Measures, and Implications	Identify and explain the different sources of country risk	24a		
		Evaluate the methods for measuring country risk and discuss the limitations of using those methods	24b		
		Compare and contrast foreign currency defaults and local currency defaults	24c		
		Explain the consequences of a country's default	24d		
		Discuss measures of sovereign default risk and describe components of a sovereign rating	24e		
		Describe the shortcomings of the sovereign rating systems of rating agencies	24f		
		Compare the use of credit ratings, market-based credit default spreads, and CDS spreads in predicting default	24g		
25	Estimating Default Probabilities	Compare agencies' ratings to internal credit rating systems	25a		
		Describe linear discriminant analysis (LDA), define the Altman's Z-score and its usage, and apply LDA to classify a sample of firms by credit quality	25b	20i	
		Describe the relationship between borrower rating and probability of default.	25c	20e	

Reading No.	Reading Name	Learning Outcome	2024 LOS	2023 LOS	Changes
25	Estimating Default Probabilities	Describe a rating migration matrix and calculate the probability of default, cumulative probability of default, and marginal probability of default	25d	20c	
		Define the hazard rate and use it to define probability functions for default time as well as to calculate conditional and unconditional default probabilities	25e		
		Describe recovery rates and their dependencies on default rates	25f		
		Define a credit default swap (CDS) and explain its mechanics including the obligations of both the default protection buyer and the default protection seller	25g		
		Describe CDS spreads and explain how CDS spreads can be used to estimate hazard rates	25h		
		Define and explain CDS-bond basis	25i		
		Compare default probabilities calculated from historical data with those calculated from credit yield spreads	25j		
		Describe the difference between real-world and risk-neutral default probabilities and determine which one to use in the analysis of credit risk	25k		
		Using the Merton model, calculate the value of a firm's debt and equity, the volatility of firm value, and the volatility of firm equity	25l		
		Using the Merton model, calculate distance to default and default probability	25m		
		Assess the quality of the default probabilities produced by the Merton model, the Moody's KMV model, and the Kamakura model	25n		
26	Credit Value at Risk	Compare market risk value at risk (VaR) with credit VaR in terms of definition, time horizon, and tools for measuring them	26a		
		Define and calculate credit VaR.	26b	23e	
		Describe the use of rating transition matrices for calculating credit VaR	26c		
		Describe the application of the Vasicek model to estimate capital requirements under the Basel II internal-ratings-based (IRB) approach	26d		
		Interpret the Vasicek's model, Credit Risk Plus (CreditRisk+) model, and the CreditMetrics ways of estimating the probability distribution of losses arising from defaults as well as modeling the default correlation	26e		
		Define credit spread risk and assess its impact on calculating credit VaR	26f		
27	Portfolio Credit Risk	Define and calculate default correlation for credit portfolios.	27a	23a	
		Identify drawbacks in using the correlation-based credit portfolio framework.	27b	23b	
		Assess the impact of correlation on a credit portfolio and its Credit VaR.	27c	23c	
		Describe the use of a single factor model to measure portfolio credit risk, including the impact of correlation	27d	23d	
		Define beta and calculate the asset return correlation of any pair of firms using the single factor model	27e		
		Using the single factor model, estimate the probability of a joint default of any pair of credits and the default correlation between any pair of credits	27f		
		Describe how Credit VaR can be calculated using a simulation of joint defaults.	27g	23f	
		Assess the effect of granularity on Credit VaR	27h	23g	
28	Structured Credit Risk	Describe common types of structured products.	28a	24a	
		Describe tranching and the distribution of credit losses in a securitization.	28a	24b	
		Describe a waterfall structure in a securitization.	28c	24c	
		Identify the key participants in the securitization process and describe conflicts of interest that can arise in the process	28d	24d	
		Compute and evaluate one or two iterations of interim cashflows in a three-tiered securitization structure.	28e	24e	

Reading No.	Reading Name	Learning Outcome	2024 LOS	2023 LOS	Changes
28	Structured Credit Risk	Describe the treatment of excess spread in a securitization structure and estimate the value of the overcollateralization account at the end of each	28f	24f	
		Explain the tests on the excess spread that a custodian must go through at the end of each year to determine the cash flow to the overcollateralization account and to the equity noteholders	28g		
		Describe a simulation approach to calculating credit losses for different tranches in a securitization.	28h	24g	
		Explain how the default probabilities and default correlations affect the credit risk in a securitization.	28i	24h	
		Explain how default sensitivities for tranches are measured.	28j	24i	
		Describe risk factors that impact structured products.	28k	24j	
		Define implied correlation and describe how it can be measured.	28l	24k	
		Identify the motivations for using structured credit products.	28m	24l	
29	Credit Risk	Assess the credit risks of derivatives.	29a	21f	
		Define credit valuation adjustment (CVA) and debt valuation adjustment (DVA)	29b		
		Calculate the probability of default using credit spreads	29c		
		Describe, compare, and contrast various credit risk mitigants and their role in credit analysis.	29d		
		Describe the significance of estimating default correlation for credit portfolios and distinguish between reduced form and structural default correlation models	29e		
		Describe the Gaussian copula model for time to default and calculate the probability of default using the one-factor Gaussian copula model	29f		
		Describe how to estimate credit VaR using the Gaussian copula and the CreditMetrics approach	29g		
30	Credit Derivatives	Describe a credit derivative, credit default swap (CDS), total return swap, and collateralized debt obligation (CDO)	30a		
		Explain how to account for credit risk exposure in valuing a CDS	30b		
		Identify the default probabilities used to value a CDS	30c		
		Evaluate the use of credit indices and fixed coupons in pricing CDS transactions	30d		
		Define CDS forwards and CDS options	30e		
		Describe the process of valuing a synthetic CDO using the spread payments approach and the Gaussian copula model of time to default approach	30f		
		Define the two measures of implied correlation: compound (tranche) correlation and base correlation	30g		
		Discuss alternative approaches used to estimate default correlation	30h		
31	Derivatives	Define derivatives and explain how derivative transactions create counterparty credit risk	31a		
		Compare and contrast exchange-traded derivatives and over-the-counter (OTC) derivatives, and discuss the features of their markets	31b		
		Describe the process of clearing a derivative transaction	31c		
		Identify the participants and describe the use of collateralization in the derivatives market	31d		
		Define the International Swaps and Derivatives Association (ISDA) Master Agreement, the risk-mitigating features it provides, and the default events it covers	31e		
		Describe the features and use of credit derivatives and discuss potential risks they may create	31f		
		Describe central clearing of OTC derivatives and discuss the roles, mandate, advantages, and disadvantages of the central counterparty (CCP)	31g		
		Explain the margin requirements for both centrally-cleared and non-centrally-cleared derivatives	31h		

Reading No.	Reading Name	Learning Outcome	2024 LOS	2023 LOS	Changes
31	Derivatives	Define special purpose vehicles (SPVs), derivatives product companies (DPCs), monolines, and credit derivatives product companies (CDPCs) and describe the limitations of using them as risk mitigating methods	31i		
		Describe the approaches used and the challenges faced in modeling derivatives risk	31j		
32	Counterparty Risk and Beyond	Describe counterparty risk and differentiate it from lending risk.	32a	25a	
		Describe transactions that carry counterparty risk and explain how counterparty risk can arise in each transaction.	32b	25b	
		Identify and describe institutions that take on significant counterparty risk.	32c	25c	
		Describe credit exposure, credit migration, recovery, mark-to-market, replacement cost, default probability, loss given default, and the recovery rate.	32d	25d	
		Describe credit value adjustment (CVA) and compare the use of CVA and credit limits in evaluating and mitigating counterparty risk.	32e	25e	
		Identify and describe the different ways institutions can quantify, manage, and mitigate counterparty risk.	32f	25f	
		Identify and explain the costs of an OTC derivative	32g	25g	
		Explain the components of the X-Value Adjustment (xVA) term.	32h	25h	
33	Netting, Close-out and Related Aspects	Explain the purpose of an International Swaps and Derivatives Association (ISDA) master agreement.	33a	26a	
		Summarize netting and close-out procedures (including multilateral netting), explain their advantages and disadvantages, and describe how they fit into the framework of the ISDA master agreement.	33b	26b	
		Describe the effectiveness of netting in reducing credit exposure under various scenarios.	33c	26c	
		Describe the mechanics of termination provisions and trade compressions and explain their advantages and disadvantages.	33d	26d	
		Provide examples of trade compression of derivative positions, calculate net notional exposure amount, and identify the party holding the net contract position in a trade compression.	33e	26e	
		Identify and describe termination events and discuss their potential effects on parties to a transaction.	33f	26f	
34	Margin (Collateral) and Settlement	Describe the rationale for collateral management.	34a	27a	
		Describe the terms of a collateral agreement and features of a credit support annex (CSA) within the ISDA Master Agreement including threshold, initial margin, minimum transfer amount and rounding, haircuts, credit quality, and credit support amount.	34b	27b	
		Calculate the credit support amount (margin) under various scenarios.	34c	27c	
		Describe the role of a valuation agent.	34d	27d	
		Describe the mechanics of collateral and the types of collateral that are typically used.	34e	27e	
		Explain the process for the reconciliation of collateral disputes.	34f	27f	
		Explain the features of a collateralization agreement.	34g	27g	
		Differentiate between a two-way and one-way CSA agreement and describe how collateral parameters can be linked to credit quality.	34h	27h	
		Explain aspects of collateral including funding, rehypothecation, and segregation.	34i	27i	
		Explain how market risk, operational risk, and liquidity risk (including funding liquidity risk) can arise through collateralization.	34j	27j	
		Describe the various regulatory capital requirements.	34k	27k	
35	Central Clearing	Define a central counterparty (CCP) and describe the mechanics of central clearing	35a		
		Explain the concept of novation under central clearing	35b		
		Define netting, multilateral offset, and compression and provide examples of each	35c		
		Describe the application and estimation of margin and default funds under central clearing	35d		

Reading No.	Reading Name	Learning Outcome	2024 LOS	2023 LOS	Changes
35	Central Clearing	Discuss the risks faced by a CCP and the ways it manages its exposures	35e		
		Provide examples of a loss waterfall	35f		
		Explain the different methods of managing the default of one or more members of a CCP	35g		
		Compare bilateral and central clearing	35h		
		Compare initial margin and default fund requirements for clearing members in relation to loss coverage, cost of clearing, and moral hazard	35i		
		Describe the advantages and disadvantages of central clearing	35j		
36	Future Value and Exposure	Describe and calculate the following metrics for credit exposure: expected mark-to-market, expected exposure, potential future exposure, expected positive exposure and negative exposure, effective expected positive exposure, and maximum exposure	36a	28a	
		Compare the characterization of credit exposure to VaR methods and describe additional considerations used in the determination of credit exposure	36b	28b	
		Identify factors that affect the calculation of the credit exposure profile and summarize the impact of collateral on exposure.	36c	28c	
		Identify typical credit exposure profiles for various derivative contracts and combination profiles.	36d	28d	
		Explain how payment frequencies and exercise dates affect the exposure profile of various securities.	36e	28e	
		Explain the general impact of aggregation on exposure, and the impact of aggregation on exposure when there is correlation between transaction values.	36f	28f	
		Describe the differences between funding exposure and credit exposure.	36g	28g	
		Explain the impact of collateralization on exposure and assess the risk associated with the remargining period, threshold, and minimum transfer amount.	36h	28h	
		Assess the impact of collateral on counterparty risk and funding, with and without segregation or rehypothecation.	36i	28i	
37	CVA	Explain the motivation for and the challenges of pricing counterparty risk.	37a	29a	
		Describe credit value adjustment (CVA).	37b	29b	
		Calculate CVA and CVA as a spread with no wrong-way risk, netting, or collateralization.	37c	29c	
		Evaluate the impact of changes in the credit spread and recovery rate assumptions on CVA	37d	29d	
		Describe debt value adjustment (DVA) and bilateral CVA (BCVA).	37e	29e	
		Explain the distinctions between unilateral CVA (UCVA) and BCVA, and between unilateral DVA (UDVA) and BCVA.	37f	29f	
		Calculate DVA, BCVA, and BCVA as a spread.	37g	29g	
		Explain how netting can be incorporated into the CVA calculation.	37h	29h	
		Define and calculate incremental CVA and marginal CVA and explain how to convert CVA into a running spread	37i	29i	
		Explain the impact of incorporating collateralization into the CVA calculation, including the impact of margin period of risk, thresholds, and initial margins.	37j	29j	
		Describe wrong-way risk and contrast it with right-way risk.	37k	29k	
		Identify examples of wrong-way risk and examples of right-way risk.	37l	29l	
		Discuss the impact of collateral on wrong-way risk.	37m	29m	
		Identify examples of wrong-way collateral.	37n	29n	
		Discuss the impact of wrong-way risk on central counterparties (CCPs).	37o	29o	
		Describe the various wrong-way modeling methods including hazard rate approaches, structural approaches, parametric approaches, and jump approaches.	37p	29p	
		Explain the implications of central clearing on wrong-way risk.	37q	29q	

Reading No.	Reading Name	Learning Outcome	2024 LOS	2023 LOS	Changes
38	The Evolution of Stress Testing Counterparty Exposures	Differentiate among current exposure, peak exposure, expected exposure, and expected positive exposure.	38a	30a	
		Explain the treatment of counterparty credit risk (CCR) both as a credit risk and as a market risk and describe its implications for trading activities and risk management for a financial institution.	38b	30b	
		Describe a stress test that can be performed on a loan portfolio and on a derivative portfolio	38c	30c	
		Differentiate between stressed expected loss and stress loss of a credit portfolio, and calculate the stress loss on a loan portfolio and the stress loss on a derivative portfolio	38d	30d	
		Describe a stress test that can be performed on CVA.	38e	30e	
		Calculate the stressed CVA and the stress loss on CVA	38f	30f	
		Calculate the DVA and explain how stressing DVA enters into aggregating stress tests of CCR.	38g	30g	
		Describe the common pitfalls in stress testing CCR.	38h	30h	
39	An Introduction to Securitisation	Define securitization, describe the securitization process, and explain the roles of participants in the process	39a	33a	
		Explain the terms over-collateralization, first-loss piece, equity piece, and cash waterfall within the securitization process	39b	33b	
		Analyze the differences in the mechanics of issuing securitized products using a trust versus a special purpose vehicle (SPV) and distinguish between the three main SPV structures: amortizing, revolving, and master trust.	39c	33c	
		Explain the reasons for and the benefits of undertaking securitization.	39d	33d	
		Describe and assess the various types of credit enhancements.	39e	33e	
		Explain the various performance analysis tools for securitized structures and identify the asset classes they are most applicable to.	39f	33f	
		Define and calculate the delinquency ratio, default ratio, monthly payment rate (MPR), debt service coverage ratio (DSCR), the weighted average coupon (WAC), the weighted average maturity (WAM), and the weighted average life (WAL) for relevant securitized structures.	39g	33g	
		Explain the prepayment forecasting methodologies and calculate the constant prepayment rate (CPR) and the Public Securities Association (PSA) rate.	39h	33h	
	The Credit Decision	Explain the components of credit risk evaluation		17b	
		Compare and contrast quantitative and qualitative techniques of credit risk evaluation		17d	
		Compare the credit analysis of consumers, corporations, financial institutions, and sovereigns		17e	
		Compare bank failure and bank insolvency		17g	
	The Credit Analyst	Describe the quantitative, qualitative, and research skills a banking credit analyst is expected to have		18a	
		Assess the quality of various sources of information used by a credit analyst		18b	
	Rating Assignment Methodologies	Explain the key features of a good rating system		20a	
		Describe the experts-based approaches, statistical-based models, and numerical approaches to predicting default		20b	
		Describe rating agencies' assignment methodologies for issue and issuer ratings		20d	
		Compare agencies' ratings to internal experts-based rating systems		20f	
		Distinguish between the structural approaches and the reduced-form approaches to predicting default		20g	
		Describe the application of a logistic regression model to estimate default probability		20j	
		Define and interpret cluster analysis and principal component analysis		20k	
		Describe the use of a cash flow simulation model in assigning ratings and default probabilities and explain the limitations of the model		20l	

Reading No.	Reading Name	Learning Outcome	2024 LOS	2023 LOS	Changes
	Rating Assignment Methodologies	Describe the application of heuristic approaches, numeric approaches, and artificial neural networks in modeling default risk and define their strengths and weaknesses		20m	
		Describe the role and management of qualitative information in assessing probability of default		20n	
	Credit Risks and Credit Derivatives	Using the Merton model, calculate the value of a firm's debt and equity and the volatility of firm value		21a	
		Explain the relationship between credit spreads, time to maturity, and interest rates and calculate credit spread		21b	
		Explain the differences between valuing senior and subordinated debt using a contingent claim approach		21c	
		Explain, from a contingent claim perspective, the impact of stochastic interest rates on the valuation of risky bonds, equity, and the risk of default		21d	
		Describe a credit derivative, credit default swap (CDS), and total return swap		21g	
		Explain how to account for credit risk exposure in valuing a swap		21h	
	Spread Risk and Default Intensity Models	Compare the different ways of representing credit spreads		22a	
		Compute one credit spread given others when possible		22b	
		Define and compute the Spread '01		22c	
		Explain how default risk for a single company can be modeled as a Bernoulli trial		22d	
		Explain the relationship between exponential and Poisson distributions		22e	
		Define the hazard rate and use it to define probability functions for default time and conditional default probabilities		22f	
		Calculate the unconditional default probability and the conditional default probability given the hazard rate		22g	
		Distinguish between cumulative and marginal default probabilities		22h	
		Calculate risk-neutral default rates from spreads		22i	
		Describe advantages of using the CDS market to estimate hazard rates		22j	
		Explain how a CDS spread can be used to derive a hazard rate curve		22k	
		Explain how the default distribution is affected by the sloping of the spread curve		22l	
		Define spread risk and its measurement using the mark-to market and spread volatility		22m	
	The Credit Transfer Markets — and Their Implications	Discuss the flaws in the securitization of subprime mortgages prior to the financial crisis of 2007-2009		32a	
		Identify and explain the different techniques used to mitigate credit risk and describe how some of these techniques are changing the bank credit function		32b	
		Describe the originate-to-distribute model of credit risk transfer and discuss the two ways of managing a bank credit portfolio		32c	
		Describe covered bonds, funding collateralized loan obligations (CLOs), and other securitization instruments for funding purposes		32d	
		Describe the different types and structures of credit derivatives including credit default swaps (CDS), first-to default puts, total return swaps (TRS), asset-backed credit-linked notes (CLN), and their applications		32e	
	Understanding the Securitization of Subprime Mortgage Credit	Explain the subprime mortgage credit securitization process in the United States		34a	
		Identify and describe key frictions in subprime mortgage securitization and assess the relative contribution of each factor to the subprime mortgage problems		34b	
		Compare predatory lending and borrowing		34c	

Reading No.	Reading Name	Learning Outcome	2024 LOS	2023 LOS	Changes
	Understanding the Securitization of Subprime Mortgage Credit	Describe the various features of subprime MBS and explain how these features are designed to protect investors from losses on the underlying mortgage loans		34d	
		Distinguish between corporate credit ratings and asset-backed securities (ABS) credit ratings		34e	
		Explain how through-the-cycle ABS rating can amplify the housing cycle		34f	
Operational Risk					
40	Introduction to Operational Risk and Resilience	Describe an operational risk management framework and assess the types of risks that can fall within the scope of such a framework.	40a	35a	
		Describe the seven Basel II event risk categories and identify examples of operational risk events in each category.	40b	35b	
		Explain characteristics of operational risk exposures and operational loss events, and challenges that can arise in managing operational risk due to these characteristics.	40c	35c	
		Describe operational resilience, identify the elements of an operational resilience framework, and summarize regulatory expectations for operational resilience	40d	35d	
41	Risk Governance	Explain the Basel regulatory expectations for the governance of an operational risk management framework.	41a	36a	
		Describe and compare the roles of different committees and the board of directors in operational risk governance	41b	36b	
		Describe the "three lines of defense" model for operational risk governance and compare roles and responsibilities for each line of defense.	41c	36c	
		Explain best practices and regulatory expectations for the development of a risk appetite for operational risk and for a strong risk culture.	41d	36d	
42	Risk Identification	Compare different top-down and bottom-up approaches and tools for identifying operational risks.	42a	37a	
		Describe best practices in the process of scenario analysis for operational risk	42b	37b	
		Describe and apply an operational risk taxonomy and give examples of different taxonomies of operational risks.	42c	37c	
		Describe and apply the Level 1, 2, and 3 categories in the Basel operational risk taxonomy.	42d	37d	
43	Risk Measurement and Assessment	Explain best practices for the collection of operational loss data and reporting of operational loss incidents, including regulatory expectations.	43a	38a	
		Explain operational risk-assessment processes and tools, including risk control self-assessments (RCSAs), likelihood assessment scales, and heatmaps.	43b	38b	
		Describe the differences among key risk indicators (KRIs), key performance indicators (KPIs), and key control indicators (KCIs).	43c	38c	
		Describe the use of factor-based models that quantitatively assess operational risk, and explain the application of the Swiss cheese model and the bowtie tool	43d		
		Estimate operational risk exposures based on the fault tree model given probability assumptions.	43e	38e	
		Describe approaches used to determine the level of operational risk capital for economic capital purposes, including their application and limitations.	43f	38f	
		Describe and explain the steps to ensure a strong level of operational resilience, and to test the operational resilience of important business services	43g	38g	
		Describe and distinguish between the different quantitative approaches and models used to analyze operational risk		38d	

Reading No.	Reading Name	Learning Outcome	2024 LOS	2023 LOS	Changes
44	Risk Mitigation	Explain and compare different ways firms address their operational risk exposures	44a	39a	
		Compare different types of internal controls and provide examples of each type of internal control	44b	39b	
		Describe control automation, internal control design, and control testing, including risks and challenges that arise in these processes and ways to make them more effective	44c		
		Describe methods to improve the quality of an operational process and reduce the potential for human error	44d	39c	
		Explain how operational risk can arise with new products, new business initiatives, or mergers and acquisitions, and describe ways to mitigate these risks	44e	39d	
		Identify and describe approaches firms should use to mitigate the impact of operational risk events	44f	39e	
		Describe methods for the transfer of operational risks and the management of reputational risk, and assess their effectiveness in different situations.	44g	39f	
45	Risk Reporting	Identify roles and responsibilities of different organizational committees, and explain how risk reports should be developed for each committee or business function.	45a	40a	
		Describe components of operational risk reports and explain best practices in operational risk reporting	45b	40b	
		Describe challenges to reporting operational risks, including characteristics of operational loss data, and explain ways to overcome these challenges.	45c	40c	
		Explain best practices for reporting risk exposures to regulators and external stakeholders.	45d	40d	
46	Integrated Risk Management	Describe the role of risk governance, risk appetite, and risk culture in the context of an enterprise risk management (ERM) framework.	46a	41a	
		Summarize the role of Basel regulatory capital and the process of determining internal economic capital.	46b	41b	
		Describe elements of a stress-testing framework for financial institutions and explain best practices for stress testing	46c	41c	
		Explain challenges and considerations when developing and implementing models used in stress testing operational risk.	46d	41d	
47	Cyber-resilience: Range of practices	Define cyber-resilience and compare recent regulatory initiatives in the area of cyber-resilience	47a	42a	
		Describe current practices by banks and supervisors in the governance of a cyber-risk management framework, including roles and responsibilities.	47b	42b	
		Explain methods for supervising cyber-resilience, testing and incident response approaches, and cybersecurity and resilience metrics	47c	42c	
		Explain and assess current practices for the sharing of cybersecurity information between different types of institutions.	47d	42d	
		Describe practices for the governance of risks of interconnected third-party service providers	47e	42e	
48	Case Study: Cyberthreats and	Provide examples of cyber threats and information security risks, and describe frameworks and best practices for managing cyber risks.	48a	43a	
		Describe lessons learned from the Equifax case study.	48b	43b	
49	Sound Management of Risks related to Money Laundering and Financing of Terrorism	Explain best practices recommended by the Basel committee for the assessment, management, mitigation, and monitoring of money laundering and financing of terrorism (ML/FT) risks.	49a	44a	
		Describe recommended practices for the acceptance, verification, and identification of customers at a bank.	49b	44b	
		Explain practices for managing ML/FT risks in a group-wide and cross-border context	49c	44c	

Reading No.	Reading Name	Learning Outcome	2024 LOS	2023 LOS	Changes
50	Case Study: Financial Crime and Fraud	Describe elements of a control framework to manage financial fraud risk and money laundering risk	50a	45a	
		Summarize the regulatory findings and describe the lessons learned from the USAA case study.	50b	45b	
51	Guidance on Managing Outsourcing Risk	Explain how risks can arise through outsourcing activities to third-party service providers and describe elements of an effective program to manage outsourcing risk.	51a	46a	
		Explain how financial institutions should perform due diligence on third-party service providers.	51b	46b	
		Describe topics and provisions that should be addressed in a contract with a third-party service provider.	51c	46c	
52	Case Study: Third-Party Risk Management	Explain how risks related to the use of third parties can arise and describe characteristics of an effective third-party risk management framework.	52a	47a	
		Describe the lessons learned from the presented case studies	52b		
53	Case Study: Investor Protection and Compliance	Summarize important regulations designed to protect investors in financial instruments, including MiFiD, MiFiD II, and Dodd-Frank.	53a	48a	
		Describe and provide lessons learned from the case studies involving violations of investor protection or compliance regulations.	53b	48b	
54	Supervisory Guidance on Model Risk Management	Describe model risk and explain how it can arise in the implementation of a model.	54a	49a	
		Describe elements of an effective model risk management process.	54b	49b	
		Explain best practices for the development and implementation of models.	54c	49c	
		Describe elements of a strong model validation process and challenges to an effective validation process.	54d	49d	
55	Case Study: Model Risk and Model Validation	Define a model and describe different ways that financial institutions can become exposed to model risk	55a	50a	
		Describe the role of the model risk management function and explain best practices in the model risk management and validation processes	55b	50b	
		Describe lessons learned from the three case studies involving model risk.	55c	50c	
56	Stress Testing Banks	Describe the evolution of the stress testing process and compare the methodologies of historical European Banking Association (EBA), Comprehensive Capital Analysis and Review (CCAR), and Supervisory Capital Assessment Program (SCAP) stress tests.	56a	51a	
		Explain challenges in designing stress test scenarios, including the problem of coherence in modeling risk factors.	56b	51b	
		Explain challenges in modeling a bank's revenues, losses, and its balance sheet over a stress test horizon period.	56c	51c	
57	Risk Capital Attribution and Risk-Adjusted Performance Measurement	Define, compare, and contrast risk capital, economic capital, and regulatory capital and explain methods and motivations for using economic capital approaches to allocate risk capital	57a	52a	
		Describe the RAROC (risk-adjusted return on capital) methodology and its use in capital budgeting	57b	52b	
		Compute and interpret the RAROC for a project, loan, or loan portfolio and use RAROC to compare business unit performance.	57c	52c	
		Explain challenges that arise when using RAROC for performance measurement, including choosing a time horizon, measuring default probability, and choosing a confidence level.	57d	52d	
		Calculate the hurdle rate and apply this rate in making business decisions using RAROC.	57e	52e	
		Compute the adjusted RAROC for a project to determine its viability.	57f	52f	
		Explain challenges in modeling diversification benefits, including aggregating a firm's risk capital and allocating economic capital to different business lines.	57g	52g	
		Explain best practices in implementing an approach that uses RAROC to allocate economic capital.	57h	52h	

Reading No.	Reading Name	Learning Outcome	2024 LOS	2023 LOS	Changes
58	Range of practices and issues in economic capital frameworks	Within the economic capital implementation framework, describe the challenges that appear in: - Defining and calculating risk measures - Risk aggregation - Validation of models - Dependency modeling in credit risk - Evaluating counterparty credit risk - Assessing interest rate risk in the banking book	58a	53a	
		Describe the recommendations by the Bank for International Settlements (BIS) that supervisors should consider to make effective use of internal risk measures, such as economic capital, that are not designed for regulatory purposes.	58b	53b	
		Explain benefits and impacts of using an economic capital framework within the following areas: - Credit portfolio management - Risk-based pricing - Customer profitability analysis - Management incentives	58c	53c	
		Describe best practices and assess key concerns for the governance of an economic capital framework.	58d	53d	
59	Capital Planning at Large Bank Holding Companies: Supervisory Expectations and Range of Current Practice	Describe the Federal Reserve's Capital Plan Rule and explain the seven principles of an effective capital adequacy process for bank holding companies (BHCs) subject to the Capital Plan Rule.	59a	54a	
		Describe practices that can result in a strong and effective capital adequacy process for a BHC in the following areas: - Risk identification - Internal controls, including model review and validation - Corporate governance - Capital policy, including setting of goals and targets and contingency planning - Stress testing and stress scenario design - Estimating losses, revenues, and expenses, including quantitative and qualitative methodologies - Assessing the impact of capital adequacy, including risk-weighted asset (RWA) and balance sheet projections	59b	54a	
60	Capital Regulation Before the Global Financial Crisis	Explain the motivations for introducing the Basel regulations, including key risk exposures addressed, and explain the reasons for revisions to Basel regulations over time.	60a	55a	
		Explain the calculation of risk-weighted assets and the capital requirement per the original Basel I guidelines	60b	55b	
		Describe measures introduced in the 1995 and 1996 amendments, including guidelines for netting of credit exposures and methods for calculating market risk capital for assets in the trading book.	60c	55c	
		Describe changes to the Basel regulations made as part of Basel II, including the three pillars.	60d	55d	
		Compare the standardized internal ratings-based (IRB) approach, the foundation IRB approach, and the advanced IRB approach for the calculation of credit risk capital under Basel II.	60e	55e	
		Calculate credit risk capital under Basel II utilizing the IRB approach.	60f	55f	
		Compare the basic indicator approach, the standardized approach, and the advanced measurement approach for the calculation of operational risk capital under Basel II.	60g	55g	
		Summarize elements of the Solvency II capital framework for insurance companies.	60h	55h	

Reading No.	Reading Name	Learning Outcome	2024 LOS	2023 LOS	Changes
61	Solvency, Liquidity, and Other Regulation After the Global Financial Crisis	Describe and calculate the stressed VaR introduced in Basel 2.5 and calculate the market risk capital charge.	61a	56a	
		Explain the process of calculating the incremental risk capital charge for positions held in a bank's trading book.	61b	56b	
		Describe the comprehensive risk (CR) capital charge for portfolios of positions that are sensitive to correlations between default risks	61c	56c	
		Define in the context of Basel III and calculate where appropriate: - Tier 1 capital and its components - Tier 2 capital and its components - Required Tier 1 equity capital, total Tier 1 capital, and total capital	61d	56d	
		Describe the motivations for and calculate the capital conservation buffer and the countercyclical buffer, including special rules for globally systemically important banks (G-SIBs).	61e	56e	
		Describe and calculate ratios intended to improve the management of liquidity risk, including the required leverage ratio, the liquidity coverage ratio, and the net stable funding ratio.	61f	56f	
		Describe the mechanics of contingent convertible bonds (CoCos) and explain the motivations for banks to issue them.	61g	56g	
		Provide examples of legislative and regulatory reforms that were introduced after the 2007-2009 financial crisis	61h	56h	
62	High-level summary of Basel III reforms	Explain the motivations for revising the Basel III framework and the goals and impacts of the December 2017 reforms to the Basel III framework	62a	57a	
		Summarize the December 2017 revisions to the Basel III framework in the following areas: - The standardized approach to credit risk - The internal ratings-based (IRB) approaches for credit risk - The CVA risk framework - The operational risk framework - The leverage ratio framework	62b	57b	
		Describe the revised output floor introduced as part of the Basel III reforms and approaches to be used when calculating the output floor.	62c	57c	
63	Basel III: Finalising post-crisis reforms	Explain the elements of the new standardized approach to measure operational risk capital, including the business indicator, internal loss multiplier, and loss component, and calculate the operational risk capital requirement for a bank using this approach.	63a	58a	
		Compare the Standardized Measurement Approach (SMA) to earlier methods of calculating operational risk capital, including the Advanced Measurement Approaches (AMA).	63b	58b	
		Describe general and specific criteria recommended by the Basel Committee for the identification, collection, and treatment of operational loss data.	63c	58c	
Liquidity Risk					
64	Liquidity Risk	Explain and calculate liquidity trading risk via cost of liquidation and liquidity-adjusted VaR (LVaR).	64a	59a	
		Identify liquidity funding risk, funding sources, and lessons learned from real cases: Northern Rock, Ashanti Goldfields, and Metallgesellschaft.	64b	59b	
		Evaluate Basel III liquidity risk ratios and BIS principles for sound liquidity risk management	64c	59c	
		Explain liquidity black holes and identify the causes of positive feedback trading.	64d	59d	

Reading No.	Reading Name	Learning Outcome	2024 LOS	2023 LOS	Changes
65	Liquidity and Leverage	Differentiate between sources of liquidity risk and describe specific challenges faced by different types of financial institutions in managing liquidity risk.	65a	60a	
		Summarize the asset-liability management process at a fractional reserve bank, including the process of liquidity transformation.	65b	60b	
		Compare transactions used in the collateral market and explain risks that can arise through collateral market transactions	65c	60c	
		Describe the relationship between leverage and a firm's return profile (including the leverage effect) and distinguish the impact of different types of transactions on a firm's leverage and balance sheet.	65d	60d	
		Distinguish methods to measure and manage funding liquidity risk and transactions liquidity risk.	65e	60e	
		Calculate the expected transactions cost and the spread risk factor for a transaction and calculate the liquidity adjustment to VaR for a position to be liquidated over a number of trading days.	65f	60f	
		Discuss interactions between different types of liquidity risk and explain how liquidity risk events can increase systemic risk.	65g	60g	
66	Early Warning Indicators	Evaluate the characteristics of sound Early Warning Indicators (EWI) measures.	66a	61a	
		Identify EWI guidelines from banking regulators and supervisors (OCC, BCBS, Federal Reserve).	66b	61b	
		Discuss the applications of EWIs in the context of the liquidity risk management process.	66c	61c	
67	The Investment Function in Financial-Services Management	Compare various money market and capital market instruments and discuss their advantages and disadvantages	67a	62a	
		Identify and discuss various factors that affect the choice of investment securities by a bank.	67b	62b	
		Apply investment maturity strategies and maturity management tools based on the yield curve and duration	67c	62c	
68	Liquidity and Reserves Management: Strategies and Policies	Calculate a bank's net liquidity position and explain factors that affect the supply and demand of liquidity at a bank.	68a	63a	
		Compare strategies that a bank can use to meet demands for additional liquidity.	68b	63b	
		Estimate a bank's liquidity needs through three methods (sources and uses of funds, structure of funds, and liquidity indicators).	68c	63c	
		Summarize the process taken by a US bank to calculate its legal reserves	68d	63d	
		Differentiate between factors that affect the choice among alternate sources of reserves	68e	63e	
69	Intraday Liquidity Risk Management	Identify and explain the uses and sources of intraday liquidity	69a	64a	
		Discuss the governance structure of intraday liquidity risk management	69b	64b	
		Differentiate between methods for tracking intraday flows and monitoring risk levels.	69c	64c	
70	Monitoring Liquidity	Distinguish between deterministic and stochastic cash flows and provide examples of each.	70a	65a	
		Describe and provide examples of liquidity options and explain the impact of liquidity options on a bank's liquidity position and its liquidity management process.	70b	65b	
		Describe and apply the concepts of liquidity risk, funding cost risk, liquidity generation capacity, expected liquidity, and cash flow at risk.	70c	65c	
		Interpret the term structure of expected cash flows and cumulative cash flows.	70d	65d	
		Discuss the impact of available asset transactions on cash flows and liquidity generation capacity.	70e	65e	

Reading No.	Reading Name	Learning Outcome	2024 LOS	2023 LOS	Changes
71	The Failure Mechanics of Dealer Banks	Compare and contrast the major lines of business in which dealer banks operate and the risk factors they face in each line of business.	71a	66a	
		Identify situations that can cause a liquidity crisis at a dealer bank and explain responses that can mitigate these risks.	71b	66b	
		Assess policy measures that can alleviate firm-specific and systemic risks related to large dealer banks.	71c	66c	
72	Liquidity Stress Testing	Differentiate between various types of liquidity, including funding, operational, strategic, contingent, and restricted liquidity.	72a	67a	
		Estimate contingent liquidity via the liquid asset buffer	72b	67b	
		Discuss liquidity stress test design issues such as scope, scenario development, assumptions, outputs, governance, and integration with other risk models.	72c	67c	
73	Liquidity Risk Reporting and Stress Testing	Identify best practices for the reporting of a bank's liquidity position.	73a	68a	
		Compare and interpret different types of liquidity risk reports.	73b	68b	
		Explain the process of reporting a liquidity stress test and interpret a liquidity stress test report.	73c	68c	
74	Contingency Funding Planning	Discuss the relationship between contingency funding planning and liquidity stress testing.	74a	69a	
		Evaluate the key design considerations of a sound contingency funding plan.	74b	69b	
		Assess the key components of a contingency funding plan (governance and oversight, scenarios and liquidity gap analysis, contingent actions, monitoring and escalation, and data and reporting).	74c	69c	
75	Managing and Pricing Deposit Services	Differentiate between the various transaction and non-transaction deposit types.	75a	70a	
		Compare the different methods used to determine the pricing of deposits and calculate the price of a deposit account using cost-plus, marginal cost, and conditional pricing formulas.	75b	70b	
		Explain challenges faced by banks that offer deposit accounts, including deposit insurance, disclosures, overdraft protection, and basic (lifeline) banking.	75c	70c	
76	Managing Non-deposit Liabilities	Distinguish between the various sources of non-deposit liabilities at a bank.	76a	71a	
		Describe and calculate the available funds gap.	76b	71b	
		Discuss factors affecting the choice of non-deposit funding sources.	76c	71c	
		Calculate overall cost of funds using both the historical average cost approach and the pooled-funds approach.	76d	71d	
77	Repurchase Agreements and Financing	Describe the mechanics of repurchase agreements (repos) and calculate the settlement for a repo transaction.	77a	72a	
		Discuss common motivations for entering into repos, including their use in cash management and liquidity management	77b	72b	
		Discuss how counterparty risk and liquidity risk can arise through the use of repo transactions.	77c	72c	
		Assess the role of repo transactions in the collapses of Lehman Brothers and Bear Stearns during the 2007-2009 financial crisis.	77d	72d	
		Compare the use of general and special collateral in repo transactions.	77e	72e	
		Identify the characteristics of special spreads and explain the typical behavior of US Treasury special spreads over an auction cycle	77f	72f	
		Calculate the financing advantage of a bond trading special when used in a repo transaction.	77g	72g	
78	Liquidity Transfer Pricing: A Guide to Better Practice	Discuss the process of liquidity transfer pricing (LTP) and identify best practices for the governance and implementation of an LTP process.	78a	73a	
		Discuss challenges that may arise for banks during the implementation of LTP.	78b	73b	
		Compare the various approaches to liquidity transfer pricing (zero cost, average cost, and matched-maturity marginal cost)	78c	73c	
		Describe the contingent liquidity risk pricing process and calculate the cost of contingent liquidity risk.	78d	73d	

Reading No.	Reading Name	Learning Outcome	2024 LOS	2023 LOS	Changes
79	The US Dollar Shortage in Global Banking and the International	Identify the causes of the US dollar shortage during the Great Financial Crisis	79a	74a	
		Evaluate the importance of assessing maturity/currency mismatch across the balance sheets of consolidated entities	79b	74b	
		Discuss how central bank swap agreements overcame challenges commonly associated with international lenders of last resort.	79c	74c	
80	Covered Interest Parity Lost: Understanding the Cross-	Differentiate between the mechanics of foreign exchange (FX) swaps and cross-currency swaps.	80a	75a	
		Identify key factors that affect the cross-currency swap basis.	80b	75b	
		Assess the causes of covered interest rate parity violations after the financial crisis of 2008.	80c	75c	
81	Risk Management for Changing Interest Rates: Asset-Liability Management and Duration Techniques	Describe interest-sensitive gap management and apply this strategy to maximize a bank's net interest margin	81b	76b	
		Describe duration gap management and apply this strategy to protect a bank's net worth.	81c	76c	
		Discuss the limitations of interest-sensitive gap management and duration gap management	81d	76d	
		Discuss how asset-liability management strategies can help a bank hedge against interest rate risk.	81a	76a	
82	Illiquid Assets	Evaluate the characteristics of illiquid markets.	82a	77a	
		Examine the relationship between market imperfections and illiquidity.	82b	77b	
		Assess the impact of biases on reported returns for illiquid assets.	82c	77c	
		Explain the unsmoothing of returns and its properties.	82d	77d	
		Compare illiquidity risk premiums across and within asset categories.	82e	77e	
		Evaluate portfolio choice decisions on the inclusion of illiquid assets.	82f	77f	
Investment Risk					
83	Factor Theory	Provide examples of factors that impact asset prices and explain the theory of factor risk premiums	83a	78a	
		Discuss the capital asset pricing model (CAPM) including its assumptions and explain how factor risk is addressed in the CAPM.	83b	78b	
		Explain the implications of using the CAPM to value assets, including equilibrium and optimal holdings, exposure to factor risk, its treatment of diversification benefits, and shortcomings of the CAPM.	83c	78c	
		Describe multifactor models and compare and contrast multifactor models to the CAPM.	83d	78d	
		Explain how stochastic discount factors are created and apply them in the valuation of assets.	83e	78e	
		Describe efficient market theory and explain how markets can be inefficient.	83f	78f	
84	Factors	Describe the process of value investing and explain why a value premium may exist.	84a	79a	
		Explain how different macroeconomic risk factors, including economic growth, inflation, and volatility, affect asset returns and risk premiums	84b	79b	
		Assess methods of mitigating volatility risk in a portfolio and describe challenges that arise when managing volatility risk	84c	79c	
		Explain how dynamic risk factors can be used in a multifactor model of asset returns, using the Fama-French model as an example	84d	79d	
		Compare value and momentum investment strategies, including their return and risk profiles	84e	79e	
85	Alpha (and the Low-Risk Anomaly)	Describe and evaluate the low-risk anomaly of asset returns	85a	80a	
		Define and calculate alpha, tracking error, the information ratio, and the Sharpe ratio	85b	80b	
		Explain the impact of benchmark choice on alpha and describe characteristics of an effective benchmark to measure alpha	85c	80c	

Reading No.	Reading Name	Learning Outcome	2024 LOS	2023 LOS	Changes
85	Alpha (and the Low-Risk Anomaly)	Describe Grinold's fundamental law of active management, including its assumptions and limitations, and calculate the information ratio using this law.	85d	80d	
		Apply a factor regression to construct a benchmark with multiple factors, measure a portfolio's sensitivity to those factors, and measure alpha against that benchmark	85e	80e	
		Explain how to use style analysis to handle time-varying factor exposures	85f	80f	
		Describe issues that arise when measuring alphas for nonlinear strategies.	85g	80g	
		Compare the volatility anomaly and the beta anomaly and analyze evidence of each anomaly.	85h	80h	
		Describe potential explanations for the risk anomaly.	85i	80i	
86	Portfolio Construction	Distinguish among the inputs to the portfolio construction process	86a	81a	
		Evaluate the motivation for and the methods used for refining alphas in the implementation process.	86b	81b	
		Describe neutralization and the different approaches used for refining alphas to be neutral	86c	81c	
		Describe the implications of transaction costs on portfolio construction.	86d	81d	
		Describe practical issues in portfolio construction, including the determination of an appropriate risk aversion, aversions to specific risks, and proper alpha coverage	86e	81e	
		Describe portfolio revisions and rebalancing, and analyze the tradeoffs between alpha, risk, transaction costs, and time horizon.	86f	81f	
		Determine the optimal no-trade region for rebalancing with transaction costs.	86g	81g	
		Evaluate the strengths and weaknesses of the following portfolio construction techniques: screens, stratification, linear programming, and quadratic programming.	86h	81h	
		Describe dispersion, explain its causes, and describe methods for controlling forms of dispersion.	86i	81i	
87	Portfolio Risk: Analytical Methods	Define, calculate, and distinguish between the following portfolio VaR measures: diversified and undiversified portfolio VaR, individual VaR, incremental VaR, marginal VaR, and component VaR.	87a	82a	
		Explain the impact of correlation on portfolio risk.	87b	82b	
		Apply the concept of marginal VaR in making portfolio management decisions.	87c	82c	
		Explain the risk-minimizing position and the risk and return-optimizing position of a portfolio.	87d	82d	
		Explain the difference between risk management and portfolio management and describe how to use marginal VaR in portfolio management.	87e	82e	
88	VaR and Risk Budgeting in Investment Management	Define risk budgeting.	88a	83a	
		Describe the impact of horizon, turnover, and leverage on the risk management process in the investment management industry.	88b	83b	
		Describe the investment process of large investors such as pension funds.	88c	83c	
		Describe the risk management challenges associated with investments in hedge funds	88d	83d	
		Distinguish among the following types of risk: absolute risk, relative risk, policy-mix risk, active management risk, funding risk, and sponsor risk.	88e	83e	
		Explain the use of VaR to check manager compliance and monitor risk.	88f	83f	
		Explain how VaR can be used in the development of investment guidelines and for improving the investment process.	88g	83g	
		Describe the risk budgeting process and calculate risk budgets across asset classes and active managers	88h	83h	

Reading No.	Reading Name	Learning Outcome	2024 LOS	2023 LOS	Changes
89	Risk Monitoring and Performance Measurement	Describe the three fundamental dimensions behind risk management, and their relation to VaR and tracking error.	89a	84a	
		Describe risk planning, including its objectives, effects, and the participants in its development	89b	84b	
		Describe risk budgeting and the role of quantitative methods in risk budgeting	89c	84c	
		Describe risk monitoring and its role in an internal control environment.	89d	84d	
		Identify sources of risk consciousness within an organization	89e	84e	
		Describe the objectives and actions of a risk management unit in an investment management firm.	89f	84f	
		Describe how risk monitoring can confirm that investment activities are consistent with expectations	89g	84g	
		Describe the Liquidity Duration Statistic and how it can be used to measure liquidity.	89h	84h	
		Describe the objectives of performance measurement tools.	89i	84i	
		Describe the use of alpha, benchmarks, and peer groups as inputs in performance measurement tools.	89j	84j	
90	Portfolio Performance Evaluation	Differentiate between the time-weighted and dollar-weighted returns of a portfolio and describe their appropriate uses	90a	85a	
		Describe risk-adjusted performance measures, such as Sharpe's measure, Treynor's measure, Jensen's measure (Jensen's alpha), and the information ratio and identify the circumstances under which the use of each measure is most relevant	90b	85b	
		Describe the uses for the Modigliani-squared and Treynor's measure in comparing two portfolios and the graphical representation of these measures.	90c	85c	
		Determine the statistical significance of a performance measure using standard error and the t-statistic.	90d	85d	
		Describe style analysis.	90e	85e	
		Explain the difficulties in measuring the performance of actively managed portfolios	90f	85f	
		Describe performance manipulation and the problems associated with using conventional performance measures.	90g	85g	
		Describe techniques to measure the market timing ability of fund managers with a regression and with a call option model and compute return due to market timing.	90h	85h	
		Describe and apply performance attribution procedures, including the asset allocation decision, sector and security selection decision, and the aggregate contribution.	90i	85i	
91	Hedge Funds	Explain biases that are commonly found in databases of hedge funds	91a	86b	
		Explain the evolution of the hedge fund industry and describe landmark events that precipitated major changes in the development of the industry	91b	86c	
		Explain the impact of institutional investors on the hedge fund industry and assess reasons for the growing concentration of assets under management (AUM) in the industry.	91c	86d	
		Explain the relationship between risk and alpha in hedge funds.	91d	86e	
		Compare and contrast the different hedge fund strategies, describe their return characteristics, and describe the inherent risks of each strategy	91e	86f	
		Describe the historical portfolio construction and performance trends of hedge funds compared to those of equity indices.	91f	86g	
		Describe market events that resulted in a convergence of risk factors for different hedge fund strategies and explain the impact of such convergences on portfolio diversification strategies.	91g	86h	
		Describe the problem of risk sharing asymmetry between principals and agents in the hedge fund industry.	91h	86i	

Reading No.	Reading Name	Learning Outcome	2024 LOS	2023 LOS	Changes
91	Hedge Funds	Describe the characteristics of hedge funds and the hedge fund industry and compare hedge funds with mutual funds		86a	
92	Performing Due Diligence on Specific Managers and Funds	Identify reasons for the failures of hedge funds in the past.	92a	87a	
		Explain elements of the due diligence process used to assess investment managers.	92b	87b	
		Identify themes and questions investors can consider when evaluating a hedge fund manager.	92c	87c	
		Describe criteria that can be evaluated in assessing a hedge fund's risk management process.	92d	87d	
		Explain how due diligence can be performed on a hedge fund's operational environment.	92e	87e	
		Explain how a hedge fund's business model risk and its fraud risk can be assessed.	92f	87f	
		Describe elements that can be included as part of a due diligence questionnaire	92g	87g	
93	Predicting Fraud by Investment Managers	Explain the use and efficacy of information disclosures made by investment advisors in predicting fraud.	93a	88a	
		Describe the barriers and the costs incurred in implementing fraud prediction methods	93b	88b	
		Discuss ways to improve investors' ability to use disclosed data to predict fraud.	93c	88c	
Current Issues					
94	Review of the Federal Reserve's Supervision and Regulation of Silicon Valley Bank	Describe the events leading up to the failure of Silicon Valley Bank	94a		
		Describe shortfalls and deficiencies in the Federal Reserve's supervisory oversight of Silicon Valley Bank during the period that the bank transitioned from the Fed's Regional Banking Organization (RBO) portfolio to its Large and Foreign Banking Organization (LFBO) portfolio.	94b		
		Identify Silicon Valley Bank's specific risk issues which led to and accelerated its failure including deposit concentration, type of deposits, held-to-maturity securities, available-for-sale securities, the bank's contingent funding plan and capacity, and its capital raising efforts.	94c		
		Identify and describe the failures and shortfalls of Silicon Valley Bank in the areas of governance and risk management including those related to the CRO position and the bank's internal audit function	94d		
		Identify the scope of Silicon Valley Bank's liquidity risk management deficiencies and shortfalls, including its modeling and stress testing of its 30-day liquidity buffer, as well as the actions that management and regulators considered to address these specific liquidity issues.	94e		
		Describe the deficiencies in Silicon Valley Bank's interest rate risk management process, including its modelling process, and explain how proper use of metrics such as net interest income (NII) at risk and economic value of equity (EVE) could have improved its management of interest rate risk.	94f		
95	The Credit Suisse CoCo Wipeout: Facts, Misperceptions, and Lessons for Financial Regulation	Describe the features and mechanics of contingent convertible bonds (CoCos) and explain the rationale for banks to issue them	95a		
		Explain the rescue of Credit Suisse by Swiss regulators in 2023 and compare it to the rescue of Bear Stearns by US regulators during the financial crisis in 2008	95b		
		Explain the rationale for the write-down of Credit Suisse CoCos that was engineered by regulators during the rescue of Credit Suisse and its takeover by UBS	95c		
		Describe the reactions by market participants to the write-down of the CoCos, and explain and evaluate different arguments and lessons learned related to the decision to write down the CoCos	95d		

Reading No.	Reading Name	Learning Outcome	2024 LOS	2023 LOS	Changes
96	Artificial Intelligence and Bank Supervision	Describe historical evolution and common types of AI-based applications used in the financial sector	96a		
		Explain the advantages of implementing AI-based applications to the banking services companies and their customers	96b		
		Discuss the disadvantages and difficulties for financial companies using AI	96c		
		Clarify the specific issues faced by banks and regulators arising from utilizing AI in modeling and valuation	96d		
97	Financial Risk Management and Explainable, Trustworthy, Responsible AI	Describe the challenge posed by potential model bias and the ethical and responsible considerations surrounding the implementation of AI-driven solutions in financial risk management	97a		
		Analyze the potential benefits and challenges of utilizing AI while maintaining fairness and preventing biases in risk assessment and decision-making	97b		
		Explain the proposed considerations for the technical validation of decision-making algorithms to check for potential unfairness	97c		
		Describe the approaches and technologies that should be considered in the implementation and assessment of Trustworthy AI	97d		
		Examine the application of Explainable AI (XAI) in the field of credit risk management as presented in the use case of a European insurance group	97e		
98	Artificial Intelligence Risk Management Framework	Describe how organizations can frame the risks related to AI and explain the challenges that should be considered in AI risk management	98a		
		Identify AI actors across the AI lifecycle dimensions and describe how these actors work together to manage risks and achieve the goals of trustworthy and responsible AI	98b		
		Describe the characteristics of trustworthy AI and analyze the proposed guidance to address them	98c		
		Explain the potential benefits of periodically evaluating AI risk management effectiveness	98d		
		Describe specific functions applied to help organizations address the risks of AI systems in practice	98e		
99	Climate-related risk drivers and their transmission channels	Describe climate-related risk drivers and explain how those drivers give rise to different types of risks for banks.	99a	91a	
		Compare physical and transition risk drivers related to climate change	99b	91b	
		Assess the potential impact of different microeconomic and macroeconomic drivers of climate risk.	99c	91c	
		Describe and assess factors that can amplify the impact of climate-related risks on banks as well as potential mitigants for these risks.	99d	91d	
100	Climate-related financial risks – measurement methodologies	Describe main issues in identifying and measuring climate-related financial risks.	100a	92a	
		Identify unique data needs inherent in the climate-related risks and describe candidate methodologies that could be used to analyze these types of data.	100b	92b	
		Describe current and developing methodologies for measuring climate-related financial risks employed by banks and supervisors	100c	92c	
		Identify strengths and weaknesses of the main types of measurement approaches.	100e	92e	
		Assess gaps and challenges in designing a modeling framework to capture climate-related financial risk	100f	92f	
		Compare and contrast climate-measuring methodologies utilized by banks, regulators, and third- party providers.	100d	92d	

Reading No.	Reading Name	Learning Outcome	2024 LOS	2023 LOS	Changes
101	Principles for the effective management and supervision of climate-related financial risks	Describe the principles for managing climate-related financial risks related to corporate governance and internal control framework	101a	93a	
		Describe the principles for managing climate-related financial risks related to capital and liquidity adequacy and the risk management process	101b	93b	
		Describe the principles for the management of climate-related financial risks related to management, monitoring, and reporting, comprehensive management of credit risk and other risks, and scenario analysis	101c	93c	
		Describe the principles for the supervision of climate-related financial risks related to prudential regulatory and supervisory requirements for banks and responsibilities, powers, and functions of supervisors.	101d	93d	
102	The Crypto Ecosystem: Key Elements and Risks	Describe the key elements of the crypto ecosystem, including unbacked crypto, stablecoins, smart contracts, and DeFi services	102a		
		Describe the structural flaws inherent in various elements of the crypto ecosystem	102b		
		Describe the risks crypto poses to parties including crypto investors, governments, regulators, and traditional financial institutions; and identify potential policy actions that can be taken to mitigate these risks	102c		
103	Digital Resilience and Financial Stability	Describe characteristics of cyber risks and information/communication technology (ICT) risks faced by financial institutions	103a		
		Assess the interactions between cyber and ICT risks and financial risks and explain how cyber and ICT risk events at financial institutions can lead to systemic financial risk	103b		
		Describe potential macroprudential tools and policy measures that can be used to address cyber risks and ICT risks and explain challenges to the adoption of each one	103c		
	Machine Learning and AI for Risk Management	Explain the distinctions between the two broad categories of machine learning and describe the techniques used within each category		89a	
		Analyze and discuss the application of AI and machine learning techniques in the following risk areas: - Credit risk - Market risk - Operational risk - Regulatory compliance		89b	
		Describe the role and potential benefits of AI and machine learning techniques in risk management		89c	
		Identify and describe the limitations and challenges of using AI and machine learning techniques in risk management		89d	
	Artificial Intelligence Risk & Governance	Identify and discuss the categories of potential risks associated with the use of AI by financial firms and describe the risks that are considered under each category		90a	
		Describe the four core components of AI governance and recommended practices related to each		90b	
		Explain how issues related to interpretability and discrimination can arise from the use of AI by financial firms		90c	
		Describe practices financial firms can adopt to mitigate AI risks		90d	
	Inflation: a look under the hood	Describe how the dynamics of inflation differ between a low-inflation regime and a high-inflation regime		94a	
		Explain the process of wage and price formation, the role inflation plays in this process, and vice versa		94b	
		Describe the various channels through which inflation expectations manifest in financial markets and discuss the inference of inflation expectations from financial markets		94c	
		Describe the operation of a central bank's monetary policy in a low-inflation regime and evaluate indicators a central bank can use for timely detection of transitions to a high-inflation regime		94d	

Reading No.	Reading Name	Learning Outcome	2024 LOS	2023 LOS	Changes
	The Blockchain Revolution: Decoding Digital Currencies	Explain how a blockchain-based cryptocurrency system works and compare cryptocurrencies to conventional money and payment systems		95a	
		Describe elements of a decentralized finance structure, including smart contracts, tokenized assets, decentralized autonomous organizations, and decentralized exchanges		95b	
		Define stablecoins and assess their advantages and disadvantages, including their potential contribution to systemic risk and regulatory considerations		95c	
		Explain the advantages, disadvantages, and potential applications of a central bank digital currency		95d	
	The future monetary system	Identify and describe the benefits and limitations of crypto and decentralized finance (DeFi) innovations		96a	
		Describe the role of stablecoins in DeFi ecosystems and differentiate among the types of stablecoins		96b	
		Discuss possible advantages and disadvantages of a monetary system based on CBDCs		96c	
		Understand the risks posed by the centralization that occurs in DeFi ecosystems and crypto exchanges (CEX)		96d	
		Outline the regulatory actions recommended by the BIS to manage risks in the crypto monetary system		96e	