

**Federal Reserve Board of Governors**

**Course Description for  
Payment Systems and  
Risks (STREAM  
Technology Lab)**

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## Payment Systems and Risks

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### S&R STREAM Technology Lab

The Board of Governors of the Federal Reserve System is proud to offer technology-related courses developed and hosted by the S.T.R.E.A.M./Technology Lab at the Federal Reserve Bank of Chicago, Chicago, Illinois. For over fourteen years, the S.T.R.E.A.M./Technology Lab has provided unique value in examiner training by combining lectures with hands-on exercises. The exercises reinforce concepts by allowing participants to interact with various application software and/or operating systems. Each participant has a dedicated PC in the state-of-the-art classroom, while the lab is outfitted with many vendor applications, operating systems, and security appliances widely used in the financial industry.

### Type of Participant Targeted

The course will be of interest to safety-and-soundness examiners or IT examiners to conduct payment systems exams in a bank or payment service provider.

### Prerequisites

None.

### Course Overview

The goal of this five-day Payment Systems and Risks course is to introduce key components and key players in the payment domain, explain various channels, networks and systems in the electronic payment systems, discuss how to conduct risk-focus exam on these payment systems based on exam guidelines, and share insights on the future payment evolution. It also gives participants hands-on training on the technology of Remote Deposit Capture (RDC) and demonstrates back office operation of money transfer in a simulated bank environment.

The class offers a combination of lectures, case studies, instructor demonstrations, and hands-on labs. This course offers Continuing Professional Education (CPE) credits.

## Course Objectives

Upon completion of this course, the participant, at a minimum, will be able to demonstrate the following skills:

- Define key components and key players in the payment industry;
- Describe, at a high level, the various payment channels, networks and systems;
- Describe the risks, mediations and controls related to various payment types, payment channels and systems;
- Identify key principles based on exam guidelines;
- Conduct risk-focused payment system exam.

## Post-Course Intervention

To reinforce learning after the class, participants should be assigned to complete at least one payment exam for a bank or a payment service provider.

## Overview of Class Curriculum

<b>Subject</b>	<b>Class Hours</b>
Class Introduction	1.0
How does Money Flow	2.5
Payment Videos	1.0
RDC Overview and RDC Work Program	2.5
RDC Hands-on Labs	1.0
Financial Market Utility and Wholesale Payment Networks	2.5
Retail Payment Networks	2.5
Wire Transfer and ACH Examination	2.5
Payment Service Provider Supervision	2.5
Payment Supervision among Regulators	1.0
Mobile Banking and Mobile Payment	2.0
Cyber Security and Threats	2.0
PASS - Payment Exam Data Analysis and Exam Scope	2.0
Virtual Currency and Risk Watch	2.0
Class Review and Panel Discussion	1.0
<b>Total Lecture &amp; Exercise Hours</b>	<b>28</b>

\* Course offers CPE credits through NASBA.

## Learning Objectives

Participants develop a solid understanding of payment systems, conduct payment system risk assessment and exam based on FFIEC's related guidance and work program through the following modules.

**By module, the following learning objectives will be accomplished:**

<b>Module</b>	<b>Learning Objectives ( From Participants' Perspective)</b>
<b>How does Money Flow</b>	<ul style="list-style-type: none"> <li>• Discuss purposes and functions of payment systems</li> <li>• Identify key players, key components and key processes in the money transfer</li> <li>• Discuss, at a high level, the laws and regulations on various payment systems.</li> </ul>
<b>RDC Overview and RDC Work Program</b>	<ul style="list-style-type: none"> <li>• Name the technology components needed to facilitate RDC.</li> <li>• Discuss areas of potential security weakness in a network architecture that includes RDC.</li> <li>• List technological controls that should be in place in a typical RDC implementation.</li> </ul>
<b>RDC Hands-on Labs</b>	<ul style="list-style-type: none"> <li>• Discuss major components that should be a part of the RDC risk management process.</li> <li>• Explain the segregation of duties that should be in place at both the merchant and the bank which offers RDC services.</li> <li>• Discuss the reporting and monitoring practices which bank management should maintain over RDC services</li> </ul>
<b>Retail Payment Networks</b>	<ul style="list-style-type: none"> <li>• Explain the card network components</li> <li>• Explain card products, such as credit card, debit card, prepaid card, gift card, etc.</li> <li>• Discuss operational risks, such as credit risk and possible market risk in the products</li> <li>• Elaborate PCI DSS risk management guidance on card network and merchant</li> </ul>
<b>Wire Transfer and ACH Examination</b>	<ul style="list-style-type: none"> <li>• Perceive the work program and exam guideline on Wire Transfer exam and ACH exam</li> <li>• Conduct exam on fed wire and ACH</li> </ul>
<b>Financial Market Utility and Wholesale Payment Networks</b>	<ul style="list-style-type: none"> <li>• Describe functions of financial market utility ( FMU)</li> <li>• Illustrate potential operational risks associated with FMU, i.e. credit risk, market risk, liquidity risk, etc.</li> <li>• Evaluate the risk management practices to mitigate the risks during the exam</li> <li>• Understand the functions of whole sale payment networks</li> <li>• Describe main players in the wholesale payment</li> </ul>

	<ul style="list-style-type: none"> <li>• Evaluate and exam payment network</li> </ul>
<b>Payment Exam Data Analysis and Exam Scoping ( PASS Tool)</b>	<ul style="list-style-type: none"> <li>• Learn to use PASS to gather payment exam data</li> <li>• Scope the exam based on data analysis</li> </ul>
<b>Payment Service Provider Supervision</b>	<ul style="list-style-type: none"> <li>• Understand functions of payment service provider</li> <li>• Describe impacts of payment service providers</li> <li>• Explain exam focus on the payment service provider</li> </ul>
<b>Payment Supervision among Regulators</b>	<ul style="list-style-type: none"> <li>• Describe common FFIEC guidelines on payment exam</li> <li>• Compare and contrast various exam guidelines, Advisory Letters from different regulators on payment exam</li> </ul>
<b>Mobile Banking and Mobile Payment</b>	<ul style="list-style-type: none"> <li>• Discover various mobile payment channels and their impact on end users</li> <li>• Identify potential risk exposure and challenges</li> <li>• Evaluate risk controls to support mobile banking and mobile payment</li> </ul>
<b>Cyber Security and Threats</b>	<ul style="list-style-type: none"> <li>• Observe cyber security trends</li> <li>• Identify cyber-attack impacts on FI payment systems</li> <li>• Recognize cyber threat impacts on individual consumer</li> </ul>
<b>Virtual Currency and Risk Watch</b>	<ul style="list-style-type: none"> <li>• Discover the world of virtual currency</li> <li>• Elucidate how the virtual currency interact with real money or real transaction</li> <li>• Evaluate potential risks</li> </ul>

## **Class Size**

The optimal class size for the class is approximately 20 participants. To provide sufficient variety of interaction among class participants, the minimum class size should be 5 participants.

## **Instructors**

The Payment Systems and Risks course is conducted and supported by a group of professionals, including seasoned examiners, technology architects, and payment exam analysts. Content for the class was developed and updated by the instructor team based on their latest exam experience and payment research.