

MIS 2201

Management Information Systems

Exam 1

Comprehensive Lesson Previews

Study Guide

Fall 2025 • University of Minnesota Duluth

Exam Coverage: 7 Modules

Format: 30-40 Multiple Choice Questions + 5 Feedback Questions

Duration: 65 Minutes

Content Distribution: 60-70% Lecture, 10% SIMnet, 10% Connect, 10% Class Discussion

1 Overview

This document contains all lesson previews and learning objectives from the 7 modules covered in MIS 2201 Exam 1, organized according to the syllabus coverage order. Use this to review the scope of each module and identify areas that may need to be refined for the exam.

Syllabus Coverage Order:

- Week 1: Module 1 (Investigating MIS)
- Week 2: Module 19 (Computer Hardware) → Module 20 (Computer Software)
- Week 3: Module 13 (Business Computer Applications)
- Week 4: Module 6 (Computer Networks & Internet)
- Week 5: Module 21 (Artificial Intelligence) → Module 8 (Social Media)

2 Module 1: Investigating MIS

Week 1 Coverage

2.1 Topics Covered in Exam 1

Core Topics:

- The impact of MIS on management theory
- Major theorist: Peter Drucker
- Types of systems:
 - Mainframes, personal computers
 - Client-server networks
 - Cloud computing
- Transaction processing systems (Mobile POS stations)
- Decision support systems
- Changing MIS technology and the future for managers
- How AI can impact MIS

Topics NOT Included in Exam 1:

- Cash registers
- Employee scheduling software

- Human resource information systems
- Major theorists: John Locke, Adam Smith, Frederick Taylor, Henri Fayol, Max Weber, Mary Parker Follett, Elton Mayo, Douglas McGregor
- Supply chain management systems
- Marketing information systems

2.2 Learning Objectives (Exam 1 Focus)

After completing this lesson, students will be able to:

- Explain how management information systems have impacted management theory
- Describe the management theory of Peter Drucker
- Describe types of computer systems including mainframes, personal computers, client-server networks, and Cloud computing
- Define transaction processing systems including mobile point-of-sale systems
- Describe decision support systems

3 Module 19: Computer Hardware

Week 2 Coverage

3.1 Topics Covered in Exam 1

Core Topics:

- Computers and Computer Functions
 - Computer and computer hardware
 - Types of computers, computing functions, the system unit
- Personal Computers
 - Laptops, tablets, desktops, all-in-ones, embedded computers, smartphones, media players
- Computer Systems
 - Servers
 - Mainframe and supercomputers
- Computer Processors
 - Clockspeed and overclocking
 - Single-core and multi-core processors and manufacturers

- Memory and Storage
 - RAM, cache, ROM, computer storage
- Computer Ports
 - Connectors, USBs, HDMI, Ethernet
 - VGA, 3.5 mm audio, MIDI
- Computer Protocol
 - Wi-Fi, Bluetooth
- Computer Graphics
 - Video cards, screensize, pixels, resolution
- How A Computer Works
 - Computer layout, bits and bytes, storage capacity
 - ASCII
 - The boot process, processor speed

Topics NOT Included in Exam 1:

- Defragging and disk clean up
- Comparing ports and wireless ports
- Lightning connector
- IrDA
- Unicode
- Computer bus
- Machine cycle
- Word size

3.2 Learning Objectives (Exam 1 Focus)

After completing this lesson, students will be able to:

- Describe types of computers and computer functions
- Differentiate between different types of personal computers
- Describe large computer systems
- Explain computer processors and the relevant parameters

- Identify the memory and storage systems in computers
- Identify the various computer ports
- Describe computer protocols
- Define the terms video card and pixel and explain the parameters of computer graphics
- Explain basic computer operations including the boot process and processor speed

4 Module 20: Computer Software & Buying a Computer

Week 2 Coverage

4.1 Lesson Preview: Computer Software and Buying a Computer

Core Topics:

- Types of Software
 - System software
 - Computer platforms
- Operating Systems
 - Windows and the Apple Mac operating systems
 - Android and iPhone operating systems
 - Linux and networking operating systems
 - Operating system selection
- Programs and Applications
 - Utility programs and applets
 - Productivity software
 - Computer applications (apps)
- Managing Software
 - Licensing, installing and uninstalling software
 - Computer applications (apps)
 - Control panel and system preferences
 - Key system programs
- Computer Selection
 - Memory and storage needs
 - Screen considerations
 - Optical drives and other considerations

4.2 Learning Objectives

After completing this lesson, students will be able to:

- Identify the general types of software
- Describe the different types of operating systems and what to consider when selecting an operating system
- Describe utility software, applets, and productivity software
- Explain how to manage software, including licensing, installing, and uninstalling
- Describe the factors to consider when selecting a computer

5 Module 13: Business Computer Applications

Week 3 Coverage

5.1 Topics Covered in Exam 1

Core Topics:

- Transaction processing systems
 - Merchant service aggregators
 - PayPal, Stripe, Square, and QuickBooks
- Executive information system software
 - Elements of executive information system software
 - Major categories of executive information system software
- Enterprise resource planning systems software
 - Elements of ERP software
 - Major manufacturers
- Customer relationship management software
 - Functions of customer relationship management software
 - Major providers
- The use of AI in business computer applications
 - How AI is used in ERP

Topics NOT Included in Exam 1:

- Cash registers

- Decision support systems software
- Three components of DSS
- Major providers (for DSS)
- The impact of AI on DSS
- Executive human resources systems software
- Executive operations management software
- Executive marketing management software
- Major providers (for executive information systems)
- How AI is used in TPS
- Supply chain management software (all related subtopics)

5.2 Learning Objectives (Exam 1 Focus)

After completing this lesson, students will be able to:

- Explain how businesses use specific applications to assist managers
- Describe the various types of business applications software used by managers
- Describe transaction processing systems and their impact on the business world
- Describe how transaction processing systems led to merchant service aggregators
- Describe the services provided by PayPal, Stripe, Square, and QuickBooks
- Describe what is meant by executive information system software, its elements and major categories, and how it impacts the business world
- Explain what is meant by enterprise resource planning system software, define its elements, and explain its impact on the business world
- Describe customer relationship management software and its functions
- Describe how AI is used in enterprise resource planning systems software

6 Module 6: Computer Networks & Internet

Week 4 Coverage

6.1 Topics Covered in Exam 1

Core Topics:

- Types of networks
 - Definition of a computer network
 - PANs, LANs, WANs, internets, and the Internet
- How the internet works
 - IP addresses and TCP/IP
- Using the internet for communication and services
 - The world wide web
 - Web 2.0 and Web 3.0
- The internet of things
- Cloud computing
 - Web services
 - Software as a Service
 - Platform as a service
 - Infrastructure as a service
 - Serverless computing
- Virtual private networks
- AI and networks and the internet
 - Using AI to automate networks
 - Using AI to support network security
 - Using AI to design computer networks
 - How Gen AI uses the internet

Topics NOT Included in Exam 1:

- Geographic information systems
- Blockchain (including business use and processes)
- Cryptocurrency (creating cryptocurrency, popular cryptocurrencies)
- Cell phone communication
- 5G connectivity

- Cloud computing in the business landscape
- Cloud deployment models
- Content delivery networks
- Cloud services security
- Collaboration software (including its use in business)
- How AI is used to optimize internet infrastructure
- Using AI to create intelligent edge networks

6.2 Learning Objectives (Exam 1 Focus)

After completing this lesson, students will be able to:

- Explain computer networks and how they are connected to the internet
- Define types of computer networks including PANs, LANs, WANs, internets and the internet
- Explain how the internet works
- Explain the components of an IP address
- Explain Transmission Control Protocol/Internet Protocol (TCP/IP)
- Describe the process for sending information on the internet
- Explain how the internet is used to communicate and provide service to users
- Explain the World Wide Web
- Define Web 2.0 and Web 3.0
- Describe the Internet of Things (IoT)
- Define cloud computing
- Describe web services including SaaS, PaaS, IaaS, and serverless computing
- Define virtual private networks (VPNs)
- Explain how AI is used to automate networks
- Describe how AI is used to support network security
- Describe how AI is used to design computer networks
- Describe how Gen AI uses the internet

7 Module 21: Artificial Intelligence

Week 5 Coverage

7.1 Topics Covered in Exam 1

Core Topics:

- Machine learning and deep learning
- The positive outcomes and potential drawbacks of AI
- How information architecture (IA) applies to AI
- Machine learning, deep learning, and neural networks
- Machine learning methods
- Neural networks
- Deep learning
- Artificial intelligence ethics and bias
 - Legal considerations of AI
 - Ethical concerns of AI
 - How bias applies to AI
 - How to build trust in AI platforms
- Artificial intelligence now and in the future
 - AI in business
 - AI in healthcare
 - AI in government
- AI careers
 - Various AI careers
 - College majors and emphasis areas in AI
 - The process for learning AI
- AI chatbots
 - AI language models
 - ChatGPT, Caktus AI, and Bing
 - AI detection software
 - Chatbot ethics
 - Student use of chatbots
 - The future of AI chatbots
- Traditional AI vs generative AI
- Various ways AI is used

- How managers use AI
 - AI in computer programming
 - AI in cybersecurity
- Gen AI prompting
 - The prompting framework
 - Types of prompts
 - Best practices in prompt engineering

Topics NOT Included in Exam 1:

- Introduction to AI and its impact (history of AI)
- Generative adversarial network (GAN)
- How businesses build or acquire and implement AI
- Microsoft Copilot
- Cloud computing and AI
- Cognitive computing
- Building an AI model

7.2 Learning Objectives (Exam 1 Focus)

After completing this lesson, students will be able to:

- Explain how to apply information architecture to AI
- Describe machine learning and identify various learning methods
- Describe neural networks
- Explain the deep learning process
- Explain the importance of data used for AIs
- Discuss the legal considerations, ethical concerns, and bias as they relate to AI
- Describe ways to build trust in AI platforms
- Contrast guiding principles for the use of AI
- Identify current applications and uses of AI
- Identify the ethical dilemmas related to AI applications
- Explain important legislation related to AI

- Explain chatbots and AI language models
- Identify popular chatbots in use today and describe AI detection software
- Explain AI chatbot ethics and discuss students' use of AI as well as the future of AI chatbots
- Compare and contrast generative AI and other types of AI
- Explain the process for learning AI
- Describe various careers in AI and identify college majors or emphasis areas in AI
- Explain how managers can use AI
- Explain how AI can be used in computer programming and cybersecurity
- Describe Gen AI prompting
- Describe the prompting framework
- Describe various types of prompts
- Describe best practices used in creating prompts

8 Module 8: Social Media

Week 5 Coverage

8.1 Topics Covered in Exam 1

Core Topics:

- The social media information system (SMIS)
- Components of a SMIS: Hardware and Software
- Components of a SMIS: Data and Procedures
- Components of a SMIS: People
- Data collection
- Data for marketing research
- Sources of social media data: Facebook, Instagram, and Twitter
- Consumer behavior
- Using social media to measure consumer behavior
- Target marketing strategy
- Six steps to create a social media information system:
 1. Developing goals

2. Setting success metrics
3. Target market identification
4. Defining value
5. Making connections
6. Gathering and analyzing data

Note: All topics are included for Module 8 - no exclusions.

8.2 Learning Objectives (Exam 1 Focus)

After completing this lesson, students will be able to:

- Define a social media information system
- Identify the components of a SMIS
- Describe the hardware and software components of a SMIS
- Explain the importance of data and procedures in a SMIS
- Explain the importance of people in a SMIS
- Explain how social media is used to collect data for marketing research
- Identify the sources of data provided from social media sites
- Describe the tools and information available for Facebook data analysis
- Describe the tools and information available for Instagram data analysis
- Describe the tools and information available for Twitter data analysis
- Define consumer behavior
- Explain how social media is used to measure consumer behavior
- Explain how social media is used to create a target marketing strategy
- Identify the six steps involved in creating a SMIS, in proper order
- Explain the first step in creating a SMIS: developing goals
- Explain the second step in creating a SMIS: setting metrics
- Explain the third step in creating a SMIS: identifying target markets
- Explain the fourth step in creating a SMIS: defining value
- Explain the fifth step in creating a SMIS: making connections
- Explain the sixth step in creating a SMIS: gathering and analyzing data