

LAPT

LONDON ACADEMY OF PROFESSIONAL TRAINING

CERTIFICATE

ISO 14496 — MPEG-4 Coding Standard

ISO Certification Programme



LAPT — London Academy of Professional Training

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Reference IIT-AVS-14496 • ISO IT & Related Technologies

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AT A GLANCE

REFERENCE	IIT-AVS-14496
AWARD	Certificate
ASSESSMENT	430 marks — 258 to pass (60%)
PREREQUISITES	None
VALIDITY	Lifetime
AWARDING BODY	LAPT — London Academy of Professional Training

CURRICULUM

1 Advanced Audio-Visual Technology Management 5 chapters · 30 classes 85 marks • 1 Understanding ISO 14496: The MPEG-4 Framework — 6 classes › 1.1 Explore the Origins and Evolution of MPEG-4 Standards › 1.2 Identify Key Components and Features of ISO 14496 › 1.3 Analyze the Technical Specifications of MPEG-4 Coding › 1.4 Examine the Applications of ISO 14496 in Multimedia › 1.5 Assess the Impact of MPEG-4 on Modern Audio-Visual Technologies › 1.6 Implement MPEG-4 Standards in Real-World Audio-Visual Projects • 2 Audio and Video Encoding Techniques in MPEG-4 — 6 classes › 2.1 Explore MPEG-4 Encoding Fundamentals › 2.2 Analyze Audio Compression Techniques in MPEG-4 › 2.3 Examine Video Compression Methods in MPEG-4 › 2.4 Investigate the Role of Metadata in MPEG-4 › 2.5 Implement MPEG-4 Encoding in a Sample Project › 2.6 Evaluate Encoding Quality and Performance Metrics • 3 Integration of MPEG-4 with Streaming Technologies — 6 classes › 3.1 Explore the Fundamentals of MPEG-4 and Streaming Technologies › 3.2 Analyze the Core Components of MPEG-4 for Streaming › 3.3 Examine the Role of Metadata in MPEG-4 Streaming Integration › 3.4 Assess Quality of Service (QoS) in MPEG-4 Streaming Scenarios › 3.5 Implement Best Practices for MPEG-4 Integration with Streaming Solutions › 3.6 Evaluate Real-World Case Studies of MPEG-4 in Streaming Technologies

• 4 Advanced Features of MPEG-4: Metadata and Interactivity — 6 classes

› 4.1 Explain the Role of Metadata in MPEG-4

› 4.2 Identify Types of Metadata Used in Advanced Audio-Visual Applications

› 4.3 Analyze the Structure of MPEG-4 Metadata for Enhanced Interactivity

› 4.4 Demonstrate the Integration of User Interactivity Using MPEG-4 Features

› 4.5 Evaluate the Impact of Interactive Metadata on User Experience

› 4.6 Create a Project That Utilizes MPEG-4 Metadata for Enhanced Content Delivery

• 5 Implementing MPEG-4 in Professional Audio-Visual Projects — 6 classes

› 5.1 Explore the Fundamentals of MPEG-4 Coding Standards

› 5.2 Analyze the Structure of Audio-Visual Data in MPEG-4

› 5.3 Assess Compatibility Requirements for Professional Projects

› 5.4 Implement Encoding Techniques for Optimal MPEG-4 Performance

› 5.5 Develop a Workflow for Integrating MPEG-4 into Existing Systems

› 5.6 Evaluate Project Outcomes with MPEG-4 Compliance Metrics

• 1 Fundamentals of MPEG-4 Coding and Performance Metrics — 6

classes

- › 1.1 Understand the Basics of MPEG-4 Coding
- › 1.2 Explore Key Principles of Performance Metrics
- › 1.3 Analyze the Structure of MPEG-4 Data Streams
- › 1.4 Evaluate Performance Metrics in MPEG-4 Coding
- › 1.5 Compare MPEG-4 Performance with Other Standards
- › 1.6 Apply Performance Evaluation Techniques to Real-World Scenarios

• 2 Quantitative Analysis of MPEG-4 Performance Characteristics — 6

classes

- › 2.1 Analyze MPEG-4 Encoding Efficiency Metrics
- › 2.2 Evaluate Bitrate Optimization Techniques
- › 2.3 Examine Compression Artifact Trade-offs
- › 2.4 Implement Performance Benchmarking Methods
- › 2.5 Assess Quality of Service Parameters in Streaming
- › 2.6 Apply Statistical Tools for Performance Improvement

• 3 Evaluating Video Quality: Objective and Subjective Measures — 6

classes

- › 3.1 Define Key Concepts in Video Quality Assessment
- › 3.2 Explore Objective Video Quality Metrics
- › 3.3 Examine Subjective Video Quality Evaluation Techniques
- › 3.4 Compare Objective and Subjective Measures of Video Quality
- › 3.5 Analyze Case Studies in Video Quality Evaluation
- › 3.6 Implement a Video Quality Assessment Project

• 4 Benchmarking MPEG-4 Against Other Coding Standards**• 5 Strategies for Performance Improvement in MPEG-4 Implementations****• 1 Fundamentals of MPEG-4 Compression Techniques — 6 classes**

- › 1.1 Explore the Basics of MPEG-4 Compression Techniques
- › 1.2 Analyze the Key Components of MPEG-4 Encoding
- › 1.3 Investigate the Role of Video and Audio Coding in MPEG-4
- › 1.4 Demonstrate MPEG-4 Compression through Case Studies
- › 1.5 Evaluate the Impact of MPEG-4 on Multimedia Applications
- › 1.6 Apply MPEG-4 Techniques in a Practical Project

• 2 Understanding ISO 14496 Standards and Specifications — 6

classes

- › 2.1 Explain the Objectives of ISO 14496 Standards
- › 2.2 Identify Key Specifications of ISO 14496
- › 2.3 Describe the Structure of MPEG-4 Coding
- › 2.4 Analyze Use Cases for ISO 14496 Implementation
- › 2.5 Implement a Basic MPEG-4 Encoding Example
- › 2.6 Evaluate Compliance with ISO 14496 Standards

• 3 Implementing MPEG-4: Tools and Software — 6 classes

- › 3.1 Identify Key Tools for MPEG-4 Implementation
- › 3.2 Explore Software Options for MPEG-4 Coding
- › 3.3 Demonstrate Basic Setup of MPEG-4 Coding Software
- › 3.4 Analyze MPEG-4 Encoding Techniques and Settings
- › 3.5 Evaluate Output Quality of MPEG-4 Encoded Files
- › 3.6 Apply MPEG-4 Standards in a Practical Project

• 4 Quality Assessment and Optimization in MPEG-4 Implementations — 6 classes

- › 4.1 Define Key Quality Metrics for MPEG-4 Evaluation
- › 4.2 Analyze the Impact of Compression Techniques on Quality
- › 4.3 Explore Methods for Quality Assessment in MPEG-4
- › 4.4 Implement Quality Optimization Strategies in MPEG-4 Projects
- › 4.5 Conduct a Case Study on Quality Improvements in MPEG-4 Implementations
- › 4.6 Evaluate the Effectiveness of Quality Assessment Tools in MPEG-4

• 5 Case Studies in ISO 14496 Applications — 6 classes

- › 5.1 Analyze Key Features of ISO 14496 for Multimedia Coding
- › 5.2 Explore Real-World Applications of MPEG-4 in Video Streaming
- › 5.3 Evaluate the Impact of ISO 14496 on Digital Content Distribution
- › 5.4 Compare ISO 14496 with Other Multimedia Standards
- › 5.5 Implement a Simple MPEG-4 Encoding Project
- › 5.6 Present Case Study Findings on ISO 14496 in Industry

• 1 Fundamentals of Digital Audio and Video Coding — 6 classes

- › 1.1 Define Digital Audio and Video Coding Concepts
- › 1.2 Explore the Basics of MPEG-4 Framework
- › 1.3 Analyze Audio Encoding Techniques in MPEG-4
- › 1.4 Investigate Video Compression Methods in MPEG-4
- › 1.5 Compare MPEG-4 with Other Coding Standards
- › 1.6 Apply MPEG-4 Coding Principles in Practical Scenarios

• 2 Introduction to MPEG-4 and Its Architecture — 6 classes

- › 2.1 Define the MPEG-4 Standard and Its Key Features
- › 2.2 Explore the Architecture of MPEG-4 Components
- › 2.3 Analyze the Role of Coding Tools in MPEG-4
- › 2.4 Examine the MPEG-4 Data Representation Methods
- › 2.5 Discuss the Applications of MPEG-4 in Multimedia
- › 2.6 Evaluate the Impact of MPEG-4 on Media Standards

• 3 Encoding Techniques and Tools in MPEG-4 — 6 classes

- › 3.1 Define the Core Concepts of MPEG-4 Encoding
- › 3.2 Explore the Role of Compression in MPEG-4 Tools
- › 3.3 Identify Key Encoding Techniques Used in MPEG-4
- › 3.4 Analyze the Impact of Bitrate on MPEG-4 Quality
- › 3.5 Demonstrate Encoding Methods Using Software Tools
- › 3.6 Evaluate MPEG-4 Outputs Through Real-World Applications

• 4 Advanced Features of MPEG-4: Multimedia and Interactivity — 6 classes

- › 4.1 Explore the Fundamentals of Multimedia in MPEG-4
- › 4.2 Analyze the Role of Interactivity in MPEG-4 Applications
- › 4.3 Examine Key Features of MPEG-4 for Audio-Visual Content
- › 4.4 Demonstrate Implementation of Interactive Features in MPEG-4
- › 4.5 Evaluate User Experience in MPEG-4 Interactive Environments
- › 4.6 Create a Prototype Using Advanced MPEG-4 Multimedia Features

• 5 Implementing MPEG-4 and Future Trends — 6 classes

- › 5.1 Explore the Core Features of MPEG-4 Coding
- › 5.2 Analyze the Implementational Framework of MPEG-4
- › 5.3 Demonstrate Encoding Techniques in MPEG-4
- › 5.4 Evaluate MPEG-4's Performance Against Alternative Standards
- › 5.5 Identify Challenges and Solutions in Implementing MPEG-4
- › 5.6 Predict Future Trends in MPEG-4 Coding and Applications

• 1 Understanding ISO 14496: Framework and Principles — 6 classes

- › 1.1 Define the Scope and Importance of ISO 14496 in MPEG-4
- › 1.2 Explore the Core Principles of MPEG-4 Coding Standard
- › 1.3 Analyze the Key Components of the ISO 14496 Framework
- › 1.4 Identify Stakeholders Involved in MPEG-4 Projects
- › 1.5 Develop a Strategic Approach to Implement ISO 14496 Standards
- › 1.6 Evaluate Real-World Applications of ISO 14496 in Leadership Contexts

• 2 Strategic Leadership in Project Initiation and Planning — 6 classes

- › 2.1 Define Strategic Leadership and its Role in Project Initiation
- › 2.2 Identify Key Elements of Project Success during Planning Stages
- › 2.3 Analyze Stakeholder Influence on Project Initiation Processes
- › 2.4 Develop Effective Communication Strategies for Project Leadership
- › 2.5 Implement Risk Assessment Techniques in Project Planning
- › 2.6 Evaluate Team Dynamics and Leadership Styles for Project Success

• 3 Risk Management and Quality Assurance in MPEG-4 Projects — 6 classes

- › 3.1 Identify Risks in MPEG-4 Project Context
- › 3.2 Analyze Risk Impact on MPEG-4 Deliverables
- › 3.3 Develop Risk Mitigation Strategies for MPEG-4 Projects
- › 3.4 Implement Quality Assurance Processes in MPEG-4 Development
- › 3.5 Evaluate Quality Metrics for MPEG-4 Compliance
- › 3.6 Integrate Risk Management and Quality Assurance for Project Success

• 4 Stakeholder Engagement and Communication Strategies — 6 classes

- › 4.1 Identify Key Stakeholders and Their Interests
- › 4.2 Analyze Stakeholder Influence on Project Outcomes
- › 4.3 Develop Effective Communication Plans for Stakeholders
- › 4.4 Employ Active Listening Techniques in Stakeholder Meetings
- › 4.5 Utilize Feedback Mechanisms for Continuous Stakeholder Engagement
- › 4.6 Assess and Adapt Stakeholder Strategies Throughout the Project

• 5 Evaluating Project Outcomes and Continuous Improvement — 6 classes

- › 5.1 Define Key Performance Indicators for Project Success
- › 5.2 Analyze Project Outcomes Using Qualitative and Quantitative Metrics
- › 5.3 Conduct Stakeholder Reviews for Comprehensive Feedback
- › 5.4 Identify Areas for Improvement Through Gap Analysis
- › 5.5 Develop an Action Plan for Implementing Improvements
- › 5.6 Establish a Continuous Improvement Framework for Future Projects