**AWS Technical Essentials: Risk-Focused Outline**

**1: CLOUD FUNDAMENTALS AND AWS RESOURCE OVERVIEW**

* Cloud computing fundamentals
* AWS Resources Overview – EC2, RDS and S3 Resources
* Risk comparison: On-premises vs cloud environments
* Understanding shared responsibility model
* Cloud deployment models and associated risks
  + Public cloud risks
  + Private cloud risks
  + Hybrid cloud considerations
* Service model risk profiles
  + IaaS risk considerations
  + PaaS risk considerations
  + SaaS risk considerations
* AWS account security best practices

**2: RISK-AWARE ARCHITECTURE DESIGN**

* Multi-tier architecture security boundaries
  + Load Balancer and Target Group Planning
  + Elastic IP and Networking
* Multi-tenancy risks and mitigation strategies
* Scalability risk assessment
  + Capacity planning
  + Resource allocation risks
* Infrastructure automation security considerations
* Failure mode analysis
  + Single points of failure
  + Cascade failure risks
* Performance bottleneck risk assessment
* Architecture risk assessment checklist

**3: AWS COMPONENT RISK ANALYSIS**

* Critical AWS component assessment
  + Service-specific risks
  + Integration risks
  + Dependency risks
* Cost optimization vs security trade-offs
* Environment-specific risk profiles
  + Development
  + Staging
  + Production
* Infrastructure risk mapping

**4: SCALABILITY AND ASSOCIATED RISKS**

* Scalability using Horizontal and Vertical Scaling
* Risk-aware architecture scaling
  + Horizontal scaling security
  + Vertical scaling security
* AWS scaling service risk assessment
  + Auto Scaling security considerations
  + Load Balancer security

**5: HIGH AVAILABILITY AND RISK MITIGATION**

* Availability risk assessment
* Comprehensive failure analysis
  + Hardware failures
  + Software failures
  + Network failures
  + Human errors
* High availability implementation risks
* Redundancy security considerations

**6: SECURITY RISK MANAGEMENT**

* Security risk assessment methodology
* Security control implementation
  + Identity and Access Management
  + Network security
  + Data protection
  + Compliance requirements

**7: PRODUCTION DEPLOYMENT RISK MANAGEMENT**

* Operational risk assessment
* Deployment risk control
  + Change management
  + Version control
  + Rollback procedures
* Monitoring and alerting strategy using CloudWatch
  + CloudWatch risk metrics
  + Alert threshold setting
* Backup and archive risk assessment
  + Data classification
  + Retention policies
  + Recovery testing
* Production readiness risk checklist