1. **AWS Platform & Certification Overview –** *This section introduces the Amazon AWS platform focusing on application development. We look at the AWS Developer certification track and the prerequisites needed to pass the exam. Learn how to configure your workstation with the necessary tools to develop an application on AWS including command line interface (CLI), SDK for python and how to create an AWS Free Tier Account. During this lesson we will provision a new account for Widgets.com and configure our workstation to be able to use the AWS API.*
2. **Application Outline –** *This section introduces the requirements for the application we will be building during the course for Widgets.com, it will discuss the principles and techniques that will be used as well as the AWS ‘well architected’ framework*
3. **Security –** *Learn about the AWS Shared Responsibility Model, Amazon Identity and Access Management (IAM), Encryption Services, Cross account roles, hardware Security Models (CloudHSM), Security Groups and Network Access Control Lists. Complete this section by reviewing the Security and Compliance Whitepapers and understand core security best practices. During this lesson we setup all the necessary security controls (roles, security groups and key-pairs) to securely use the AWS platform.*
4. **Basic Landing Zone Design –** *Learn about the core AWS services required to start deploying an application including multi account design, VPC’s and networking, compute and storage and database. During this lesson we will configure the basic landing zone needed to support the application for Widgets.com***.**
5. **An introduction to CI/CD –** *Learn about the Continuous Integration and Delivery, how to use AWS platform tools such as Code Commit, Build and Pipeline to deploy and test code and infrastructure artifacts and how to use the API/SK to dive code commit.*
6. **Building our 1st web application** – *Learn how to build a simple web application using Amazon Simple Storage Service (Amazon S3) and Amazon DynamoDB as data stores for Widgets.Com and deep-dive into S3, DynamoDB and DAX*
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8. **Serverless 101** – *Learn about Serverless computing, Elastic Beanstalk and CloudFormation how to enhance our Widgets.com applications to use Elastic Beanstalk and CloudFormation*
9. **Authentication and Authorization -** *Learn about using Web Identity Framework and Amazon Cognito for user authentication and how to enhance our Widgets.com applications to use Cognito user pool.*
10. **Caching and Session management** - *Learn about scaling your web application horizontally, CORS and using Amazon CloudFront and Amazon ElastiCache. We will enhance our Widgets.com application to use CloudFront and Redis*
11. **Understanding Containers –** *Learn**how containers are used in development today, what is docker and how is it used and the various options to deploy containers in AWS. We will enhance our Widgets.com application to use a docker container.*
12. **Cloud Native Application Development –** *Learn how build a modern application leveraging microservice design principle and utilizing Amazon Kinesis, AWS Lambda, Amazon Simple Queue Service (Amazon SQS), Amazon Simple Notification Service (Amazon SNS), and AWS Step Functions, API Gateway. We will enhance our Widgets.com application to use a lambda and API Gateway.*
13. **Managing secrets and keys** – *Learn how handle encryption and secrets in applications using AWS KMS and systems manage. We will enhance our Widgets.com application to use a KMS to secure application data.*
14. **Monitoring and Metrics** *– Learn how to use various AWS monitoring tools including CloudWatch, CloudWatch Logs and ElasticSearch among others. Learn how to monitor availability and performance, manage billing and cost optimization strategies. We will enhance our Widgets.com application to use a CloudWatch Logs as the log repository*
15. **Exam Summary** – *This lesson summarizes the content presented in the previous lessons using the exam categories of Deployment, Security, Development with AWS Services, Refactoring and Monitoring and Troubleshooting*
16. **Whitepaper Review & Practice Exams** *– Review additional whitepapers to give you the edge needed to pass the AWS Certified Developer Associate exam and check your readiness against the Practice Exam questions*

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| * Ability to use or interact with AWS services * Ability to use the AWS service APIs, AWS CLI, and SDKs to write applications |
| * Ability to identify key features of AWS services, |
| * Understanding of the AWS shared responsibility model * Ability to write code using AWS security best practices (e.g., not using secret and access keys in the code, instead using IAM roles), |
| * Understanding of core AWS services, uses, and basic AWS architecture best practices |
| * Understanding of application lifecycle management * Ability to use a CI/CD pipeline to deploy applications on AWS * Proficiency in developing, deploying, and debugging cloud-based applications using AWS |
| * Ability to apply a basic understanding of cloud-native applications to write code |

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| * Ability to apply a basic understanding of cloud-native applications to write code * Proficiency writing code for serverless applications * Understanding of the use of containers in the development process |
| * Ability to write code using AWS security best practices (e.g., not using secret and access keys in the code, instead using IAM roles), |
| * Ability to author, maintain, and debug code modules on AWS, |
| * Passing the exam |