



## D485 Cloud Security

### Assessments:

DGN2 TASK 1: Cloud Security Implementation Plan And Presentation

**Average Completion Time:** 12 weeks

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### Course Prerequisites

- D483 Security Operations

### Course Description

Cloud Security prepares learners to design solutions for cloud-based platforms and operations that maintain data availability while protecting the confidentiality and integrity of information. Course topics include cloud service models, deployment methods, identity and access management (IAM) strategies, auditing and monitoring strategies, assessing and mitigating common cloud security threats, and managing compliance and regulation requirements. The course also offers hands-on experience deploying and assessing IAM controls in a cloud environment.

### Learning Objectives

- Design secure cloud solutions for data protection.
- Implements secure identity and access management cloud solutions for data protection.
- Analyzes a risk management plan for threat mitigation countermeasures in the cloud.

### Learning Resources

- Chapple, M., & Seidl, M. (2023). (ISC)2 CCSP certified cloud security professional official study guide. Sybex. (3rd ed.)  
<https://search.ebscohost.com/login.aspx?direct=true&db=nlebk&AN=3375845&site=eds-live&scope=site>
- Copeland, M., Soh, J., Puca, A., & Harris, M. (2020). Microsoft Azure: Planning, Deploying, and Managing the Cloud. (2nd Edition). Springer.  
<https://wgu.percipio.com/books/3066d572-95c9-49c4-ac7d->

9a3c35458b25#epubcfi(/6/4!/4/2[epubmain]/2[g4b3ab31c-3312-43db-ab7d-aa8b2115ff18]/2/2/1:0)

- Estrin, E. (2022). Cloud security handbook: Find out how to effectively secure cloud environments using AWS, Azure, and GCP. Packt Publishing.  
<https://search.ebscohost.com/login.aspx?direct=true&db=nlebk&AN=3198558&site=eds-live&scope=site>
- National Institute of Standards and Technology. (n.d.). NIST cybersecurity framework (CSF).  
<https://www.nist.gov/cyberframework>
- Various Linked Supplemental Activities in the Course Material and Resources to Support the Performance Assessment
- Instructor Cohorts

### Student Course Page (WGU Portal)

The WGU student portal course page has a lot of resources contained within it. Please review the following sections for more resources, information, and context related to the course.

- **Go to Course Materials:** This button will take you to the course materials such as the e-textbook.
- **Explore Cohort Offerings:** This button will allow the student to view the live cohort offerings and register for one or more cohorts that fit your schedule.
- **Instructor information:** This section will allow the student to review the assigned course instructor information, office hours, email, and appointment scheduling link.
- **Course Tips/Announcements:** These buttons will allow the student to review any tips or announcements from the instructor team related to the course.
- **Course Search:** This button will allow the student to review all the articles and additional resources posted by the instructor team for the course (this includes recorded cohorts, study guides, and other long-term tips).
- **Course Chatter:** This section allows students to post tips and ask general questions. This is a forum and is moderated by the instructor team. Not all advice works for all students, so students should use caution if following advice from other students. Course instructors can answer questions in course chatter. However, some questions are better suited on a one to-one basis with the student's instructor.

## Course Schedule

Week	Theme/Topic	Learning Outcomes
1	<p>Read the <a href="#">D485 Welcome Letter</a></p> <p><b>WATCH or ATTEND</b> Introductory D484 Course Cohort - <b>You can Register for a Live Session in your Course of Study.</b></p> <p><a href="#">D485 Introductory Cohort Recording</a></p> <p><b>Choose your Pacing Preference:</b></p> <p><a href="#">D485 - 8 Week Pacing Guide</a></p> <p><a href="#">D485 - 10 Week Pacing Guide</a></p> <p><a href="#">D485 - 12 Week Pacing Guide</a></p> <p><b><u>Course of Study – Section 1: Design Secure Cloud Solutions</u></b></p> <p><b>READ THE FOLLOWING:</b></p> <p><b>WELCOME TO CLOUD SECURITY</b></p> <p>OVERVIEW</p> <p>Welcome To Cloud Security</p> <p>Learning Resources</p> <p>Course Organization and Navigation</p> <p><b>SECTION 1: DESIGN SECURE CLOUD SOLUTIONS</b></p> <p>Overview</p> <p>Building Employability and Competency</p>	<p>Understand different business requirements in a given scenario.</p> <p>Describe and identify applicable NIST security standards.</p> <p>Understand the system with regard to confidentiality, integrity, and availability.</p>

Week	Theme/Topic	Learning Outcomes
	<p><b>LESSON 1: NIST SECURITY STANDARDS AND CLOUD ENVIRONMENT</b></p> <p>Lesson 1: Introduction</p> <p>Lesson 1.1: Business Requirements</p> <p>Lesson 1.2: NIST Requirements</p> <p>Lesson 1.3: Cia Triad</p> <p>Lesson 1: Summary</p> <p><b>DO: Lesson 1: Knowledge Check</b></p>	
2	<p><b>READ THE FOLLOWING:</b></p> <p><b>LESSON 2: SECURE CLOUD SOLUTIONS FOR COMPUTE, STORAGE, AND NETWORKING</b></p> <p>Lesson 2: Introduction</p> <p>Lesson 2.1: Mapping of Controls</p> <p>Lesson 2.2: Public Service Providers</p> <p>Lesson 2.3: Secure Compute Services</p> <p>Lesson 2.4: Secure Storage Services</p>	<p>Understand the mapping of controls to confidentiality, integrity, and availability of the business described.</p> <p>Understand the services available from the public service providers.</p> <p>Understand the types of secure compute service solutions.</p> <p>Understand the types of</p>

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	<p>Lesson 2.5: Secure Networking Services</p> <p>Lesson 2.6: IaaS</p> <p>Lesson 2: Summary</p> <p><b>DO: Lesson 2: Knowledge Check</b></p>	<p>secure storage service solutions.</p> <p>Understand the types of secure networking service solutions.</p> <p>Understand the service model of infrastructure as a service.</p>
3	<p><b>READ THE FOLLOWING:</b></p> <p><b>LESSON 3: NIST CONTROLS FOR SECURING COMPUTE, STORAGE, AND NETWORKING</b></p> <p>Lesson 3: Introduction</p> <p>Lesson 3.1: Industry Control Securing Compute</p> <p>Lesson 3.2: Industry Control Securing Storage</p> <p>Lesson 3.3: Industry Control Securing Networking</p> <p>Lesson 3: Summary</p> <p><b>DO: Lesson 3: Knowledge Check</b></p> <p>SUMMARY - Section 1 Summary</p> <p><b>DO: Section 1 Quiz</b></p>	<p>Describe potential industry control securing compute.</p> <p>Describe potential NIST control securing storage.</p> <p>Describe potential NIST control securing networking.</p>

Week	Theme/Topic	Learning Outcomes
4	<p><b><u>Course of Study – Section 2: Implement Secure Cloud Solutions</u></b></p> <p><b>READ THE FOLLOWING:</b></p> <p><b>SECTION 2 OVERVIEW</b></p> <p>Overview</p> <p>Build Employability Skills and Competence</p> <p><b>LESSON 4: FILE BACKUP AND THE CLOUD</b></p> <p>Lesson 4: Introduction</p> <p>Lesson 4.1: Action Plan from IT Assessment</p> <p>Lesson 4.2: Examine Current IT Infrastructure</p> <p>Lesson 4.3: Data Policy</p> <p>Lesson 4: Summary</p> <p><b>DO: Lesson 4: Knowledge Check</b></p>	<p>Create a plan of action based on a supplied third-party assessment.</p> <p>Examine the current IT infrastructure through the lens of the "five Rs."</p> <p>Create data and file backup policy.</p>
5	<p><b>READ THE FOLLOWING:</b></p> <p><b>LESSON 5: ROLE-BASED ACCESS CONTROL IN THE CLOUD</b></p> <p>Lesson 5: Introduction</p> <p>Lesson 5.1: RBAC</p> <p>Lesson 5.2: IAM and Azure Resources</p>	<p>Identify and understand RBAC in relationship with Azure or any service provider.</p> <p>Understand how IAM grants Azure resources.</p> <p>Understand how IAM assigns</p>

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	<p>Lesson 5.3: IAM Access</p> <p>Lesson 5: Summary</p> <p><b>DO: Lesson 5: Knowledge Check</b></p>	<p>access and enhances identity and access management.</p>
6	<p><b>READ THE FOLLOWING:</b></p> <p><b>LESSON 6: ENCRYPTION</b></p> <p>Lesson 6: Introduction</p> <p>Lesson 6.1: Azure Key Vault</p> <p>Lesson 6.2: Azure Key Vault and Encryption</p> <p>Lesson 6.3: NIST and Encryption</p> <p>Lesson 6: Summary</p> <p><b>DO: Lesson 6: Knowledge Check</b></p> <p><b>READ: SUMMARY - Section 2 Summary</b></p> <p><b>DO: Section 2 Quiz</b></p>	<p>Understand how to leverage Azure Key Vault.</p> <p>Understand how Azure Key Vault facilitates encryption in transit and rest in given scenarios.</p> <p>Understand the regulatory standards for encryption in a given scenario.</p>
7	<p><b><u>Course of Study – Section 3: Analyze Risk Management Plan</u></b></p> <p><b>READ THE FOLLOWING:</b></p> <p><b>SECTION 3 OVERVIEW</b></p>	<p>Understand the risks associated with the cloud model.</p>

Week	Theme/Topic	Learning Outcomes
	<p>Overview</p> <p>Build Employability Skills and Competence</p> <p><b>LESSON 7: RISKS AND THE CLOUD</b></p> <p>Lesson 7: Introduction</p> <p>Lesson 7.1: Risks and the Cloud</p> <p>Lesson 7.2: Risk Assessment Review</p> <p>Lesson 7.3: Azure Trust Center</p> <p>Lesson 7: Summary</p> <p><b>DO: Lesson 7: Knowledge Check</b></p>	<p>Review the most recent risk assessment for the company.</p> <p>Review Azure Trust Center compliance.</p>
8	<p><b>READ THE FOLLOWING:</b></p> <p><b>LESSON 8: MITIGATION COUNTERMEASURES</b></p> <p>Lesson 8: Introduction</p> <p>Lesson 8.1: Mitigation Countermeasures</p> <p>Lesson 8.2: Prioritize Spend</p> <p>Lesson 8: Summary</p>	<p>Understand mitigation countermeasures.</p> <p>Prioritize spend in regard to threat analysis in a given scenario.</p>



Week	Theme/Topic	Learning Outcomes
	<b>DO: Lesson 8: Knowledge Check</b>	
9	<b>READ THE FOLLOWING:</b> <b>LESSON 9: REDUCE VARIABILITY</b>  Lesson 9: Introduction  Lesson 9.1: Reduce Variability  Lesson 9.2: Threat Actors  Lesson 9.3: Apply Controls  Lesson 9: Summary  <b>DO: Lesson 9: Knowledge Check</b>  SUMMARY - Section 3 Summary  <b>DO: Section 3 Quiz</b>	<p>The learner recommends tools, services, and strategies that reduce variability.</p> <p>Identify threat actors that could exploit vulnerabilities or flaws present in the infrastructure.</p> <p>Apply controls and countermeasures that would lessen the severity of untended events and threats.</p>
10	<b>READ THE FOLLOWING:</b> <b>COURSE SUMMARY AND NEXT STEPS</b>  COURSE SUMMARY  Course Summary	
11	<b>Performance Assessment</b>	Designs Secure Cloud Solutions

Week	Theme/Topic	Learning Outcomes
	<p><b>DGN2 TASK 1: CLOUD SECURITY IMPLEMENTATION PLAN AND PRESENTATION (If your Task shows DGN1 – contact your Course Instructor).</b></p> <p><b>Complete the D485 Task in 5 days after working through your Course Material. Follow the 5 day plan</b>  <a href="#">D485 - PERFORMANCE ASSESSMENT 5 DAY PLAN</a></p> <p><a href="#">D485 - DGN2 TASK GUIDE</a></p> <p><a href="#">D485 - DGN2 TASK TEMPLATE</a></p> <p><b>Submit DGN2 Task 1: Cloud Security Implementation Plan</b></p>	<p>Implements Secure Cloud Solutions</p> <p>Analyzes Risk Management Plan</p>
12	Performance Assessment Revisions if Needed	