**Course Addendum for BTM410 – Cloud Technologies**

**Semester:** Winter 2025  
**Subject Code:** BTM410  
**Subject Title:** Cloud Technologies  
**Professor:** [Your Name Here]  
**Office:** Online  
**Email:** [Your Email Here]  
**Office Hours:** 1 hour before/after class or by appointment

**Approved by:**  
[Chair's Name], School of Information Technology Administration and Security

**Overview**

This addendum supplements the general course outline for BTM410. It provides guidance on the course structure, evaluation methods, and expectations.

For the official course description, learning outcomes, and required materials, please refer to the general course outline or contact your professor.

**Assessment Summary**

* **Quizzes (minimum 4):** 20%
* **Test:** 30%
* **Labs (minimum 8):** 15%
* **Projects (minimum 2):** 25%
* **Management of Resource Allocation:** 10%

**Course Policies**

1. **Minimum Performance Criteria:**
   * Achieve a weighted average of 50% or higher across all assessments.
   * To achieve full marks, students must satisfactorily complete at least 8 out of 10 labs, 2 projects, and 4 out of 5 quizzes.
2. **Resource Allocation Evaluation:**
   * Full marks are awarded for completing all labs and practical assignments within allocated credits.
   * Unfinished tasks are graded 0, impacting overall course standing.
3. **Late Submission Policy:**
   * **Penalty:** 10% deduction per day (maximum of 3 days).
   * **After 3 Days:** A grade of 0 is awarded.
   * Extensions must be requested *prior to the due date*. Otherwise, the late policy applies.

**Weekly Schedule (Tentative) [The detailed version will be in the following]**

**Week 1: Introduction to Cloud Computing and Key Concepts**

**Week 2: Cloud Architectures and Design Strategies**

**Week 3: Cloud Deployment Models (Public, Private, Hybrid)**

**Week 4: Introduction to Major Cloud Providers and Services**

**Week 5: Cloud Security and Compliance Essentials**

**Week 6: Cost Management in Cloud Environments**

**Week 7: Midterm Review and Testing, Test-1 15%**

**Week 8: Disaster Recovery in Cloud Environments**

**Week 9: Scalability in Cloud Solutions**

**Week 10: Serverless Architecture and Applications**

**Week 11: Integration Project: Cloud System Design**

**Week 12: Integration Project: Testing and Deployment**

**Week 13: Cloud Monitoring, Optimization, and Reporting**

**Week 14: Final Assessment**

**Detailed Weekly Schedule (Tentative)**

**Week 1: Introduction to Cloud Computing and Key Concepts**

* **Topics:**
  + Benefits of cloud computing (e.g., High Availability, Scalability, Elasticity, Agility).
  + Differences between Capital Expenditure (CapEx) and Operational Expenditure (OpEx).
  + Cloud service models (IaaS, PaaS, SaaS).
  + Shared responsibility model.
* **Activities:**
  + Class discussion on the evolution of cloud computing.
  + Overview of use cases for cloud services.
* **Assessment:** None.

**Week 2: Cloud Architectures and Design Strategies**

* **Topics:**
  + Cloud architectural components.
  + Regions, Availability Zones, and Resource Groups.
  + Subscriptions and Management Groups.
  + Azure Resource Manager and its role in cloud design.
* **Activities:**
  + Interactive lab setup and cloud resource exploration.
* **Assessment:** None.

**Week 3: Cloud Deployment Models (Public, Private, Hybrid)**

* **Topics:**
  + Definition and comparison of deployment models.
  + Use cases for each model in enterprise scenarios.
  + Transitioning between deployment models.
* **Activities:** Lab-1 (Setting up and exploring different deployment models).
* **Assessment:**
  + **Lab-1:** 1.5%
  + **Quiz-1:** 4%.

**Week 4: Introduction to Major Cloud Providers and Services**

* **Topics:**
  + Overview of leading cloud providers (e.g., AWS, Azure, Google Cloud).
  + Comparing services and vendor strengths.
  + Introduction to cloud marketplaces.
* **Activities:** Lab-2 (Exploring cloud provider service offerings).
* **Assessment:**
  + **Lab-2:** 1.5%.

**Week 5: Cloud Security and Compliance Essentials**

* **Topics:**
  + Basic features of Azure Security Center.
  + Key Vault, Azure Sentinel, and Azure Dedicated Hosts.
  + Security alerts, policy compliance, and secure score.
* **Activities:** Lab-3 (Configuring basic security features).
* **Assessment:**
  + **Lab-3:** 1.5%.

**Week 6: Cost Management in Cloud Environments**

* **Topics:**
  + Factors affecting costs (resource types, regions, ingress/egress).
  + Tools for cost optimization (Azure Cost Management, Pricing Calculator, TCO Calculator).
* **Activities:** Lab-4 (Calculating and optimizing costs).
* **Assessment:**
  + **Lab-4:** 1.5%
  + **Quiz-2:** 4%
  + **Project-1:** 12.5% (released).

**Week 7: Midterm Review and Testing**

* **Topics:**
  + Comprehensive review of Weeks 1–6.
* **Assessment:**
  + **Test-1:** 15%.

**Week 8: Disaster Recovery in Cloud Environments**

* **Topics:**
  + Backup strategies and recovery objectives (RPO/RTO).
  + Configuring disaster recovery solutions in Azure.
* **Activities:** Lab-5 (Setting up disaster recovery solutions).
* **Assessment:**
  + **Lab-5:** 1.5%
  + **Project-1:** 12.5% (due).

**Week 9: Scalability in Cloud Solutions**

* **Topics:**
  + Horizontal and vertical scaling.
  + Load balancing and elastic resource allocation.
* **Activities:** Lab-6 (Configuring autoscaling policies).
* **Assessment:**
  + **Lab-6:** 1.5%
  + **Quiz-3:** 4%.

**Week 10: Serverless Architecture and Applications**

* **Topics:**
  + Introduction to Functions-as-a-Service (FaaS).
  + Event-driven architectures.
  + Serverless application deployment.
* **Activities:** Lab-7 (Deploying a serverless application).
* **Assessment:**
  + **Lab-7:** 1.5%
  + **Project-2:** 12.5% (released).

**Week 11: Integration Project: Cloud System Design**

* **Topics:**
  + Finalizing cloud solution architectures.
  + Integrating compute, storage, and networking components.
* **Activities:** Lab-8 (Setting up system infrastructure).
* **Assessment:**
  + **Lab-8:** 1.5%
  + **Quiz-4:** 4%.

**Week 12: Integration Project: Testing and Deployment**

* **Topics:**
  + Functional testing and performance benchmarking.
  + Deploying systems in a simulated production environment.
* **Activities:** Lab-9 (Testing and deployment scenarios).
* **Assessment:**
  + **Lab-9:** 1.5%.

**Week 13: Cloud Monitoring, Optimization, and Reporting**

* **Topics:**
  + Tools for monitoring performance and cost (Azure Monitor, Log Analytics).
  + Reporting and presenting system performance metrics.
* **Activities:** Lab-10 (Configuring monitoring tools and generating reports).
* **Assessment:**
  + **Lab-10:** 1.5%
  + **Quiz-5:** 4%
  + **Project-2:** 12.5% (due).

**Week 14: Final Assessment**

* **Topics:** Final review and comprehensive evaluation.
* **Assessment:**
  + **Test-2:** 15%.

**Academic Integrity**

Students must adhere to Seneca’s **Academic Integrity Policy**. Violations include plagiarism, cheating, and unauthorized collaboration, which will result in penalties as outlined in the policy.