



**UNIVERSITY OF**  
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SCHOOL OF INFORMATION AND TECHNOLOGY

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## SYSADM1 – Physical Infrastructure

### Instructions:

Answer the following questions based on Week 3 Lecture notes.

1. Identify potential issues in physical infrastructure setups and propose solutions to optimize performance or reduce costs
  - Issues with physical infrastructure configurations include excessive operating costs, ineffective resource allocation, and device breakdowns. Organizations should use virtualization technology and redundancy measures to maximize performance and cut expenses.
2. You are a project manager responsible for implementing a new infrastructure project, such as a smart city initiative or a digital transformation strategy.
  - A. What IT systems and technologies are necessary to support the project's objectives?
    - Smart city projects involve the use of important IT systems and technologies such as IoT devices, cloud computing, analytics tools, 5G communication networks, artificial intelligence, machine learning, and cybersecurity solutions for real-time data collecting, scalable storage, and improved decision-making.
  - B. How can the IT infrastructure be designed to be scalable and flexible?
    - A scalable and flexible IT infrastructure uses modular design, cloud services, virtualization, containerization, open standards, and APIs to allow growth, integration, and flexibility to future advances in technology and project needs.
  - C. What are the potential security risks and vulnerabilities, and how can they be addressed?
    - Smart city and digital transformation initiatives are vulnerable to security threats such as illegal access to IoT devices, data breaches, and cyberattacks. To prevent these risks, firms should use multi-layered solutions like as encryption, powerful authentication, regular inspections, intrusion detection systems, staff training, and incident response plans.
  - D. How can the IT infrastructure be integrated with existing systems and processes to minimize disruption?
    - In order to successfully integrate new IT infrastructure with current systems, organizations need to evaluate their capabilities, create a detailed plan, involve stakeholders early on, take a phased approach, and give end users the necessary support and training to ease the transition and cause the least amount of disruption.