IT Capstone Topic Approval Form

The purpose of this document is to help you clearly explain your capstone topic, project scope, and timeline and to ensure that they align with your degree emphasis. Without clearly addressing each of these areas, you will not have a complete and realistic overview of your project, and your course instructor cannot accurately assess whether your project will be doable for the purposes of these courses.

Of course, if this a project that you have already completed at work or elsewhere, this should be easy to fill in! Most students use a project that they have already completed in the past year or two. In that case, you will write the proposals (Tasks 1 and 2) as if the project has not been done yet, and Task 3 as the complete post-implementation report.

Complete this form and send it (via UGCapstoneIT@WGU.edu) to your course instructor for approval. Once approved, you will receive a signed document in PDF format that you can upload as part of Task 1.

DEGREE EMPHASIS: Network Operations & Security

ANALYSIS:

Project Topic – Internal Corporate Network Upgrade & Repair

Problem Statement or Project Purpose –Derby City LLC is a small engineering support services company with its headquarters in Louisville, KY. Derby City LLC currently employs 37 people and successfully serves 79 distinct customers. The problem Derby City LLC is facing is that employees have made several complaints pertaining to slow connections to on premise network storage, random and consistent disconnects from company wi-fi, slow and inconsistent throughput to the internet, and several department leads have complained that employees have unfettered access to network resources they have connected for their departments use only. These items are problem because Derby City needs to insure employees have reliable high-speed internet so that they can maintain effective communications with their customer base; some customers have complained when these issues affect their meeting times with Derby City representatives.

DESIGN and DEVELOPMENT:

Project Scope

a. **Project Goal(s) and Supporting Objectives** –
   i. The overarching goal of this project is to provide Derby City LLC with reliable & secure internal networking, Wi-Fi, and data control.
      1. Objective 1: Site Survey
      2. Objective 2: Purchase Hardware Identified for replacement
      3. Objective 3: Hot/Warm Installation & Configuration of Purchased Equipment
      4. Objective 4: ISP Packages Upgrade to 5 Gbps.
      5. Objective 5: Network Testing
      6. Objective 6: Go Live
b. **Project Outcomes and Deliverables** –
   i. Objective 1 Deliverables:
      1. Updated Network Topology
      2. Site Map
      3. Rack Elevation
      4. Network Inventory
   ii. Objective 2 Deliverables:

1. Cisco 4000 Series ISR
2. Cisco Catalyst 9400 Series Switches
3. Cisco Catalyst 9166 AP
4. Cat 8 Ethernet Cable
5. RJ-45 & RJ-11 Shielded Connectors
   iii. Objective 3 Deliverables:
1. Configured Router, Configured Switches, Configured AP's
2. VLANs for departmental data security & bandwidth segmentation
3. Installed Cabling
4. Configuration Files
   iv. Objective 4 Deliverables:
1. ISP SLA & Terms / Contract
   v. Objective 5 Deliverables:
1. Detailed System Test Report
   vi. Objective 6 Deliverables:
1. Legacy Router, Switch, and AP Carcass returned to IT for disposition
2. New equipment is up and running without issue.

   c. **Projected Project End Date** –15 June 2023

IMPLEMENTATION and EVALUATION:

Describe how you will approach the execution of your project – I will execute the implementation of this project in several phases. In phase 1 our team will conduct research and development which includes site surveys and inventories, phase 2 will require our team to purchase materials and assign resources based on the phase 1 findings. Phase 3 will be our implementation phase where systems will be installed and configured, phased 4 will be our test and evaluation phase.

      To evaluate the success of our project will compare past internet/intranet throughput measurements with post implementation measurements, we will also compare the number of trouble tickets submitted to the IT department past and post implementation, and finally we will also conduct a series of tests to ensure that segmented VLAN traffic stays on its intended VLAN.

✓ **This project does not involve human subjects research and is exempt from WGU IRB review.**

COURSE INSTRUCTOR SIGNATURE:

COURSE INSTRUCTOR APPROVAL DATE: