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 assure that they align with your degree emphasis. Without clearly naming each of these areas, you will not have a complete and realistic overview of your project, and it cannot be accurately assessed 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 do use a project they have already completed in the past year or two. In that case you will write the proposal as if it has not been done yet, and the report is the complete after-implementation report. If you have *not* yet done your project, this document can help us make sure the scope is doable.

DEGREE EMPHASIS: IT-Security

ANALYSIS:

Project Topic – City Action Agency, a non-profit center which helps people who are in low income areas, received a grant to update and upgrade their computer network.

Problem Statement or Project Purpose – City Action Agency started as a small, one-person operation. They have since grown into a company with seven employees, with plans to hire three more by years end. Employees work in office and from home quite often. Because of this growth, the need to update their computer network is imperative. City Action Agency hosts underserved people and gives them interview training and has 5 dedicated computers to use for job searching. They need to make sure their administrative computers and servers cannot be accessed from these machines. City Action Agency also has an un-secured Wi-Fi network that is part of the main network. They need a separate wireless network to offer their guests, and this needs to be secured so no access to the administrative computers and servers is allowed. They have hired Electronica Networking to audit and create the new network.

DESIGN and DEVELOPMENT:

Project Scope

   a. Goals and Objectives –
       1. Inspect the current WAN link and research what improvements can be made with the ISP. Order a second WAN link with a separate provider for redundancy.
       2. Audit the current network configuration and find the weak points of congestion and security vulnerabilities.
       3. Upgrade the network with proper equipment to make sure client and customer data is kept confidential.
       4. Prep the new network for new employees as they are hired

b. Project Outcomes and Deliverables –
1. Faster internet connectivity with main ISP, as well as a new, second connection with a separate ISP for redundancy.
2. Build a new network that includes security appliances such as a Cisco Integrated Services Router, firewall, VPN services, and managed switches. City Action Agency is not concerned with other IT infrastructure like printers, servers and work stations at this point.
3. Divide the network into separate VLANS to insure security and privacy for the admin computers and servers.
4. Build a wireless network on a separate VLAN for customers and clients.
5. Establish an SSL Clientless VPN tunnel to new router so employees can access files from home securely.
6. Extend the network by placing dedicated CAT6 runs to RJ45 jacks where future employees will sit.

c. Projected Project End Date – The project should be completed within two weeks of the initial audit. Approximately January 24, 2019. This will give Electronica Networking time to audit the existing network, order material for the upgrade, and install and configure the new equipment.

IMPLEMENTATION and EVALUATION:

Describe how you will approach the execution of your project – I will approach the execution of this project in several stages:

1. Engage with external ISPs to determine the maximum amount of bandwidth at the best price and make sure these new connections are working properly at the Minimum Point of Entry at the building.
2. Get a comprehensive look at the existing network. Inventory equipment in use and physically check the copper connections from the RJ45 jacks back to the IDF where the router and switch rack is.
3. Logically diagram the new network and extensively label ALL connections.
4. Physically build the new network and extensively label ALL connections.
5. Configure new equipment and verify connectivity to all workstations and servers.

COURSE MENTOR NAME:

_____

COURSE MENTOR APPROVAL DATE:

_____