

# **AVTEC Technical Infrastructure Plan**

## **Purpose**

The AVTEC Information Technology Services Department (ITS) maintains all ITS resources to ensure the privacy, safety, and security of data contained within AVTEC's network while also providing reliability and emergency backup for all technical services.

## **Stakeholders**

- AVTEC Students
- AVTEC Staff and Faculty
- AVTEC Visitors and Guests

## **Scope of Services**

The AVTEC Information Technology Services Department maintains all hardware, software, and network operations of the IT systems on campus.

These responsibilities include

- Installation and maintenance of information technology infrastructure
- Daily and scheduled updates, backups, and maintenance of equipment and software
- Data privacy and storage
- Hardware repair of information technology systems and resources as needed
- Lifecycle purchasing and replacement process

## **Staff Responsible**

The AVTEC Information Technology Services staff consists of the following positions:

- 1 Data Processing Manager I/Department Head – Responsible for overseeing the IT department, creating plans for technology advancement, and collaborating with staff on IT infrastructure upgrades
- 1 Internet Specialist I – Responsible for creating and maintaining public and internal websites
- 2 Microcomputer/Network Specialist I – Responsible for daily IT operations including network and server maintenance, backups, and endpoint management.
- 1 Learning Management Instructor- Responsible for daily operations of AVTEC's online learning management system, including training and support.

The ITS staff are dedicated to ensuring seamless operation of the IT system. The Data Processing Manager I/Department Head may work after-hours as needed to ensure operations of critical equipment and critical issues are resolved. They have access to all necessary supplies, equipment, and personnel to resolve any IT emergencies that may arise on campus.

The ITS Department is fully prepared with the resources necessary to maintain and repair the IT infrastructure. The department is equipped with an extensive range of tools and equipment, including specialized tools for monitoring, diagnosing, repairing, and installing IT network

switches, wireless units, and servers. Staff members have access to a company vehicle for travel between buildings as required. For more complex technical maintenance and repairs, AVTEC may engage external specialists to ensure that all work is completed to the highest standards. The procurement of outside contractors for larger projects follows the State of Alaska's procurement procedures and policies.

## **Major Activities**

IT staff perform maintenance tasks assigned daily by the ITS Department Head. Maintenance requests are submitted through an online work order system maintained by the IT Department.

The IT infrastructure, including switches and wireless access points, is closely monitored by ITS staff through remote means, either from the IT building or through secure internet-based remote desktop protocol (RDP) access. This allows for real-time monitoring of system performance and enables ITS staff to make changes and modifications to the system from their office or even from home when on call resulting in greater efficiency and faster response time.

AVTEC ensures the secure storage of all staff and student information within its IT infrastructure, protected by internet firewalls. Public servers are located in a secure subnet (DMZ) while internal servers are blocked from outside access and secured by private networks. Access to network resources is granted to staff, students and guests/visitors with password-protected accounts that follow industry standard expiration policies. Data traffic is separated through designated routers for staff and student use. User privileges are assigned based on job responsibilities and are deactivated/deleted upon separation from AVTEC.

Implementation of redundant infrastructure safeguards data and operations from hardware failure. Multiple hardware systems perform the same task to ensure resource availability even in case of system failure. Regular backup schedules using industry-standard security and technology preserve all data daily. Backup data is recovered from various storage arrays, NAS Clusters, and network infrastructure in case of equipment failure. AVTEC deploys multiple site storage arrays for quick recovery in case of primary backup system failure. User PC's are also backed up automatically using these same storage arrays for quick recovery in case of user or hardware failure.

AVTEC uses Moodle as its learning management system, which students use for assignments and course content. This system is hosted on campus and is backed up daily to ensure data can be restored in the event of failed hardware or disk corruption, or failed operating system updates.

AVTEC maintains an inventory of all workstations, laptops, printers, and network equipment using network monitoring tools.

## **Evaluation**

It is expected that all necessary IT resources and infrastructure used to support regular training and administrative operations is always working at full capacity during work/training hours. The effectiveness is measured using metrics such as network downtime percentage, equipment failure incidents, emergency callouts, ITS staff time spent on repairs, and premature equipment failures due to lack of preventative maintenance. The AVTEC Technical Infrastructure Plan is evaluated

annually by the ITS Department. Modifications to the plan may occur at any time as a result of knowledge gained through usual operations. Key aspects of technology operations include preventative maintenance, software updates, and patches. The goal is to minimize equipment or software failure within the expected service-life of equipment.

### **Communication**

This plan is reviewed annually by Administration and the Information Technology Services Department. It is available to all staff and students on the AVTEC public website.

### **Budgetary Resources**

AVTEC's Technical Infrastructure is funded through the annual operational budget to support technology initiatives and operations of the IT department. Administration reviews the status of facilities, maintenance priorities, as well as current and future projects to evaluate needs and other costs associated with the implementation and maintenance of technology systems.