

# Classification and Qualification



# STANDARDS

The California State University System

## Information Technology Series Introduction

The Information Technology Classification Series is a set of six classification:

Class Title	Class Code	Date Established	Date Revised
Analyst/Programmer	0400-0402	4-1-96	N/A
Operating Systems Analyst	0410-0412	4-1-96	N/A
Information Technology Consultant	0420-0422	4-1-96	N/A
Network Analyst	0430-0432	4-1-96	N/A
Equipment/Systems Specialist	0440-0442	4-1-96	N/A
Operations Specialist	0450-0452	4-1-96	N/A

The information technology classification series includes positions in the computing infrastructure, data and voice communications, media, including instructional development and broadcasting, and academic and department-based technology. Each classification includes the multiple information technology disciplines of data, voice, and video technologies.

Positions classified within the information technology series are directly responsible for developing, providing, integrating, and/or supporting information technology-based solutions and systems. The series is intended for positions whose primary functional purpose and requisite skill sets are information technology-based. In determining whether a position is appropriate for an information technology classification, the following questions are important to consider:

- What is the primary functional purpose of the position? Is it to develop, provide, or support technology-based solutions or systems or does it use these systems as tools to achieve results?
- What are the critical skill sets to perform the position's responsibilities? Are the primary skill sets information technology-based? What is the relative importance of subject matter expertise in other functional areas?

The information technology series is structured to meet continuing changes in technology and organizational structure. Work within each classification is organized into **core functions** with typical activities and **core skills**. Additionally, a position may have **cross functions** and **project/lead functions** assigned to meet specific campus needs. The skill level definitions in this introduction apply to all of the classifications within the information technology series. The key components of the information technology classification series are defined below:

### CORE FUNCTION

Each of the six classifications in the series has identified core functions. A core function is a major category of work within a broadly defined classification. Each core function includes descriptions of typical work activities and core technical skills without regard to value or skill level. A position in an information technology classification has the majority of its ongoing work assignments in one or more of the core functions defined for that classification; however, work assignments from a related classification in the information technology series may also be included. *Work examples and core technical skills cited in the classification standard are illustrative to assist in the classification process and are not intended to be prescriptive.*

The six classifications in the information technology series and their core functions are summarized as follows.

**Analyst/Programmer:**

Analyzes and develops systems and technology-based solutions to meet user needs including applications, databases, and related systems. The core functions for Analyst/Programmer are:

- Systems analysis and development
- Applications programming
- Database analysis

**Operating Systems Analyst:**

Responsible for operating systems and their interfaces to all other multi-disciplinary systems. The core functions for Operating Systems Analyst are:

- Operating systems analysis
- Operating systems administration

**Information Technology Consultant:**

Provides consultative support to students, staff, and faculty to enhance the use and access of technology and information systems. The core functions for the Information Technology Consultant are:

- User consultation
- Site administration
- Development

**Network Analyst:**

Provides engineering, analysis, and support of all networks carrying voice, data, video, or broadcast transmissions. The core functions for the Network Analyst are:

- Network planning and implementation
- Network analysis and management
- Network administration and support

**Equipment/Systems Specialist:**

Responsible for installation, modification, and maintenance of equipment and systems with a hardware and systems configuration focus. The core functions for the Equipment/Systems Specialist are:

- Equipment services
- Systems integration

**Operations Specialist:**

Responsible for the effective operation, monitoring, and control of multisystem information systems in data, voice, or video processing. The core functions for the Operations Specialist are:

- Technical operations
- Operations support
- Operations analysis

**CROSS FUNCTION**

Cross functions are work assignments outside of the classification where the majority of work is performed. They are core functions from another classification within the information technology series that may be used to promote skill development or meet unique department needs.

**PROJECT COORDINATION/LEAD FUNCTIONS**

Project coordination/lead functions include responsibilities for technical coordination of projects and/or providing work direction to others. These responsibilities are in addition to those included in the core skills and core functions of the individual classification. Assignment of these functions will be based on the following criteria.

**Technical Project Coordination:**

The project assignment must include the full scope of responsibility and accountability for a technical project including feasibility studies; project design and planning; ongoing resource, materials, and time management; and implementation. The project must have a tangible, measurable outcome, a duration of six months or more, and a scope that is moderately complex to complex involving interdepartmental and multidisciplinary coordination.

**Lead:**

Lead work assignments must include direction to ongoing regular administrative, technical, or professional staff (this excludes student assistants). Lead work direction must include the full scope of responsibilities: evaluating and setting work priorities; scheduling and assigning work; reviewing work against standards and providing performance feedback; and determining training needs and training staff.

**SKILL LEVEL DEFINITIONS**

Three broad skill levels are defined for the information technology series: Foundation, Career, and Expert. The factors used to determine different skill levels include technical know-how, critical thinking skills, and interaction capabilities.

A position is placed at a skill level based on the skill requirements of the position. An individual may be working at different skill levels in various work assignments or skill dimensions; however, the overall skill level determination is based on where the majority of the skill requirements fall in the skill level continuum.

The following skill level definitions apply to all six classifications within the series. It is important to note these definitions do not delineate entry requirements at each level, but are composites of the typical incumbent at each level. Entry qualifications are identified within each standard for initial entry into each classification at the foundation level.

**Foundation:**

Incumbents at this level meet the entry qualifications as defined by the individual classification. The incumbent may be inexperienced or have limited experience in the specific technical field, but usually possesses the general education, training, license or certification pertinent to the body of knowledge encompassed by the technical specialty. Typically, the incumbent works under direct supervision and is able to demonstrate a basic understanding of the standard principles and terminology associated with the technical specialty, address common problems of limited scope, and demonstrate work-ready communication skills.

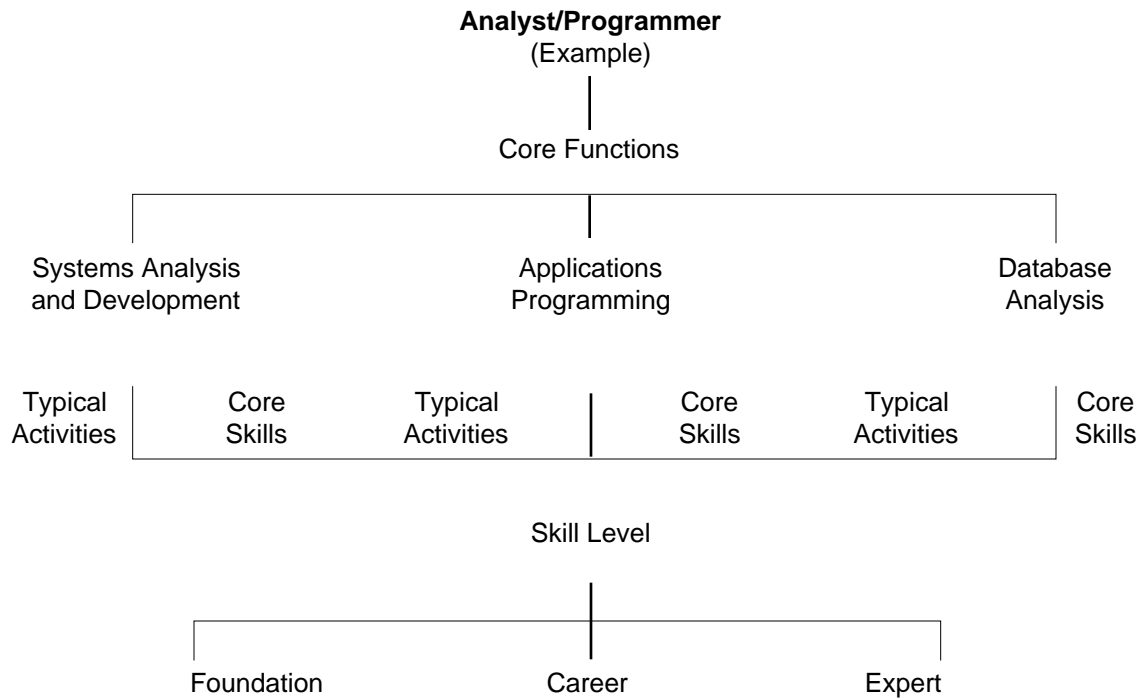
**Career:**

The career level is broad and includes intermediate through senior level positions. Incumbents at this level work relatively independently and possess the experience to be fully proficient in performing most or all of the work assignments defined for their position. Typically, incumbents have acquired the requisite skills and knowledge through a combination of education, training, and progressive work experience to be able to demonstrate competence in independently applying technical judgment to standard and nonstandard applications and systems, solving a wide range of problems and developing practicable and thorough solutions, and using effective communication and listening skills.

**Expert:**

Incumbents at the expert level work almost completely independently on the most complex problems and work assignments. They possess an advanced and comprehensive knowledge of the technical specialty and a working knowledge of related specialties and are able to apply this extensive expertise as a generalist or specialist. Experts are proactive and understand problems from broad, interactive perspective and are able to develop solutions that combine information and ideas in new, unprecedented ways. Incumbents at this level are capable of leading teams and implementation efforts for assigned projects using advanced communication and listening skills.

## CLASSIFICATION SERIES OVERVIEW



## CLASSIFICATION PROCESS

The classification process requires an analysis of both a position's work assignments and the skills required to perform the work. Following is a summary of the classification and skill level determination process.

- (1) Review the position's primary work assignments and categorize them into appropriate core functions. The position is then assigned to one of the six classifications in the information technology series based on where the majority of work assignments fall.
- (2) Identify work assignments that fall outside of the designated classification. If appropriate, these work assignments may be categorized as cross functions and/or project coordination/lead functions.
- (3) Identify the skills necessary to perform all work assignments and determine the appropriate skill level based on the total set of skills required for the position compared against the skill level definitions.

# Classification and Qualification



# STANDARDS

The California State University System

## Information Technology Series Operations Specialist

### CLASSIFICATION OVERVIEW

Position in this classification are primarily responsible at varying levels for the effective operation, monitoring, and control of multisystem information processing or transmission equipment. Types of systems and equipment supported may include mainframe consoles, on-line terminals, peripheral equipment (e.g., tape drives, printers), micro/mini computers, super computers, network devices, file servers, telecommunication systems and devices, and media production and broadcast equipment.

Positions in this classification typically reside in central computing, telecommunications, network, or media operations. In some cases, this classification may be found in administrative or academic departments where complex, integrated systems have been developed independent of centralized operations requiring dedicated technical operations support staff. Typical titles include: Computer Operator, Network Operator, TV Production Operator, Telecom Operator and Computer Operations Analyst.

### ENTRY QUALIFICATIONS

To enter this classification, a basic foundation of knowledge and skills in information processing and/or transmission equipment and the ability to read and interpret descriptive and quantitative information (e.g., technical manuals, equipment diagrams, and specifications) is required. In addition, a basic knowledge of mathematics and written and oral communication skills is necessary to communicate and document operational information. This foundation would normally be obtained through a general high school education and limited experience in related technical operations. Directly related coursework applicable to the position's area of technology may be preferred.

Further progress within this classification is based on department need and work assignments requiring higher levels of skills and knowledge. Based on position requirements, it may be appropriate to obtain formal educational or theoretical background in industrial technology, communication, electronics, or related technical fields. *Refer to the Information Technology Series Introduction for level definitions.*

### CORE FUNCTIONS

The core functions of the Operations Specialist are:

- Technical Operations
- Operations Support
- Operations Analysis

These core functions represent major categories of work within the Operations Specialist classification. Typical activities and core skills for each core function cited below are illustrative; campus assignments may vary.

## **CORE FUNCTION**

### **Technical Operations**

#### **Examples of Typical Activities:**

##### **Multi-System Operation:**

Ensure effective operation of assigned systems and equipment. Examples of typical work activities include:

- Operate multiple systems (e.g., mainframe consoles, peripheral equipment, telecommunication devices, broadcast equipment), and/or operate and monitor network devices (e.g., multiplexors and router, file and print servers, port selectors, and other communication devices), and/or operate media origination and transmission or broadcast equipment (e.g., video recorders, cameras, switches, modulators, transmitters);
- Verify systems and network availability and respond to error messages;
- Calibrate, adjust, and align equipment;
- Perform backup/recovery procedures;
- Reset malfunctioning lines or connections;
- Ensure that operations documentation and procedures are accurate and current, and

##### **System Maintenance and Administration:**

Ensure that all equipment or system components are adequately maintained. Examples of typical work activities include:

- Conduct preventative maintenance and cleaning of equipment and facilities;
- Perform minor or simple repairs;
- Analyze system or equipment problems and request repair service as required;
- Determine points of equipment and/or program failure and work with analyst or vendors to resolve problems;
- Maintain user accounts;
- Update system messages;
- Maintain line location records;
- Assemble support facilities.

##### **Security:**

Ensure that physical equipment, systems, and data or products are secured and undamaged. Examples of typical work activities include:

- Monitor authorization levels for system access and/or equipment usage;
- Develop or recommend department security policies and procedures;
- Monitor environmental conditions;
- Enforce physical security of equipment and materials;
- Administer alarm systems.

## **CORE SKILLS**

### **Technical Operations**

- Knowledge of applicable system and related technical terminology, applications, features, and/or services.
- Ability to interpret applicable reference manuals and apply department procedures.
- Understanding of procedures for setting up and operating assigned systems and/or equipment.
- Ability to perform regular preventative maintenance and service on assigned equipment/systems, including ability to identify, solve, and prevent problems.
- Ability to use basic diagnostic and test equipment and interpret and document operations-related malfunctions.
- Ability to interpret system status reports and messages.
- Familiarity with network and operating system requirements.
- Ability to monitor and adjust environmental and security systems.

## **CORE FUNCTION**

### **Operations Support**

#### **Examples of Typical Activities:**

##### **Scheduling:**

Ensure that scheduling of jobs/orders is prioritized to best meet user requests. Examples of typical work activities include:

- Schedule computer jobs and maintain production run schedules;
- Provide for network access and timesharing;
- Prioritize or rearrange job/work order sequence;
- Communicate with users on scheduling requirements and job status;
- Determine work flow of equipment or systems installation requests;
- Determine videotape channel assignments;
- Provide electronic or physical distribution of instructional media to classrooms.

##### **Production/Quality Control:**

Ensure quality control of system or equipment output. Examples of typical work activities include:

- Maintain quality assurance using appropriate test and system monitoring procedures;
- Identify system aborts and/or equipment failure and take corrective action;
- Ensure integrity of production files and output;
- Modify production procedures as needed;
- Ensure integrity of on-line systems (e.g., video broadcast signals, on-line data files).

##### **Material Maintenance:**

Ensure materials, inventory, records, storage, and distribution systems are properly maintained. Examples of typical work activities include:

- Plan and implement methods for storage, retrieval, and processing of applicable materials and inventories;
- Initialize and prepare storage media (e.g., tapes, cartridges, film);
- Maintain library and archival storage;
- Initiate orders;
- Ensure inventory records are up to date and accurate;
- Issue equipment loans to faculty and students;
- Provide video copying services.

## **CORE SKILLS**

### **Operations Support**

- Knowledge of production job flow and required inputs and outputs.
- Ability to interpret, communicate, and act on scheduled job/work orders.
- Ability to maintain work order and inventory record systems.
- Ability to run the material and/or equipment distribution function
- Ability to develop schedules for materials and personnel resources based on estimates of resource allocations.
- Demonstrated competence in service and/or product delivery.
- Ability to manipulate jobs, queues, timeshare sessions, or electronic distribution to meet client needs.
- Ability to interpret equipment/system output, detect errors, and take corrective action.
- Ability to use applicable procedural and/or application software.
- Demonstrated ability to work and communicate with users to effectively identify and efficiently meet their requirements.

## **CORE FUNCTION**

### **Operations Analysis**

#### **Examples of Typical Activities:**

##### **Performance Analysis:**

Analyze systems and operations and recommend changes to maximize efficiency. Examples of typical work activities include:

- Monitor overall system or operation performance, utilization, and response time;
- Conduct remote diagnostics;
- Determine overall production turnaround time to optimize resources;
- Evaluate events log to identify potential problems;
- Prepare troubleshooting checklists and procedures for use in resolving or correcting operating problems;
- Consult with systems and technical staff regarding operating requirements and problems;
- Analyze ongoing transmission quality and signal levels;
- Track traffic and response time statistics.

##### **Application/Database Support:**

Optimize system and equipment features fully utilizing programmatic and database functions. Examples of typical work activities include:

- Select programmatic parameters (e.g., define system options most suitable to operations); recommend or program new features, services, or procedures;
- Develop command level applications and program formats;
- Install single utilities;
- Monitor application software;
- Ensure database integrity and produce system reports.

## **CORE SKILLS**

### **Operations Analysis**

- Knowledge of operating system and/or equipment features and ability to take appropriate action in response to system failures or inaccessibility.
- Demonstrated ability to perform remote diagnostics and ability to perform analysis and tuning of system.
- Ability to apply statistical techniques and simulation in measuring and resolving performance problems.
- Ability to use performance monitoring software and interpret results; basic knowledge of database management software.
- Ability to distinguish operational performance trends and recommend modifications to improve performance.
- Demonstrated ability to schedule and monitor projects and coordinate with others to achieve desired outcomes.