

APPENDIX A

The following section contains work process, training outline, and related instruction for the **IT Specialist I** and **IT Specialist II**. Criteria for each apprenticeship occupation are segregated into three distinct parts.

Part I: Work Process – This section delineates the general outline of basic, high-level requirements that each participant will need to satisfy including projects, coaching, job shadowing, and training.

Part II: Outline of Related Instruction – This section outlines specific formal training that each participant will be required to complete as a part of the apprenticeship activity.

Part III: Performance Criteria and Competencies – In support of this competency-based apprenticeship model, this section identifies key existing roles within Lockheed Martin, in which the apprentice will be able to perform as a product of this program. These roles are categorized by specific IT competency (as listed below) and explain what technical knowledge and professional behaviors will be evident as a product of achieving proficiency in these areas.

Competency Areas

IT Specialist I ¹	IT Specialist II ²	
<ul style="list-style-type: none"> • Application Software • Network Services • Professional Development • System Administration • Information Technology • Data Management 	<ul style="list-style-type: none"> • Security • Operations Systems • Systems Administration • Network • Group Project 	<ul style="list-style-type: none"> • Policy and Planning • Internet

¹ Focus Population High School Students

² Focus Population Disabled Veterans

Information Technology Specialist I

APPENDIX A-1

WORK PROCESS SCHEDULE AND RELATED INSTRUCTION OUTLINE

Year 1 (266 Hours = 266 Training) — Junior Year	
Work Process	Hours
Orientation to the Lockheed Martin Work Environment. The apprentice will be introduced to senior leadership personnel. He/she will become aware of mission and business objectives. He/she will also gain exposure to required processes as well as safety and security policies. Tips for succeeding in the workplace will be reviewed with him/her.	8
Specific Business Area Knowledge. The manager will provide the apprentice with a detailed overview of the organization's work process and how it relates to other organizations within the company.	8
Meet with the Mentor and Learning and Development Coordinator (L&D). The apprentice will meet with assigned mentor and L&D Coordinator to engage in dialogue regarding his/her learning experiences, problems, needs, and concerns. The apprentice will be required to keep a journal to facilitate discussion and reflection of his/her apprenticeship experience.	12
Professional and Technical Training. The apprentice will learn new skills that will equip him/her to handle employee relations and responsibilities competently. Professional Development. Communications, Customer Service, Diversity, and Ethics Technical Development. Operating Systems, Systems Admin, Network, and Security	110
Project #1. Robotics. This course teaches participants to create, program, and operate a programmable robot. The objective of the course is to develop technical, project management, teambuilding, and interpersonal skills that will increase apprentices' ability to transition into productive roles in their work rotations. At the end of the class, the robot must run well, move on command, and build by following directions.	40
Project #2. The apprentice will complete a project determined by each participating organization in conjunction with Learning and Development prior to the start of the program segment. This project should increase technical and communication skills as well as build confidence. Projects may include tasks related to any of the following examples: update or design a web page; review software documentation; perform network hardware inventory; perform document control and management; schedule events and publish required data; perform customer satisfaction review; review software processes and management tools; and use configuration management tools.	40
Project Presentations. The apprentice will present the project results in front of his/her work group and to all apprentices and mentors.	16
Job Shadowing. The apprentice will observe work processes and perform job shadowing within the assigned work group. He/she will observe different roles and responsibilities within the organization. The apprentice will communicate with employees as he/she performs required tasks. As the apprentice shadows select employees from each task area, he/she will seek to know what, how, and why and to care why. Apprentices will demonstrate typical skills including but not limited to telephone skills, work ethics, computer skills, teaming skills, meeting skills, and presentation skills. Apprentices will learn personal and professional development through constructive feedback from supervisors, mentors, and other leaders. Apprentices will discover the relevance and application of theories learned in school. Apprentices will observe, question, and explore new skills under close supervision.	24
Informal/Formal Briefings. The apprentice will conduct a briefing of the work process overview, lessons/techniques learned from training, and project activities.	7
Performance Evaluation. The apprentice will have his/her performance formally reviewed and will discuss it with his/her manager.	1

(Year 2 = 728 hrs; On-The-Job Learning 182 Hours and Training 546 Hours)	
Work Process	Hours
<p>Professional and Technical Training. The apprentice will learn new skills that will equip him/her to handle employee relations and responsibilities competently.</p> <p>Professional Development. Communications, Customer Service, Diversity and Ethics</p> <p>Technical Development. Operating Systems, Systems Admin, Network, and Security</p>	502
<p>Dedicated Work Assignments. The apprentice will perform job specific supporting work assignments on a full-time basis. He/she will work 40 hours per week. He/she will continue to learn how to support an organization. The apprentice will learn how to contribute to his/her work group as a full-time employee and therefore a fully dedicated member of the team. The apprentice will learn and apply the skills (further expanding upon previous learning/applications) necessary and complete the tasks required of his/her particular job. The apprentice will also learn new skills to enhance the quality of his/her work and more effectively manage his/her time while interacting with the workforce daily. Representative tasks may include the following: classifying end user problems; documenting problem solutions; making and testing network cables; performing data analysis; writing simple programs; creating database triggers; testing programs; debugging programs; creating scripts to gather system statistics; creating scripts to transfer files; installing software upgrades; and verifying data conformance, accuracy, and completeness.</p>	182
<p>Informal/Formal Briefings. The apprentice will conduct a briefing of the work process overview, lessons/techniques learned from training, and project activities.</p>	18
<p>Meet with the Mentor and L&D Coordinator. The apprentice will meet with assigned mentor and L&D Coordinator to engage in dialogue regarding his/her learning experiences, problems, needs, and concerns. The apprentice will be required to keep a journal to facilitate discussion and reflection of his/her apprenticeship experience.</p>	24
<p>Performance Evaluation. The apprentice will have his/her performance formally reviewed and will discuss it with his/her manager.</p>	2

Year 3 — (2720 hrs– On-The-Job Learning Activities [2432 Hours] and Training [288 Hours]) Full-Time Employment	
Work Process	Hours
<p>Professional and Technical Training. The apprentice will learn new skills that will equip him/her to handle employee relations and responsibilities competently.</p> <p>Professional Development. Communications, Customer Service, Diversity, and Ethics</p> <p>Technical Development. Operating Systems, Systems Admin, Network, and Security</p>	246
<p>Dedicated Work Assignments. The apprentice will perform job specific supporting work assignments on a full-time basis. He/she will work 40 hours per week. He/she will continue to learn how to support an organization. The apprentice will learn how to contribute to his/her work group as a full-time employee and therefore a fully dedicated member of the team. The apprentice will learn and apply the skills (further expanding upon previous learning/applications) necessary and complete the tasks required of his/her particular job. The apprentice will also learn new skills to enhance the quality of his/her work and more effectively manage his/her time while interacting with the workforce daily. Representative tasks may include the following: classifying end user problems; documenting problem solutions; making and testing network cables; performing data analysis; writing simple programs; creating database triggers; testing programs; debugging programs; creating scripts to gather system statistics; creating scripts to transfer files; installing software upgrades; and verifying data conformance, accuracy, and completeness.</p>	2432
<p>On-boarding Process. This process encompasses the variety of tasks and requirements involved with acclimating and engaging a new employee to their position and organization. The level of support provided to apprentices after leaving the HR organization communicates the importance of three components in the on-boarding process: forms management, tasks management, and socialization.</p>	8
<p>Informal/Formal Briefings. The apprentice will conduct a briefing of the work process overview, lessons/techniques learned from training, and project activities.</p>	14
<p>Meet with the Mentor and L&D Coordinator. The apprentice will meet with assigned mentor and L&D Coordinator to engage in dialogue regarding his/her learning experiences, problems, needs, and concerns. The apprentice will be required to keep a journal to facilitate discussion and reflection of his/her apprenticeship experience.</p>	18
<p>Performance Evaluation. The apprentice will have his/her performance formally reviewed and will discuss with his/her manager.</p>	2

YEAR 1 OF TRAINING — IT APPRENTICESHIP TRAINING LEVELS 1 – 2

(Year 1 = 266 hrs; Training 266 Hours)		
LEVEL 1 COURSE OFFERINGS — SEPTEMBER TO DECEMBER		
Competency	Course Name	Training Hours
Professional Development	New Employee Orientation	8
Professional Development	Personal Professionalism in the Workplace	8
Professional Development	Interpersonal Communications: Effective Communication	8
Personal Development	Teamwork	8
Professional Development	Time Management: Overcoming Challenges	4
Operating System	Basic Concepts of Information Technology	24
Application Software	Microsoft Office Word	8
Application Software	Microsoft Office Excel and Pivot Tables	16
Application Software	Microsoft Office PowerPoint	8
Application Software	Desktop Applications, Microsoft® Office 2007 Outlook®, Global Knowledge, (LM Common)	4
Group Project	Robotics Design, Construction and Programming	55

(Year 1 = 266 hrs; Training 266 Hours)		
LEVEL 1 COURSE OFFERINGS — SEPTEMBER TO DECEMBER		
Competency	Course Name	Training Hours
Professional Development	How to Deal with Difficult People, SkillPath	8
Professional Development	Job Shadowing	26
Professional Development	Business Acumen	8
Professional Development	Project Management Fundamentals	4
Professional Development	Effective Presentations	16
Operating System	Computer and Networking Technology	24
Network	Networking Essentials	16
Application Software	AJAX Web Application Development – Multicast (SkillSoft)	12
Professional Development	Performance Management and PRS	1

YEAR 2 OF TRAINING — IT APPRENTICESHIP TRAINING LEVELS 3 – 4

(Year 2 = 728 hrs; On-The-Job Learning 182 Hours and Training 546 Hours) LEVEL 3 COURSE OFFERINGS — JULY TO DECEMBER		
Competency	Course Name	Training Hours
Professional Development	Managing Workplace Stress with Success	7
Professional Development	Conflict Resolution	16
Operating Systems	CompTIA A+ 2003 OS Technologies (4 Parts) – SkillSoft	28
Systems Administration	Microsoft Windows 2000: Admin (3 Parts) – SkillSoft	17
Network Services	Network Security 1: Policy, Admin, and Firewalls	24
Security	Security Technology	8
Policy and Planning	Essentials of Info Security, Basic, Global Knowledge	40
Application Software	Java Programming	20
Application Software	Java Script Programming	20
Information Technology	Strategic Management Of Resources	20
Operating Systems	Unix 1 & 2	12
Application Software	Perl/CGI	16
Information Technology	Oracle 10 and 11 SQL, PL/SQL and SQL Plus	32
Information Technology	Oracle 10 and 11: Architecture and Administration	40

(Year 2 = 728 hrs; On-The-Job Learning 182 Hours and Training 546 Hours) LEVEL 4 COURSE OFFERINGS — JANUARY TO JUNE		
Competency	Course Name	Training Hours
Professional Development	Effective Business Writing	16
Professional Development	Advanced Business Writing	8
Professional Development	Finance for Everyone	4
Professional Development	Making Smart Choices	8
Professional Development	Four Skills of Successful Employees	8
Professional Development	Customer Relations Institute - Customer Intimacy	8
Operating Systems	MS Windows 2000 Installation, Config, and Admin (8 Parts)	56
Operating Systems	Microsoft Windows 2000 Troubleshooting,	40
Security	Security+ Certification, Basic, Vendor	40
Data Management	Database Technologies Part 1: Relational Database	8
Data Management	Database Technologies Part 2: Introduction to SQL	8
Application Software	C#, Introduction to .NET Programming in C#	40
Application Software	Grid Orientation	2

YEAR 3 OF TRAINING — IT APPRENTICESHIP TRAINING LEVEL 5

(Year 3 = 2720 hrs; On-The-Job Learning 2432 Hours and Training 288 Hours)
LEVEL 5 FULL-TIME COURSE OFFERINGS — JULY TO SEPTEMBER;
OJL (15 months – September through the following December)

Competency	Course Name	Training Hours
Operating Systems	Linux Fundamentals	40
Information Technology	Visual Basic	24
Network Services	Network, VPNs and Data Privacy	6
Network Services	CCNT Local Area Networks v6 (3 Parts) – SkillSoft	16
Application Software	DBMS Utilities and Tools (Oracle/Access)	16
Application Software	Clearcase Fundamentals, Basic, Rational	8
Application Software	ClearQuest	2
Application Software	C#, Intermediate .NET Programming Using C	40
Application Software	C#, Advanced, NET Programming Using C#	24
Internet	MS Office SharePoint Designer 2007	24
Internet	Microsoft SharePoint Portal Server (3 Parts) – SkillSoft	48
Information Technology	Introduction to Visual Basic	24
Professional Development	Change Management	8
Application Software	Doors Tool Training	8

Lockheed Martin ITAP Standards of Apprenticeship

APPENDIX A-2

RELATED TRAINING

Registered IT Specialist apprentices must maintain full-time student status while completing high school requirements, as well as completing all high school courses and projects that are required for graduation by the Department of Education.

The IT Specialist apprentice training skill standards shown below represent competency requirements in Information Technology areas including Database Administration, Network Design and Administration, Programming /Software Engineering, Technical Support, Technical Writing, and Enterprise Systems Analysis and Integration. Special focus on jobs in Configuration Management, Enterprise Information Systems, Data Center Support, Software Development, and Resource Management is aligned.

The IT competencies are defined by career/skill area; performance level expectation for the non-exempt technical job; knowledge, skills, and abilities; and employability skill or competencies.

- The career/skill area represents the tasks associated with a non-exempt technical job suitable for an IT Specialist apprentice.
- The performance level expectation describes the broad job level requirement for a non-exempt technical position.
- The knowledge, skills, and abilities describe the specific job-related knowledge required to perform the job successfully.
- The employability skills describe the behavioral competencies that will be evident upon satisfactory completion of the training.

IT Specialty: Application Software

Database Administration

Software Development, Resource Management, Configuration Management

Apprentice or OJL. Moderate understanding of general job aspects and superficial understanding of the technical phases of the job.

Career/Skill	Performance-Level Expectation Non-exempt Technical Job-level Expectation	Technical Knowledge Skills, Abilities, Tools	Professional Skills Competencies
<p>Database Administration</p> <ul style="list-style-type: none"> Enters, reviews, and analyzes data within the database (database management). Ensures user data integrity, makes decisions affecting user access, documents and records attributes, and formulates database query and retrieval scripts. Reviews database design and integration of systems and provides backup recovery. 	<p>Entry</p> <ul style="list-style-type: none"> Performs routine, repetitive, and basic tasks where precedent, methods and processes are well established. <p>Senior</p> <ul style="list-style-type: none"> Performs a variety of activities that involve standard procedures. Gathers and manipulates common data, verifies adequacy and appropriateness, develops charts, diagrams, and standard reports. In technical or production positions, may also set up and operate standard electronic or mechanical equipment used to develop, produce and/or test products or process data. 	<ul style="list-style-type: none"> Knowledge of database principles Knowledge of database applications, software, operations, and limitations Knowledge of data communications protocols Knowledge of data types and attributes Knowledge of data gathering requirements Knowledge of how to query and report system objects Knowledge of evolving industry standards Knowledge of system hardware, network and operating system Knowledge of database software Knowledge of storage options Knowledge of user interface requirements and standards Knowledge of system model Knowledge of web-based data environments Knowledge of change documentation procedures Knowledge of database audit procedures Knowledge of backup and recovery procedures Knowledge of security standards and strategies Knowledge of database tuning and optimization techniques Knowledge of database design and test procedures Knowledge of data warehouse and data mining technology 	<ul style="list-style-type: none"> Ability to work cooperatively with others and contribute ideas, suggestions, and assistance Ability to ask relevant questions Ability to accurately summarize and document information Ability to pay attention to detail Ability to present technical information clearly Ability to use word processing and database software Ability to create and organize business and technical reports Ability to use effective communication and presentation methods Ability to document technical procedures for users Ability to use integrated, multiple software applications Ability to formulate a plan of action Ability to follow procedures and processes Ability to organize and analyze Ability to analyze and synthesize information Ability to determine variables and constraints Ability to write technical documents for various audiences Ability to monitor and interpret trends

IT Specialty: Application Software

Database Administration

Software Development, Resource Management, Configuration Management

Apprentice or OJL. Moderate understanding of general job aspects and superficial understanding of the technical phases of the job.

Career/Skill	Performance-Level Expectation <small>Non-exempt Technical Job-level Expectation</small>	Technical Knowledge <small>Skills, Abilities, Tools</small>	Professional Skills <small>Competencies</small>
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IT Specialty: Network Services

Network Design and Administration

Enterprise Information Systems Networking and Hardware

Apprentice or OJL. Moderate understanding of general job aspects and superficial understanding of the technical phases of the job.

Career/Skill	Performance-Level Expectation <small>Non-exempt Technical Job-level Expectation</small>	Technical Knowledge <small>Skills, Abilities, Tools</small>	Employability Skills <small>Competencies</small>
<p>Network Technician</p> <ul style="list-style-type: none"> • Monitors, controls, and isolates problems in a data communications network. • Monitors all network activity. • Activates/deactivates network lines according to established schedules. • May perform first- and/or second-level problem determination; first level is help desk. • Interfaces with users and/or network vendors. 	<p>Entry</p> <ul style="list-style-type: none"> • Performs routine, repetitive, and basic tasks where precedent, methods and processes are well established. <p>Senior</p> <ul style="list-style-type: none"> • Performs a variety of activities that involve standard procedures. • Gathers and manipulates common data, verifies adequacy and appropriateness, develops charts, diagrams, and standard reports. • In technical or production positions, may also set up and operate standard electronic or mechanical equipment used to develop, produce and/or test products or process data. 	<ul style="list-style-type: none"> • Ability to acquire necessary approvals • Ability to assess sources of information for new technologies • Ability to use flow charting and diagramming tools • Knowledge of business systems • Knowledge of computer systems and computer technologies • Knowledge of design review procedures and processes • Knowledge of hardware and software standards and processes • Knowledge of installation processes and procedures • Knowledge of network architecture, topology, hardware and software • Knowledge of network optimization practices and methods • Knowledge of network planning, design, and configuration • Knowledge of networking and operating environments • Knowledge of networking standards and processes • Knowledge of research techniques and procedures • Knowledge of standard rollout and 	<ul style="list-style-type: none"> • Ability to assess individual knowledge and analyze work assignments • Ability to collect and analyze information • Ability to communicate technical info to a variety of audiences • Ability to create detailed supporting documents • Ability to document work process flow in detailed supporting documents • Ability to follow proper procedures and processes • Ability to follow standard installation procedures and practices • Ability to gather synthesize and interpret information • Ability to give and accept constructive criticism • Ability to manage timelines • Ability to organize and present technical terms and concepts • Ability to organize and summarize information and requirements • Ability to organize information • Ability to present alternative solutions concisely and clear

IT Specialty: Application Software

Database Administration

Software Development, Resource Management, Configuration Management

Apprentice or OJL. Moderate understanding of general job aspects and superficial understanding of the technical phases of the job.

Career/Skill	Performance-Level Expectation Non-exempt Technical Job-level Expectation	Technical Knowledge Skills, Abilities, Tools	Professional Skills Competencies
		recovery procedures <ul style="list-style-type: none"> • Knowledge of system configuration procedures • Knowledge of tracking and documentation procedures • Knowledge of workstation hardware configuration 	<ul style="list-style-type: none"> • Ability to recommend and present a plan of action • Ability to resolve technical issues • Ability to think non-sequentially and globally • Ability to troubleshoot and test system components

IT Specialty: Application Software

Programmer/Software Engineer

Software Development, Configuration Management, Data Center, Resource Management

Apprentice or OJL. Moderate understanding of general job aspects and superficial understanding of the technical phases of the job.

Career/Skill	Performance-Level Expectation Non-exempt Technical Job-level Expectation	Technical Knowledge Skills, Abilities, Tools	Employability Skills Competencies
<p>Programmer</p> <ul style="list-style-type: none"> • Generates, revises, compiles, debugs and writes simple to moderately complex business, scientific, or software computer programs. • Develops flow charts and diagrams outlining process steps in operation; develops and revises program code; prepares documentation of program development, modifications and operating instructions; conducts program tests and makes modifications to code as needed; and may be required to analyze system capabilities to resolve input/output problems. <p>Engineering Aide</p> <ul style="list-style-type: none"> • Performs a variety of tasks in support of technical and non-technical software development, data maintenance, and 	<p>Entry</p> <ul style="list-style-type: none"> • Performs routine, repetitive, and basic tasks where precedent, methods and processes are well established. <p>Senior</p> <ul style="list-style-type: none"> • Performs a variety of activities that involve standard procedures. • Gathers and manipulates common data, verifies adequacy and appropriateness, develops charts, diagrams, and standard reports. • In technical or production positions, may also set up and operate standard electronic or mechanical equipment used to develop, produce and/or test products or process data. 	<ul style="list-style-type: none"> • Ability to write detailed and accurate functional specifications following organizational standards • Knowledge of acceptance testing practices and processes • Knowledge of company operating procedures • Knowledge of cost and performance considerations for design scheme and model alternatives • Knowledge of data techniques and tools • Knowledge of development process • Knowledge of documentation process • Knowledge of human factors principles • Knowledge of interface design principles 	<ul style="list-style-type: none"> • Ability to analyze data • Ability to analyze possible causes of problems and recommend action plans for resolution • Ability to apply rules/principles to processes/procedures and use logic to draw conclusions • Ability to collect, interpret, synthesize and communicate information to stakeholders • Ability to communicate effectively using a variety of media and methods • Ability to document errors and code modifications in detailed supporting documents • Ability to document findings in detailed supporting documents • Ability to establish rapport with colleagues and customers and resolve conflicts • Ability to examine information/data relevance and

<p>Technical Quality, Software</p> <ul style="list-style-type: none"> Assists Software Quality Engineers in performing evaluation and analysis of software and documentation for completeness following approved standards. Performs audits of configuration management and software, including requirements, design and code phases. 		<ul style="list-style-type: none"> Knowledge of model development options and methodologies Knowledge of normalization, relational theory and data modeling tools Knowledge of object-oriented design and principles Knowledge of operating systems, networking and problem domain Knowledge of peer code review process and procedures Knowledge of procedures for documenting and tracking problems and resolutions 	<ul style="list-style-type: none"> Ability to examine task/technology relationships and integrate systems technologies Ability to follow processes/procedures Ability to integrate multiple items of data and contrast conflicting data Ability to interpret symbols, diagrams and schematics Ability to interpret, analyze and communicate technical information
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IT Specialty: Application Software (cont)

Programmer/Software Engineer

Software Development, Configuration Management, Data Center, Resource Management

Apprentice or OJL. Moderate understanding of general job aspects and superficial understanding of the technical phases of the job.

Career/Skill	Performance-Level Expectation Non-exempt Technical Job-level Expectation	Technical Knowledge Skills, Abilities, Tools	Employability Skills Competencies
<p>Technical Quality, Software (cont)</p> <ul style="list-style-type: none"> Witnesses' vendor acceptance tests and performs receiving inspection on vendor-supplied software materials. Designs and implements programs for ad hoc queries and assists in the establishment of software library controls. 		<ul style="list-style-type: none"> Knowledge of programming standards, practices, and specifications Knowledge of prototype design methodologies and prototyping tools Knowledge of security and audit trail features Knowledge of security tools, processes, and procedures Knowledge of software development methodology and configuration management processes Knowledge of software testing practices and procedures Knowledge of specifications Knowledge of structured design principles of programming Knowledge of system and software integration 	<ul style="list-style-type: none"> Ability to organize and document process and outcomes in detailed supporting documents Ability to plan resource needs and constraints Ability to prepare basic summaries and reports Ability to present complex, technical information/data Ability to propose technical solutions Ability to relate key strategies and actions to desired results Ability to understand system organization/hierarchy Ability to utilize networks Ability to work effectively in groups under a deadline Ability to write simple documents

		<ul style="list-style-type: none">• Knowledge of system configuration• Knowledge of system error resolution process and practices• Knowledge of testing tools• Knowledge of version and revision control procedures	<ul style="list-style-type: none">• Ability to write summaries and reports• Knowledge of office productivity software and online resources
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IT Specialty: Customer Support

Technical Support

Enterprise Information Systems, Data Center Support

Apprentice or OJL. Moderate understanding of general job aspects and superficial understanding of the technical phases of the job.

Career/Skill	Performance-Level Expectation Non-exempt Technical Job-level Expectation	Technical Knowledge Skills, Abilities, Tools	Employability Skills Competencies
<p>Technical Support /Help Desk</p> <ul style="list-style-type: none"> Resolves technical problems and answers queries by telephone in support of internal and/or outside customer computer hardware, software, network, and telecommunications systems. Diagnoses, identifies, isolates and analyzes problems utilizing historical database records. May route calls to product line specialists. Maintains and updates records and tracking databases. Alerts management to recurring problems and patterns of problems. <p>Engineering Aide</p> <ul style="list-style-type: none"> Provides technical support to engineers on a variety of technical tasks. 	<p>Entry</p> <ul style="list-style-type: none"> Performs routine, repetitive, and basic tasks where precedent, methods and processes are well established. <p>Senior</p> <ul style="list-style-type: none"> Performs a variety of activities that involve standard procedures. Gathers and manipulates common data, verifies adequacy and appropriateness, develops charts, diagrams, and standard reports. In technical or production positions, may also set up and operate standard electronic or mechanical equipment used to develop, produce and/or test products or process data. 	<ul style="list-style-type: none"> Ability to communicate appropriately to different audiences and levels Ability to compare and analyze sets of technical data Ability to identify key sources of information Ability to identify system components Ability to query existing knowledge repository Ability to record data in knowledge repositories using proper keywords Knowledge of applications and diagnostic programs Knowledge of available resources and customer needs Knowledge of basic networking components, equipment, protocols and troubleshooting practices Knowledge of customer quality issues Knowledge of documentation procedures Knowledge of escalation procedures and processes Knowledge of hardware, software Knowledge of how data is gathered, stored, and manipulated in a database Knowledge of how to query a database and interpret responses 	<ul style="list-style-type: none"> Ability to accept responsibility for own actions and impact on others Ability to analyze and prioritize information Ability to apply creative thinking to new situations Ability to approach problems in a logical and systematic manner Ability to clarify communication Ability to compare and contrast information Ability to define and communicate workload limits Ability to detect underlying issues Ability to document lessons learned Ability to explain concepts and present technical information Ability to gather information Ability to interpret and summarize information Ability to identify and isolate problems and develop theory on possible cause Ability to interpret information, prepare basic summaries and reports and select method of communication Ability to plan resource needs and constraints Ability to prioritize tasks, prepare schedules and monitor task sequences Ability to qualify, and analyze information

IT Specialty: Customer Support (cont)

Technical Support

Enterprise Information Systems, Data Center Support

Apprentice or OJL. Moderate understanding of general job aspects and superficial understanding of the technical phases of the job.

Career/Skill	Performance-Level Expectation Non-exempt Technical Job-level Expectation	Technical Knowledge Skills, Abilities, Tools	Employability Skills Competencies
		<ul style="list-style-type: none"> • Knowledge of operating environments, office suite applications, networks, hardware tools and online resources • Knowledge of organizational chart along with roles/responsibilities • Knowledge of organizational communication processes • Knowledge of practices internal and external • Knowledge of required technical information and ability to organize technical material for ease of learning • Knowledge of resolution tools and processes • Knowledge of service delivery methods and practices • Knowledge of sources of relevant technical data • Knowledge of system monitoring and diagnostic tools and procedures • Knowledge of technical communications processes • Knowledge of technologies and cultural variables of internal and external customers • Knowledge of test instruments • Knowledge of test methods • Knowledge of troubleshooting methods • Knowledge of company policies and procedures 	<ul style="list-style-type: none"> • Ability to read and follow written instructions • Ability to read and interpret technical diagrams and decision trees • Ability to select appropriate information • Ability to select/obtain data, information relevant to the task • Ability to set, adjust, and define realistic goals • Ability to summarize/paraphrase information • Ability to think creatively while analyzing problems • Ability to work in a team environment • Ability to use logic and draw conclusions and examine information for relevance and accuracy • Ability to identify problems and develop theory on possible cause

IT Specialty: Policy and Planning

Technical Writing

Configuration Management, Resource Management, Software Development, Enterprise Information Systems Quality Control

Apprentice or OJL. Moderate understanding of general job aspects and superficial understanding of the technical phases of the job.

Career/Skill	Performance-Level Expectation Non-exempt Technical Job-level Expectation	Technical Knowledge Skills, Abilities, Tools	Employability Skills Competencies
<p>Engineering Aide</p> <ul style="list-style-type: none"> Gathers, maintains, formats, compiles, and manipulates technical data, such as laboratory or material test results and engineering design changes. Produces engineering documentation, reports, drawings (flow charts, block diagrams, and schematics). May conduct tests and record data to assist with engineering evaluation or analysis <p>Software Documentation Analysts</p> <ul style="list-style-type: none"> Performs a variety of tasks in support of technical and non-technical software development, data maintenance, and documentation activities for assigned program and/or organization. Performs support functions involving automated database access, maintenance and updating for proposals, projects, studies, technical briefings and program presentations. Designs minor operating commands to modify computer operation to accomplish requested data formatting or information retrieval 	<p>Entry</p> <ul style="list-style-type: none"> Performs routine, repetitive, and basic tasks where precedent, methods and processes are well established. <p>Senior</p> <ul style="list-style-type: none"> Performs a variety of activities that involve standard procedures. Gathers and manipulates common data, verifies adequacy and appropriateness, develops charts, diagrams, and standard reports. In technical or production positions, may also set up and operate standard electronic or mechanical equipment used to develop, produce and/or test products or process data. 	<ul style="list-style-type: none"> Knowledge of workplace and industry vocabulary Knowledge of information gathering methods and quantity of information required Knowledge of industry standards Knowledge of hardware/software capabilities/constraints Knowledge of identification and recruitment of subject matter experts Knowledge of logical flow of information for document creation Knowledge of issues of coordination between various publication media Ability to synthesize information into clear research questions that are relevant to project goals Ability to integrate various information technologies Knowledge of company documentation guidelines Ability to select and apply technical info to meet user needs Knowledge of customer expectations Ability to effectively organize complex information Ability to translate technical terminology and concepts Ability to create basic visuals Knowledge of logical document organization procedures 	<ul style="list-style-type: none"> Ability to gather, evaluate and categorize information Ability to interpret and clarify communication Ability to listen, interpret and respond to communication appropriately Ability to present results clearly and concisely Ability to probe for meaning Ability to summarize information Ability to understand constraints, generate alternatives, consider risks, evaluate options and formulate action plans Ability to use imagination to visualize events and activities Ability to use presentation and graphics software Ability to adapt information to customer requirements and style Ability to identify the theme, purpose and scope of the assignment Ability to estimate the required resources and schedule Ability to reconcile conflicting data

IT Specialty: Policy and Planning (cont)

Technical Writing

Configuration Management, Resource Management, Software Development, Enterprise Information Systems Quality Control

Apprentice or OJL. Moderate understanding of general job aspects and superficial understanding of the technical phases of the job.

Career/Skill	Performance-Level Expectation Non-exempt Technical Job-level Expectation	Technical Knowledge Skills, Abilities, Tools	Employability Skills Competencies
<p>Technical Quality Engineer</p> <ul style="list-style-type: none"> • Performs a variety of activities to ensure accuracy and completeness of technical fabrication documentation and test processes. • Reviews and develops information for testing, fabrication, assembling and inspecting units, assemblies and systems based on review and knowledge of specifications, sketches, drawings, schematics and manufacturing process plans. • Tracks and controls non-conformance documents and test anomalies. • Reviews final build documentation for accuracy and ensures control of build records and issuance of serial numbers 			

IT Specialty: Systems Analysis

Enterprise Systems Analysis and Integration

Configuration Management, Resource Management, Enterprise Information Systems Quality Control, ERB, and Network

Apprentice or OJL. Moderate understanding of general job aspects and superficial understanding of the technical phases of the job.

Career/Skill	Performance-Level Expectation Non-exempt Technical Job-level Expectation	Technical Knowledge Skills, Abilities, Tools	Employability Skills Competencies
<p>Programmer</p> <ul style="list-style-type: none"> Generates, revises, compiles, debugs and writes simple to moderately complex business, scientific, or software computer programs. Develops flow charts and diagrams outlining process steps in operation; develops and revises program code; prepares documentation of program development, modifications and operating instructions; conducts program tests and makes modifications to code as needed; and may be required to analyze system capabilities to resolve input/output problems. <p>Engineering Aide</p> <ul style="list-style-type: none"> Performs a variety of tasks in support of technical and non-technical software development, data maintenance, and documentation activities for assigned program and/or organization. <p>Technical Quality, Software</p> <ul style="list-style-type: none"> Assists Software Quality Engineers in performing evaluation and analysis of software and documentation for completeness following approved standards. Performs audits of configuration management and software, including requirements, design and code phases. 	<p>Entry</p> <ul style="list-style-type: none"> Performs routine, repetitive, and basic tasks where precedent, methods and processes are well established. <p>Senior</p> <ul style="list-style-type: none"> Performs a variety of activities that involve standard procedures. Gathers and manipulates common data, verifies adequacy and appropriateness, develops charts, diagrams, and standard reports. In technical or production positions, may also set up and operate standard electronic or mechanical equipment used to develop, produce and/or test products or process data. 	<ul style="list-style-type: none"> Knowledge of configuration management and change control processes Knowledge of systems requirements and modeling Knowledge of networking, systems and applications security Knowledge of data integrity issues Knowledge of diagramming methodologies and the ability to utilize modeling tools and techniques Knowledge of business process and data models Ability to identify, collect, and interpret metrics Knowledge of tools and technologies Knowledge of business process Knowledge of risk assessment and Return On Investment (ROI) Knowledge of distributed computing Knowledge of middleware and user applications Knowledge of change control and system management techniques Knowledge of business objective and customer requirements Knowledge of current communications protocols and programming languages Knowledge of company standards, applicable laws and regulations 	<ul style="list-style-type: none"> Ability to adapt principles/rules to new applications Ability to adhere to standards Ability to detect underlying issues and resolve technical conflicts Ability to document and communicate plan and procedures Ability to evaluate application of technology Ability to examine information for relevance and accuracy Ability to examine information for relevance and accuracy and adapt principles/rules to new applications Ability to follow procedures, pay attention to detail and follow up on assigned tasks Ability to integrate multiple items of data, contrast conflicting data and research additional information sources Ability to interpret and evaluate Ability to present complex ideas/information and pose critical questions Ability to respond to customer needs, relate to concerns and resolve conflicts to customer satisfaction Ability to summarize and translate mathematical data Ability to support implementation and monitor progress

IT Specialty: Systems Analysis (cont)

Enterprise Systems Analysis and Integration

Configuration Management, Resource Management, Enterprise Information Systems Quality Control, ERB, and Network

Apprentice or OJL. Moderate understanding of general job aspects and superficial understanding of the technical phases of the job.

Career/Skill	Performance-Level Expectation Non-exempt Technical Job-level Expectation	Technical Knowledge Skills, Abilities, Tools	Employability Skills Competencies
<p>Technical Quality, Software (cont)</p> <ul style="list-style-type: none"> • Witnesses vendor acceptance tests and performs receiving inspection on vendor supplied software materials. • Designs and implements programs for ad hoc queries and assists in the establishment of software library controls. 		<ul style="list-style-type: none"> • Knowledge of cross-platform technologies, tools, and security considerations • Knowledge of data systems architecture • Knowledge of systems technology management and strategic planning • Knowledge of audit procedures and schedules • Knowledge of risk analysis, management and evaluation processes • Knowledge of system operation, infrastructure and performance • Knowledge of market and competitive forces 	<ul style="list-style-type: none"> • Ability to understand continuous improvement process and analyze goals/ constraints • Ability to utilize networks and organize information and reports

Information Technology Specialist II APPENDIX A-3

WORK PROCESS SCHEDULE AND RELATED INSTRUCTION OUTLINE

Year One (1867 Hours = 1221 OJL and 779.5 Training)	
Work Process	Hours
Orientation to Lockheed Martin. Apprentices will receive an overview of Lockheed Martin and the Information Systems and Global Services (IS&GS) Business Area. Orientation will include an introduction of the products and services of the business, organizational structure, ethics, diversity, and the organization's financials.	4
Orientation to Home Office. The leader of the apprentice will provide a detailed overview of the department's work process and how it relates to IS&GS and Lockheed Martin. This will include process and procedural documents and an introduction to the systems that the apprentice will use.	10
Meet with the Mentor and L&D Coordinator. The apprentice will meet biweekly (minimum) with assigned mentor and L&D Coordinator to engage in dialogue regarding his/her learning experiences, problems, needs, and concerns. The apprentice will be required to keep a journal to facilitate discussion and reflection of his/her apprenticeship experience.	24
Job Shadowing. The apprentice will observe work processes and perform job shadowing within the assigned work group. He/she will observe different roles and responsibilities within the organization. The apprentices will communicate with employees as they perform required tasks. The apprentice will demonstrate typical skills including, but not limited to telephone skills, work ethics, computer skills, teaming skills, meeting skills, and presentation skills. The apprentice will learn personal and professional development through constructive feedback from supervisors, mentors, and other leaders. The apprentice will discover the relevance and application of theories learned in school. The apprentice will observe, question, and explore new skills under limited supervision.	120
Informal/Formal Briefings. The apprentice will conduct a briefing of the work process overview, lessons/techniques learned from training, and project activities.	10
Performance Evaluation. The apprentice will have two performance reviews with his/her manager.	2

Year Two (1920 Hours = 1335 OJL and 666 Training)	
Work Process	Hours
Job Shadowing – Specialization Period. The apprentice will select an area of specialization relative to his/her skill and the business need (such as Security, Operating Systems, Systems Administration, etc). In this time, the apprentice will shadow and work with journeyworkers within the selected area to enhance current skills and create a depth of knowledge within the functional area.	240
Meet with the Mentor and L&D Coordinator. The apprentice will meet biweekly (minimum) with assigned mentor and L&D Coordinator to engage in dialogue regarding his/her learning experiences, problems, needs, and concerns. The apprentice will be required to keep a journal to facilitate discussion and reflection of his/her apprenticeship experience.	24
Informal/Formal Briefings. The apprentice will conduct a briefing of the work process overview, lessons/techniques learned from training, and project activities.	10
Performance Evaluation. The apprentice will have two performance reviews with his/her manager.	2

Year 1 Training Courses: IT Specialist II Apprentice (Veterans)			
Timeline	Competency	Course Name	Training Hours
1 st Quarter	Operating Systems	CompTIA A+ 2003 OS Technologies (4 Parts) – SkillSoft	28
	Network Services	Linux Network Services	40
	Systems Administration	Microsoft Windows 2000: Administration (3 Parts) – SkillSoft	17
	Policy and Planning	Essentials of Information Security, Basic, Global Knowledge	40
	Application software	C#, Introduction to .NET Programming in C#	40
	Internet	Creating and Configuring a Web Server Using Microsoft IIS 4.0 - (4 Parts) – SkillSoft	14
	Professional Development	Avoiding Grammatical Errors in Business Writing-SkillSoft	5
	Professional Development	Overview to Effective Business Communication-SkillSoft	3
2 nd Quarter	Operating Systems	Microsoft Windows 2000 Installation, Configuration, and Administration (8 Parts) – SkillSoft	56
	Information Technology	Network Security-SkillSoft	3
	Systems Administration	Systems Management, Systems Administration, Management and Security	40
	Policy and Planning	Group Policy Intensive Training and Workshop	24
	Application Software	C#, Intermediate .NET Programming Using C#	40
	Internet	Implementing and Supporting Microsoft Internet Information Services 5.0	24
	Professional Development	Available Presentation Resources-SkillSoft	4
3 rd Quarter	Information Technology	Managing Windows Server 2003 Internet Services-SkillSoft	2
	Security	Network Security 1: Policy, Administration, and Firewalls	24
	Network Services	Network Security 1: Policy, Administration, and Firewalls	24
	Systems Administration	Linux, Red Hat Linux System Administration and RHCT	32
	Policy and Planning	Extreme Networks, Extreme Networks Management Solutions	24
	Application Software	C#, Advanced .NET Programming Using C#	24
	Internet	Updating Web Server Skills to Internet Information Server 6.0	16
	Professional Development	Developing Excellent Time Management Habits-SkillSoft	3.5
4 th Quarter	Operating Systems	Windows 2000 Troubleshooting, Microsoft	40
	Security	Global Knowledge Firewall Security	32
	Network Services	Network+ (5 Parts) - SkillSoft	35
	Systems Administration	Linux System Administration	24
	Policy and Planning	e-Business (8Parts) – SkillSoft	53
	Application Software	C#, Introduction To and Advanced Development with .NET Applications for Windows Using	40
	Internet	Microsoft ISA Server 2000 (2 Parts) – SkillSoft	24
	Professional Development	Political Savvy and Diversity	4

Year 2 Training Courses: IT Specialist II Apprentice (Veterans)			
Timeline	Competency	Course Name	Training Hours
1 st Quarter	Operating Systems	Windows XP: Fundamentals-SkillSoft	4
	Operating Systems	Windows XP: Advanced-SkillSoft	5
	Security	Information Assurance Conference	8
	Network Services	CCNT Basic Telecommunications v6.0 (2 Parts) - SkillSoft	9
	Systems Administration	Linux Administration (3 Parts) – SkillSoft	21
	Policy and Planning	Strategic Management of Resources	20
	Application Software	C++ Programming: Structured Programming-SkillSoft	4
	Application Software	C++ Programming: Classes and Data Abstraction-SkillSoft	4
	Internet	MS Office SharePoint Designer 2007	24
2 nd Quarter	Operating Systems	Linux Fundamentals	40
	Security	Assessing Network Vulnerabilities	32
	Network Services	CCNT Basic Data Communications v6.0 (3 Parts) – SkillSoft	19
	Systems Administration	Linux Red Hat Adv System Admin (5 Parts) – SkillSoft	17
	Policy and Planning	System Architecture and Process Development and Modeling	32
	Application Software	C++ Programming, Intermediate C++ Programming	40
	Internet	Microsoft SharePoint Portal Server (3 Parts) – SkillSoft	48
3 rd Quarter	Operating Systems	Administering UNIX Network Services-SkillSoft	3
	Information Technology	Securing UNIX Systems-SkillSoft	4
	Security	CompTIA Security+ (4 Parts) – SkillSoft	28
	Network Services	CCNT Local Area Networks v6 (3 Parts) – SkillSoft	16
	Information Technology	Solaris 9 Systems Administration-SkillSoft	8
	Policy and Planning	IS&T PM Boot Camp for New Project Managers	16
	Application Software	C++ Programming, Advanced C++ Programming	40
	Internet	Building XML-Based Web Applications (5 Parts) – SkillSoft	39
4 th Quarter	Operating Systems	Linux, Red Hat Linux Rapid Track Course	32
	Security	Information Systems Security for Classified Programs (ISSCP) Fast Track Course	32
	Network Services	Network, VPNs and Data Privacy	6
	Systems Administration	Microsoft SQL Server 7.0: System Administration (5 Parts) – SkillSoft	35
	Policy and Planning	Introduction to Knowledge Management Technologies	32
	Application Software	Java Programming Introduction	8
	Application Software	JavaScript: Language Basics-SkillSoft	5
	Internet	Microsoft Visual InterDev 6.0 (5 Parts) – SkillSoft	35

Lockheed Martin Information Systems & Global Services
Standards of Apprenticeship
APPENDIX A-4

RELATED TRAINING

Registered IT Specialist apprentices must maintain full-time employment and remain in good standing while completing the 2-year apprenticeship program.

The IT Specialist apprentice training skill standards shown below represent competency requirements in Information Technology areas including Operating Systems, Network Services, Security, and Systems Administration. Specialization period will be for 1 year, and the specific job will be in core competency focus areas: Security, Network Services, Operating Systems, and Systems Administration.

The IT competencies are defined by applicable career fields; Performance-Level Expectation for the exempt technical job; knowledge, skills, and abilities; and professional skill competencies.

- The career/skill area represents the tasks associated with a non-exempt technical job suitable for an IT Specialist apprentice.
- The Performance-Level Expectation describes the broad job level requirement for an exempt technical position.
- The knowledge, skills, and abilities describe the specific job related knowledge required to perform the job successfully.
- The professional skills describe the behavioral competencies that will be evident upon satisfactory completion of the training.

Security: Work that involves ensuring the confidentiality, integrity, and availability of systems, networks, and data through the planning, analysis, development, implementation, maintenance, and enhancement of information systems security programs, policies, procedures, and tools.

Career/Skill	Performance-Level Expectation Exempt Technical Job-level Expectation	Technical Knowledge Skills, Abilities, Tools	Professional Skills Competencies
<p>Data Security Admin Associate</p> <ul style="list-style-type: none"> Develops and implements security systems for any manual or automated systems. Responsible for ensuring the protection of corporate data against unauthorized disclosure, accidental or intentional loss of data, or unauthorized modification. Information Assurance Engineer Associate Provides security engineering designs and implementation in all aspects of Information Assurance and Information Security (INFOSEC) Engineering. Assesses and mitigates system security threats/risks throughout the program life cycle; validates system security requirements definition and analysis; establishes system security designs; implements security designs in hardware, software, data, and procedures; verifies security requirements; performs system certification and accreditation planning and testing and liaison activities, and supports secure systems operations and maintenance. 	<p>Knowledge of, and skill in applying:</p> <ul style="list-style-type: none"> IT security principles and methods Commercial systems security products Technical documentation methods Performance management methods 	<p>Knowledge to:</p> <ul style="list-style-type: none"> Carry out activities leading to security certification or accreditation Conduct integrated analysis of multiple audit logs (e.g., firewall, Web server) Identify violations and recommend corrective actions Provide input in drafting information systems security documentation (e.g., systems security plans, risk assessments, disaster recovery plans, business continuity plans, and user security guides) 	<p>Ability to:</p> <ul style="list-style-type: none"> Collect and analyze information Assess individual knowledge and analyze work assignments Communicate technical information, both verbal and written, to a variety of audiences with the proper degree of importance Properly evaluate processes and procedures and properly follow and apply items to successful execute work

Operating Systems: Work that involves the planning, installation, configuration, testing, implementation, and management of the systems environment in support of the organization's IT architecture and business needs.

Career/Skill	Performance-Level Expectation Exempt Technical Job-level Expectation	Technical Knowledge Skills, Abilities, Tools	Professional Skills Competencies
<p>Computer Sys Analyst Asc</p> <ul style="list-style-type: none"> • Designs, develops, programs, installs, implements, conducts research for, and maintains internal data processing computer systems and utilities, and/or for customers on a contract basis. • Analyzes internal or external customers' needs, and determines equipment and software requirements for solutions to problems by means of automated systems; develops customized solutions to customer/user problems. • Establishes system parameters and formats; ensures hardware/software compatibility; and coordinates and/or modifies user requirements in terms of existing and projected computer capacity and capabilities. • May make programming changes as required to adapt or enhance existing or new programs and/or utilities. • Maintains supplied software packages for internal users. • Analyzes new hardware to determine its need or application in the existing or proposed system; advises on new techniques and estimated costs associated with new or revised programs and utilities, taking into 	<p>Knowledge of, and skill in applying:</p> <ul style="list-style-type: none"> • Software installation and configuration procedures • Life cycle management principles • optimization methods and analytical methods • Software installation and configuration procedures • Operational environments • Life cycle management concepts and analytical methods 	<p>Knowledge of/to:</p> <ul style="list-style-type: none"> • Assist in the installation of operating systems update packages • Run tests and correct problems • Recognize and refer serious problems to more experienced specialists or vendors 	<p>Ability to:</p> <ul style="list-style-type: none"> • Collect and analyze information • Assess individual knowledge and analyze work assignments • Organize and summarize information and requirements • Assess a need, create a plan, and execute appropriately. • Manage time and workload

Operating Systems: Work that involves the planning, installation, configuration, testing, implementation, and ironment in support of the organization's IT architecture and business needs.

Career/Skill	Performance-Level Expectation Exempt Technical Job-level Expectation	Technical Knowledge Skills, Abilities, Tools	Professional Skills Competencies
<p>consideration personnel, time, and hardware requirements, and makes trade-off analyses; develops general and detailed documentation describing system specifications and operating instructions; and revises existing systems and procedures to correct deficiencies and maintain more effective data handling, conversion, input/output requirements, and storage.</p> <p>Sys Integration Analyst Asc.</p> <ul style="list-style-type: none"> • Plans, implements, tests, documents, and maintains enterprise-wide solutions to total system or subsystems using internally created and/or off-the-shelf products. • Analyzes and identifies all or part of a company's existing or new peripheral, network, and telecommunications systems requirements, taking into consideration the special technology needs. • Establishes functional and technical specifications and standards, solves hardware/software interface problems, defines input/output parameters, and ensures integration of the entire system or subsystem. 			

Network Services: Work that involves the planning, analysis, design, development, testing, quality assurance, configuration, installation, implementation, integration, maintenance, and/or management of networked systems used for the transmission of information in voice, data, and/or video formats.

Career/Skill	Performance-Level Expectation Exempt Technical Job-level Expectation	Technical Knowledge Skills, Abilities, Tools	Professional Skills Competencies
<p>Computer Opns Spt Anlst Asc</p> <ul style="list-style-type: none"> Provides support to an enterprise management system. Performs monitoring and management of mainframes, networks and workgroup servers. <p>Network Engineer Asc</p> <ul style="list-style-type: none"> Designs and plans network communications systems. Provides specifications and detailed schematics for network architecture. Provides specific detailed information for hardware and software selection, implementation techniques and tools for the most efficient solution to meet business needs, including present and future capacity requirements. Conducts testing of network design. Maintains technical expertise in all areas of network and computer hardware and software interconnection and interfacing, such as routers, multiplexers, firewalls, hubs, bridges, gateways, etc. Evaluates and reports on new communications technologies to enhance capabilities of the network. 	<p>Knowledge of, and skill in applying:</p> <ul style="list-style-type: none"> Network standards Network management tools Network equipment capabilities Network principles and concepts Network equipment and tools Configuration management concepts Life cycle management concepts 	<p>Knowledge of/to:</p> <ul style="list-style-type: none"> Sufficient to troubleshoot and maintain the stability of communications lines and equipment Sufficient to install, configure, and troubleshoot LAN and WAN components such as routers, hubs, switches, and servers Assist in maintaining network services, such as Dynamic Host Configuration Protocol (DHCP), Domain Name Server (DNS), and directory services Install, test, and configure network workstations and peripherals Instruct customers in logging on and accessing network services. 	<p>Ability to:</p> <ul style="list-style-type: none"> Multitask Manage timelines Organize and present technical terms and concepts to technical and non-technical audiences Think non-sequentially and globally Present alternative solutions concisely and clearly

Systems Administration: Work that involves planning and coordinating the installation, testing, operation, troubleshooting, and maintenance of hardware and software systems.

Career/Skill	Performance-Level Expectation Exempt Technical Job-level Expectation	Technical Knowledge Skills, Abilities, Tools	Professional Skills Competencies
<p>Systems Administrator Asc</p> <ul style="list-style-type: none"> • Maintains smooth operation of multi-user computer systems, including coordination with network administrators. • Duties may include setting up administrator and service accounts, maintaining system documentation, tuning system performance, installing system-wide software, and allocate mass storage space. • Interacts with users and evaluates vendor products. • Makes recommendations to purchase hardware and software, coordinates installation and provides backup recovery. • Develops and monitors policies and standards for allocation related to the use of computing resources. 	<p>Knowledge of, and skill in applying:</p> <ul style="list-style-type: none"> • Systems administration methods and procedures • Performance monitoring methods • Analytical methods • IT security principles • Analytical reasoning 	<p>Knowledge of/to:</p> <ul style="list-style-type: none"> • Install server upgrades • Schedule downtime to minimize user impact • Monitor server performance using performance monitoring tools • Recognize and refer problems to more experienced specialists • Schedule, monitor, and verify the integrity of system backups and restore files as needed • Correct security vulnerabilities in assigned systems in response to problems identified in vulnerability reports • Serve as a member of a team responsible for planning and managing large-scale server deployment 	<p>Ability to:</p> <ul style="list-style-type: none"> • Analyze data and understanding root cause • Apply rules/principles to process/procedures and use logic to draw conclusion • Collect, interpret, synthesize, and communicate information to stakeholders • Organize and document process and outcomes • Meet deadlines

Policy and Planning: Work that involves a wide range of IT management activities that typically extend and apply to an entire organization or major components of an organization. This includes strategic planning, capital planning and investment control, workforce planning, policy and standards development, resource management, knowledge management, architecture and infrastructure planning and management, auditing, and information security management.

Career/Skill	Performance-Level Expectation Exempt Technical Job-level Expectation	Technical Knowledge Skills, Abilities, Tools	Professional Skills Competencies
	<p>Knowledge of, and skill in applying:</p> <ul style="list-style-type: none"> • IT concepts • Program management principles • Communication techniques • Analytical reasoning 	<p>Knowledge of/to:</p> <ul style="list-style-type: none"> • Provide input to drafting position papers on IT issues such as policy implications of new business strategies; e.g., e-Government, knowledge management, and paperwork elimination • Identify relevant information including industry standards and practices • Present alternatives • Make recommendations • Assist in implementing decisions 	<p>Ability to:</p> <ul style="list-style-type: none"> • Demonstrate systems thinking • Understand system and organizational constraints and develop creative solutions • Present alternative solutions

Application Software: Work that involves the design, documentation, development, modification, testing, installation, implementation, and support of new or existing applications software.

Career/Skill	Performance-Level Expectation Exempt Technical Job-level Expectation	Technical Knowledge Skills, Abilities, Tools	Professional Skills Competencies
<p>Computer Apps Analyst Asc</p> <ul style="list-style-type: none"> Responsible for full-phase analysis, design, development, testing and implementation of personal computer applications. Performs ad hoc reporting from host systems. Supports and maintains existing departmental personal computer applications. Provides training and presentations to internal personnel and management. <p>Software Config Analyst Asc</p> <ul style="list-style-type: none"> Develops and maintains software configuration management tools to support configuration identification, control, reporting, and delivery of both internally developed and externally purchased commercial off-the-shelf (COTS) software products. Performs configuration management and release engineering tasks to ensure new software product operating parameters are documented, comply with standard hardware configurations, and are logistically sustainable. Designs, develops, automates, and maintains productivity tools using programming, database or scripting languages to improve software modeling and development. Designs and implements build procedures that are used to support software product development and use. 	<p>Knowledge of, and skill in applying:</p> <ul style="list-style-type: none"> Applications software principles and methods Programming languages Systems development processes Technical documentation procedures 	<p>Knowledge of/to:</p> <ul style="list-style-type: none"> Participate on a team designing, developing, testing, and implementing software for less complex programs, such as modifying input forms Document customer business rules Develop flow diagrams and/or pseudo-code Test and debug programs according to detailed requirements Submit completed applications software to the project leader Support the maintenance of existing applications software 	<p>Ability to:</p> <ul style="list-style-type: none"> Examine information/data relevance and accuracy Follow processes/procedures Integrate multiple data and contrast conflicting data Ability to interpret symbols, diagrams, and schematics Ability to organize information and communicate to various audiences Translate the meaning of key business strategy into actions

Application Software: Work that involves the design, documentation, development, modification, testing, installation, implementation, and support of new or existing applications software.

Career/Skill	Performance-Level Expectation Exempt Technical Job-level Expectation	Technical Knowledge Skills, Abilities, Tools	Professional Skills Competencies
<p>Software Config Analyst Asc (cont)</p> <ul style="list-style-type: none"> • Develops software configuration standards and policies for company-wide use. • Trains software developers in the use of configuration management tools and the implementation of software quality standards. • Maintains the Software Configuration Management System including collection or distribution of code documentation, problem report and change request processing, software build documents, and delivery of software products to operational environments. • Implements long-term organizational objectives for software process improvement (e.g., SEI CMM), compliance with ISO 9000 standards, and software code reuse. <p>Software Dev Analyst Asc</p> <ul style="list-style-type: none"> • Researches, designs, develops, and/or modifies enterprise-wide systems and/or applications software. • Involved in planning of system and development deployment as well as responsible for meeting software compliance standards. • Evaluates interface between hardware and software, operational requirements, and characteristics of overall system. • Documents testing and maintenance of system corrections. 			

Application Software: Work that involves the design, documentation, development, modification, testing, installation, implementation, and support of new or existing applications software.

Career/Skill	Performance-Level Expectation Exempt Technical Job-level Expectation	Technical Knowledge Skills, Abilities, Tools	Professional Skills Competencies
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Internet: Work that involves the technical planning, design, development, testing, implementation, and management of Internet, intranet, and extranet activities, including systems/applications development and technical management of Web sites. This specialty only includes positions that require the application of technical knowledge of Internet systems, services, and technologies.

Career/Skill	Performance-Level Expectation Exempt Technical Job-level Expectation	Technical Knowledge Skills, Abilities, Tools	Professional Skills Competencies
<p>Info Tech Valid Analyst Asc</p> <ul style="list-style-type: none"> • Develops and administers company's participation and content of the Internet and is responsible for Web exposure and position. • Coordinates existing content updates with the various departments maintaining a presence on the Web. • Develops and implements all new content for the company site(s) from internal departments. • Implements marketing projects developed to exploit database marketing opportunities and provide new marketing and sales tools to cognizant departments. • Executes test updates for the Web site in applicable formats and coordinates graphical updates. • Implements new technology to maintain a competitive product and image on the Internet. • Communicates and educates sales personnel on solutions and tools available through the Internet and online networks. 	<p>Knowledge of, and skill in applying:</p> <ul style="list-style-type: none"> • Internet operations • Graphics markup languages • Programming languages • Internet server maintenance techniques • Software validation tools • Performance monitoring methods • Analytical methods • Internet principles; • Optimization or tuning tools • Internet clients • Browser technology • Quality assurance principles 	<p>Knowledge of/to:</p> <ul style="list-style-type: none"> • Diagnose and troubleshoot Web site operational problems such as broken links or file directory, server, or applications problems • Make corrections • Restore functionality • Fine-tune Web pages and other Internet services to ensure compatibility with different browsers • Test new browser versions for compatibility with existing services 	<p>Ability to:</p> <ul style="list-style-type: none"> • Analyze information and provide adequate response • Communicate concepts and ideas to less technical audience • Gather accurate requirements and execute according to expectation • Understand policies and procedures and operate under various constraints

Lockheed Martin Apprenticeship Training Program Apprentice Salary Schedule

**FOR THE OCCUPATION OF
IT Specialist I**

O*NET-SOC CODE:

Timing		Rationale	Schedule/Job Code/Title/CP	DV/WMA
Year 1	Junior Year Fall	Established in Standards - (Minimum of range Engineering Aide N8042)	Casual PT, N9081, IT Apprentice - CP Z	(64%)
	Junior Year Spring	(NE1)	Casual PT, N9081, IT Apprentice - CP Z	(65%)
Year 2	Summer (Rising Sr.)		Casual PT, N9081, IT Apprentice - CP Z	(66%)
	Senior Year Fall		Casual PT, N9081, IT Apprentice - CP Z	(67%)
	Senior Year Spring		Casual PT, N9081, IT Apprentice - CP Z	(68%)
Year 3	HS Graduation	PRS - focal point (NE1)	Full Time, N8362 IT Apprentice Sr - CP Z	(85%) (plus focal pt)
	Complete Training / OJL Rotations		Full Time, N8361 IT Apprentice Sr - CP Z	Focal pt
End of Year 3	Off Program Assignment	Annualized rate (off program placement - NE2)	No Post Placement, job title- per Comp - CP F	Annually based on Eng Aide 80% compa ratio

Note: Rates are subjected to change due to the market, and types of positions.
This data is for HR Use and Budget Purposes only.

**Lockheed Martin Apprenticeship Training Program
Apprentice Salary Schedule
FOR THE OCCUPATION OF
IT Specialist II
O*NET-SOC CODE:**

The personnel policies of Lockheed Martin include a compensation plan that requires an annual performance review for each and every employee that determines any potential salary increase. All Lockheed Martin employees receive performance reviews in December, and all salary increases occur in February. Lockheed Martin calls these salary increases Focal Point Adjustments.

During the two years of apprenticeship, the apprentice is considered for a salary increase each February, unless the apprentice's start date occurred in January, in which case the apprentice would receive his/her first performance review and potential Focal Point Adjustment, 13 months after the start date. *The amount of increase is dependent on the apprentice's performance, position in the Salary Range, and Lockheed Martin's salary planning budget.*

	Time Frame	Levels	Apprentice Salary Range
1.	0 to 12 Months	2	75% Minimum to 125% Maximum of the Midpoint of the Salary Range
2.	13 to 24 Months	2	May be considered for a Focal Point Adjustment 75% Minimum to 125% Maximum of the Midpoint of the Salary Range
3.	After 24 Months	2	May be considered for a Focal Point Adjustment 75% Minimum to 125% Maximum of the Midpoint of the Salary Range

Note: Amount of increase is dependent on apprentice's performance, position in the Salary Range, and Lockheed Martin's salary planning budget.

The minimum salary for an IT Specialist II, as of April 2009, was 75% Minimum to 125% Maximum. The entry-level salary for each apprentice will be determined based on the apprentice's previous experience and education; therefore, the starting salary may vary from one apprentice to another. The IT Specialist II is a *salaried* position and apprentices are therefore *exempt* from overtime pay.

For example, the minimum starting salary for an IT Specialist II is now 75% Minimum to 125% Maximum and if an apprentice's performance warranted a 3 percent merit increase after the first performance review, the apprentice's salary would be increased to 75% Minimum to 125% Maximum. If the apprentice's second performance review also justified a 3 percent Focal-Point Increase, the apprentice's salary would be increased to 75% Minimum to 125% Maximum.