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Apprenticeships for Tech

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National Guideline Standards for Tech Project Coordinator

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This document summarizes CompTIA's National Guideline Standards (NGS) for apprenticeship programs for Tech Project Coordinator.

The NGS define:

- The competencies the apprentices will be trained on at the workplace (referred to as the work process schedule)
- The supplemental coursework the apprentice will complete (referred to as the related instruction outline)
- Some elements of the structure of an apprenticeship program

By using the NGS as a starting point, businesses and partners can accelerate program development and more quickly launch Registered Apprenticeship Programs for Tech Project Coordinators. The NGS are:

- Designed to be **customizable** to meet the needs of each employer;
- **Competency-based** which provide more program flexibility;
- Complete with recommended minimum **coursework** that can be modified; and
- **Complementary** and stackable.

OCCUPATION DESCRIPTION

Responsible for managing an organization's information systems' project-based work, including the start-up, execution and closure of IT projects. Meets with project sponsor(s) to determine business needs, then utilizes a proven methodology to plan, direct, monitor, adjust and control a project while measuring, documenting, and reporting on progress toward project goals. Resolves issues of scope creep, resource availability, budget constraints and deadlines as they come up. Continually evaluates and mitigates project risks; communicates with stakeholders; supervises the project team; oversees vendors and contractors; and is generally responsible for project timeliness, cost, and quality outcomes.

For more information on CompTIA IT Apprenticeships for Tech or to request the full NGS documents approved by the U.S. Department of Labor, contact us at **ApprenticeshipsInIT@mahernet.com**

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Program Structure Elements

The NGS outline many important elements of a quality apprenticeship program, such as:

- Safety of apprentices
- Apprenticeship completion
- Mentoring
- Credit for previous experience
- Equal opportunity pledge

Model: Competency-based apprenticeship

Duration: 2,257 hours – not less than 2,000 hours of on-the-job learning, supplemented by the recommended minimum 257 hours of related instruction.

Minimum Qualifications: 10th grade math and English (apprenticeship program sponsors can identify additional minimum qualifications).

Recommended Wage Schedule: Apprentices shall be paid a progressively increasing schedule of wages based on the current industry average hourly mentor wage rate of $31.00.

- First third of apprenticeship: industry average $18.00
- Second half of apprenticeship: industry average $22.00

Recruitment: Apprenticeship program sponsors recruit and select applicants either through an internal process for incumbent workers and/or make the apprenticeship opportunity available to the public and external organizations through outreach efforts, job fairs, collaborative partnerships, and web-based activities. Program sponsors can work with community-based organizations; educational institutions, such as community colleges, technical schools, and high schools; workforce organizations; or other partners to create appropriate outreach and positive recruitment efforts that would reasonably be expected to increase underrepresented population participation in the apprenticeship.

U.S. Department of Labor Codes:

- O*NET-SOC code: *15-1299.09 Information Technology Project Managers*
- Registered Apprentice Occupation Code (RAPIDS code): 1048CB

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Competencies

The competency sets include both technical and employability skills that the apprenticeship will learn at the workplace. The technical competencies align with designated CompTIA certifications and can be readily aligned with courses designed to prepare students for certification.

PART 1 – BASICS OF PROJECT MANAGEMENT

1. Demonstrate knowledge of the properties of a project.
2. Demonstrate knowledge of project roles and responsibilities.
3. Demonstrate knowledge of standard project phases.
4. Demonstrate knowledge of basic cost control models for projects.
5. Demonstrate knowledge of organizational structures for project teams.
6. Demonstrate skills required to execute and develop project schedules.
7. Demonstrate knowledge of basic Agile project management methodologies.
8. Demonstrate knowledge of resource management (including human resources).

PART 2 – MANAGING PROJECT CONSTRAINTS

9. Demonstrate skills required to predict the impact of constraint variables and other influences throughout the project lifecycle.
10. Demonstrate knowledge of risk strategies and risk management activities.

PART 3 – COMMUNICATION AND CHANGE MOVEMENT

11. Demonstrate skills required to use the appropriate communication method in a given situation.
12. Demonstrate knowledge of factors that can influence one's choice of communication strategy.
13. Demonstrate knowledge of project events that would trigger communication to stakeholders and determine the target audience and rationale.
14. Demonstrate skills required to use change-control processes within the context of a project.
15. Demonstrate knowledge of types of organizational change like mergers/acquisitions, internal restructuring, relocation and outsourcing.

PART 4 – PROJECT TOOLS AND DOCUMENTATION

16. Demonstrate knowledge of various project management tools.
17. Demonstrate skills required to analyze project-centric documentation.
18. Demonstrate knowledge of partner- or vendor-centric documents and their purpose.

PART 5 – GENERAL IT TERMINOLOGY AND CONCEPTS

19. Demonstrate knowledge of notational systems.
20. Demonstrate knowledge of basic data types.
21. Demonstrate knowledge of computing and processing basics.
22. Demonstrate knowledge related to the importance of data and information.
23. Demonstrate knowledge of units of measure in IT.
24. Demonstrate knowledge of a troubleshooting methodology.

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PART 6 – COMPUTING INFRASTRUCTURE

25. Demonstrate knowledge of input and output interfaces.
26. Demonstrate skills required to install and deploy peripheral devices for common computing devices.
27. Demonstrate knowledge of internal computing components.
28. Demonstrate knowledge related to types of internet service.
29. Demonstrate knowledge of types of storage.
30. Demonstrate knowledge of computing devices.
31. Demonstrate knowledge related to the basics of networking concepts.
32. Demonstrate skills required to deploy, secure and maintain a basic wireless network.

PART 7 – SOFTWARE AND APPLICATIONS

33. Demonstrate knowledge related to the purpose of operating systems.
34. Demonstrate knowledge related to modules of an operating system.
35. Demonstrate knowledge of the purpose of software.
36. Demonstrate knowledge related to methods of application delivery models.
37. Demonstrate skills required to use web browsers.
38. Demonstrate knowledge of general application concepts.

PART 8 – SOFTWARE DEVELOPMENT AND DATABASE BASICS

39. Demonstrate knowledge of programming languages.
40. Demonstrate knowledge of general programming concepts.
41. Demonstrate knowledge of the purpose of databases.
42. Demonstrate knowledge of database structures.
43. Demonstrate knowledge of database interface methods.

PART 9 – SECURITY

44. Demonstrate knowledge related to the importance of confidentiality, integrity and availability.
45. Demonstrate knowledge of device security methods.
46. Demonstrate knowledge of security concepts related to behavior.
47. Demonstrate knowledge of authentication, authorization, accounting and non-repudiation.
48. Demonstrate knowledge of best practices for password use.
49. Demonstrate knowledge of encryption use cases.
50. Demonstrate knowledge of business continuity.

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PART 10 – BUSINESS ACUMEN

51. Demonstrate a basic understanding of the employer's corporate structure and business model, including its product and services portfolio, its primary customers, and its top competitors.
52. Demonstrate a basic knowledge of the employer's brand messaging, its value proposition in the marketplace, and key success metrics.

PART 11 – EMPLOYABILITY SKILLS

53. Demonstrate skills to provide competent customer service using active listening and empathy during various interactions (e.g., in-person, over telephone, email, and chat).
54. Demonstrate ability to manage stress and other emotions in the workplace to reduce conflict, foster collaboration, and promote wellness.
55. Demonstrate skills required to take and give productive critical feedback.
56. Demonstrate skills required to problem-solve using critical thinking, clarifying questions, and knowing when to escalate a situation to a superior.
57. Demonstrate skills to explain complex issues to non-technical customers without jargon or blaming.
58. Demonstrate ability to conduct oneself with integrity, professionalism, and in accordance with organization policy and procedure.
59. Demonstrate skills to communicate with colleagues, managers, and end users effectively and clearly, in a timely manner.
60. Demonstrate ability to use language, tone of voice, and non-verbal communication to neutralize conflict in the workplace.
61. Demonstrate skills required to collaborate effectively with team members from across the organization.
62. Demonstrate ability to use respectful cross-cultural communication to work successfully across the organization and with diverse coworkers.
63. Demonstrate knowledge required to manage time effectively, minimizing distractions to maintain productivity, prioritize work appropriately, and meet deadlines with situational awareness.
64. Demonstrate ability to adapt to changing organizational landscape.

Coursework (Related Instruction Outline)

Related instruction can be delivered to apprentices through in-house training, in a classroom, and/or online. The instruction can be provided by any combination of a community college, private industry training provider, sponsoring employer, or computer-based training. The NGS provide approximate number of hours for the related instruction. Course titles and classes may differ slightly from the descriptions below depending upon the related instruction provider.

RELATED INSTRUCTION DESCRIPTIONS	HOURS
New Employee Skills	**15**
• Safety training • Company orientation including privacy and confidentiality • Tools (internal messaging apps, office applications) • Sexual harassment prevention	
Business Acumen	**3**
• Company vision, mission, and key success metrics • The company's products and services and value proposition in the market	
Employability Skills	**60**
• Managing conflict • Being an effective team member • Business communication etiquette • Interpersonal communication • Intercultural communication • Critical thinking • Time management • Workplace wellness and managing stress • Handling workplace change • Leading across generations and personalities • Understanding diversity, equity, and inclusion fundamentals	
Technical and Professional Skills Covered by CompTIA Project+ Coursework and Certification	**81.5**
• Project Basics: Summarize the properties of a project. Classify project roles and responsibilities. Identify standard project phases and the basics of a project cost control, project scheduling, and Agile methodology. Explain the role of resource management (including human resources). • Project Constraints: Given a scenario, predict the impact of various constraint variables and influences throughout the project. Explain the importance of risk strategies and activities. • Communication and Change Management: Given a scenario, choose the appropriate communication method. Compare and contrast factors influencing communication method choices. Explain the project events that would trigger communication to stakeholders and determine the target audience and rationale. Given a scenario, use the proper change control process.	

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RELATED INSTRUCTION DESCRIPTIONS	HOURS
• Project Tools and Documentation: Recognize the types of organizational change. Compare and contrast various project management tools. Given a scenario, analyze project-centric documentation. Identify common partner- or vendor-centric documents and their purpose. • CompTIA Project+ ebook, and CertMaster Practice (or similar courseware). • Pass CompTIA Project+ Certification.	
Project Management Skills	**31**
• Agile software development methodology fundamentals • Managing effective teams • Popular project management productivity tools (e.g., Atlassian Confluence, Microsoft Teams, Slack, etc.) • Pivotal project management specialties (requirements, schedules, budgets, procurement, problem solving) • Rightsizing project management approach for small to large projects • Risk mitigation techniques • Stakeholder management techniques • Strategic communications	
Technical and Professional Skills Covered by CompTIA IT Fundamentals (ITF+) Coursework and Certification	**41.5**
• IT Concepts and Terminology: Compare and contrast notational systems, fundamental data types and their characteristics. Understand the basics of computing and processing and the value of data information. Compare and contrast common units of measure in IT. Explain troubleshooting methodology. • Infrastructure: Classify common types of input/output device interfaces. Given a scenario, set up and install common peripheral devices to a laptop/PC. Explain the purpose of common internal computing components. Compare and contrast common Internet service types, storage types, and common computing devices and their purposes. Explain basic networking concepts. Given a scenario, explain how to install, configure and secure a basic wireless network. • Applications and Software: Compare and contrast components of an operating system. Explain methods of application architecture and delivery models. Given a scenario, configure and use web browsers. Compare and contrast general application concepts and uses.	

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RELATED INSTRUCTION DESCRIPTIONS	HOURS
• Software Development: Compare and contrast programming language categories. Given a scenario, use programming organizational techniques and interpret logic. Explain the purpose and use of programming concepts. • Database fundamentals: Explain database concepts and the purpose of a database. Compare and contrast various database structures. Summarize methods used to interface with databases. • Security: Summarize confidentiality, integrity and availability concerns. Explain best practice methods to create passwords and secure devices. Summarize behavioral security concepts. Compare and contrast authentication, authorization, accounting and non-repudiation concepts. Explain business continuity concepts. • CompTIA IT Fundamentals (ITF+) CertMaster Learn, CompTIA Labs and CertMaster Practice (or similar courseware). • Pass CompTIA IT Fundamentals (ITF+) exam.	
Customer Engagement Skills Covered by the IBM Professional Certificate*	**25**
• Communication skills focused on clear concise communication and listening • Appropriate empathetic behavior such as such as patience, curiosity, and willingness to help • Problem-solving to research an issue and help determine an appropriate resolution • Process adherence to ensure the proper flow and Service Level Agreements are met *or similar customer service training*	
TOTAL MINIMUM HOURS:	**257**

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