



**TECKYGUYS
ACADEMY**

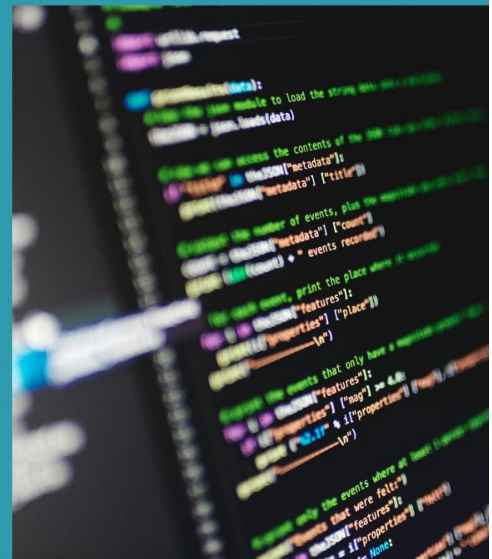
PROGRAMMING & DEVELOPMENT

PATHWAY GUIDE

PREPARED BY: CHROME TECH LLC

2026 EDITION

A practical pathway for beginners, career changers, working professionals and experienced technicians.



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ABOUT THIS GUIDE

Welcome to the Programming & Development Pathway

This standalone guide explains the curriculum, guided projects, development simulations, assessments, portfolio requirements, awards and career preparation across the TeckyGuys Programming & Development Pathway.

What this guide covers

- Level 1 — Programming & Web Foundations
- Level 2 — Application Development
- Level 3 — Advanced Programming Specializations (planned)
- Cisco Networking Academy learning, TeckyGuys guided projects and capstone assessments
- Software-development tools, standards, responsible AI use and career opportunities

What this guide does not replace

- The TeckyGuys Academy Catalog and Student Handbook
- The student's written enrollment agreement and program offer
- Current Cisco, Python Institute, JavaScript Institute or other external certification requirements
- Employer-specific experience, access, screening or work-authorization requirements

IMPORTANT : Course access, schedules, included services, examination vouchers and advanced-level availability must be confirmed in writing for the applicable enrollment period.

NAVIGATION

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SECTION 1

Pathway Overview

The Programming & Development Pathway prepares students to design, write, test, debug, document and maintain computer programs and software applications.

The pathway combines:

- Programming and web-development courses available through Cisco Networking Academy
- TeckyGuys instructor-led practical training
- Coding laboratories and guided development projects
- Version-control and collaborative-development practices
- Software testing and debugging
- Database, application-programming-interface and deployment fundamentals
- Practical assessments and portfolio projects
- Career and professional-development preparation

The pathway has three clearly defined levels:

Level 1 — Programming & Web Foundations

Level 2 — Software & Application Development

Level 3 — Advanced Application, API & Full-Stack Development

Each level identifies:

- The courses students complete
- The programming and development skills taught
- The practical projects delivered by TeckyGuys
- The tools and laboratory activities used
- The assessment students must pass
- The award students receive
- The career and certification preparation provided

Courses available through Cisco Networking Academy provide the principal course curriculum for Levels 1 and 2.

Some programming courses available through Cisco Networking Academy may be developed with or delivered through an approved curriculum partner. TeckyGuys will identify the applicable course provider in the student's enrollment information.

TeckyGuys Academy adds instructor guidance, practical coding laboratories, development projects, code reviews, assessments, portfolio preparation and career-development activities.

Level 3 is a TeckyGuys advanced practical program. It may use approved vendor learning resources, but TeckyGuys will not represent those resources as official Cisco courses unless they are specifically offered through Cisco Networking Academy.

BUILD RESPONSIBLY Students must use assigned development environments, lawful data and authorized services for every project.

SECTION 2

Who This Pathway Is For and How It Progresses

The Programming & Development Pathway is designed for:

- Complete beginners interested in programming
- Students who want to learn how software is created
- Aspiring software developers
- Aspiring web developers
- IT support technicians moving into automation
- Networking professionals interested in programmability
- Cybersecurity students who need scripting skills
- Linux and systems-administration students
- Cloud and DevOps candidates
- Data and artificial-intelligence students
- Technical professionals seeking programming foundations
- Entrepreneurs seeking to build or supervise digital products
- Students preparing for entry-level programming examinations
- Individuals progressing toward software-development education or employment.

Previous programming experience is not required for Level 1.

Basic computer literacy is recommended.

The required courses provide structured programming and web-development knowledge.

TeckyGuys Academy provides the practical experience required to apply that knowledge through guided exercises, development projects, debugging activities, code reviews, documentation and capstone assessments.

SECTION 3

Entry Requirements and Readiness

3.1. Level 1 Entry

Level 1 is open to beginners, Previous programming or web-development experience is not required.

Students should be able to:

- Operate a computer
- Use files and folders
- Install or access approved applications
- Use a web browser
- Follow written technical instructions
- Communicate basic technical questions
- Participate in individual and group activities

3.2. Level 2 Entry

Students can enter Level 2 after:

- Successfully completing Level 1;
- Completing equivalent introductory programming training;
- Holding an approved foundational programming credential; or
- Demonstrating equivalent knowledge through education, certification, employment experience or a TeckyGuys readiness assessment.

Students entering Level 2 should understand:

- Variables and data types
- Input and output
- Conditions and loops
- Functions

- Basic collections
- Program execution
- Basic debugging
- HTML document structure
- Basic webpage styling
- Safe and responsible coding practices

3.3. Level 3 Entry

Students can enter Level 3 after:

- Successfully completing Level 2;
- Holding an approved programming or software-development credential;
- Demonstrating relevant application-development experience; or
- Passing a TeckyGuys advanced-program readiness assessment.

Students entering Level 3 should be able to:

- Write and organize programs
- Use functions and reusable modules
- Work with common data structures
- Handle basic errors
- Read and modify existing code
- Use basic object-oriented concepts
- Build an interactive webpage
- Use version control at a foundational level
- Test and debug a small application
- Document a development project

TeckyGuys Academy reviews and approves all direct-entry requests.

DIRECT ENTRY: TeckyGuys determines placement after reviewing prior learning, experience and demonstrated technical readiness.

LEVEL 1

3.4. Programming & Web Foundations

Level 1 introduces students to computational thinking, programming logic, Python, webpage structure and visual presentation.

Students learn how to:

- Break a problem into manageable steps
- Represent a solution as an algorithm
- Write and run a basic computer program
- Store and process information
- Make decisions using conditions
- Repeat operations using loops
- Organize code using functions
- Identify and correct programming errors
- Create structured webpages
- Apply webpage styling
- Develop small beginner projects
- Explain and document completed work

Level 1 is appropriate for students who have never written code and for technical professionals who need a structured programming foundation.

3.4.1. Level 1 Courses — Part 1

Every Level 1 student completes the following courses available through Cisco Networking Academy:

3.4.1.1. Python Essentials 1

Students develop foundational knowledge and practical ability in:

- Computer programming concepts
- Programming languages and interpreters
- Python syntax
- Literals and variables
- Numeric, Boolean and string data
- Operators and expressions
- Input and output
- Type conversion
- Conditional statements
- Logical operations
- Loops
- Lists and basic collections
- Functions
- Parameters and return values
- Scope awareness
- Basic exception awareness
- Program testing
- Debugging
- Code readability
- Basic program design

3.4.2. Level 1 Courses — Part 2

Python Essentials 1 provides the principal introductory programming course for Level 1.

3.4.2.1 HTML Essentials

- The purpose of HTML
- Webpage and website structure
- HTML documents
- Elements and attributes
- Headings and paragraphs
- Lists
- Links
- Images
- Tables
- Forms
- Page sections
- Semantic HTML
- Basic accessibility
- Content organization
- Browser inspection
- Validation awareness
- Responsible webpage development

3.4.3. Level 1 Courses — Part 3

3.4.3.1. CSS Essentials

- The purpose of CSS
- Selectors
- Properties and values
- Colors and typography
- Spacing
- Borders
- Backgrounds

- The box model
- Element sizing
- Display and positioning
- Basic page layouts
- Flexible layouts
- Responsive-design concepts
- Styling forms and navigation
- Reusable style rules
- Browser compatibility awareness
- Basic accessibility and readability
- Organizing stylesheets.

These courses form the required academic curriculum for Level 1.

If Cisco Networking Academy or an applicable curriculum provider changes a course title or restructures its programming portfolio, TeckyGuys may use the current approved equivalent while preserving the published Level 1 learning outcomes.

3.4.4. Practical Training & Guided Projects — Part 1

TeckyGuys reinforces the required courses through guided programming and web-development laboratories.

Students complete activities covering:

- Preparing an approved coding environment
- Creating and organizing project folders
- Using a code editor
- Running a Python program
- Using comments appropriately
- Declaring and updating variables
- Receiving user input
- Producing formatted output

- Performing calculations
- Using Boolean expressions
- Writing conditional statements
- Creating for and while loops
- Processing lists
- Writing reusable functions
- Passing values into functions
- Returning values from functions
- Reading error messages
- Identifying syntax, runtime and logic errors
- Tracing a program manually
- Testing programs with different inputs
- Improving code readability
- Creating an HTML document
- Organizing headings, paragraphs, lists and links
- Adding approved images and media
- Creating basic tables and forms

3.4.5. Practical Training & Guided Projects — Part 2

- Applying semantic HTML
- Creating a CSS stylesheet
- Applying typography, color and spacing
- Using the box model
- Building a simple page layout
- Making a webpage responsive
- Reviewing basic accessibility
- Inspecting a webpage using browser-development tools
- Preparing a basic project description
- Demonstrating and explaining completed work

Students must use only approved development environments, accounts, content and project resources.

Each Level 1 student completes several small projects.

Projects may include:

- A personal calculator
- A unit-conversion program
- A grade or score analyzer
- A simple budget calculator
- A text-based quiz
- A basic contact or inventory list
- A password-strength awareness demonstration
- A personal profile webpage
- A small business information page
- A community-initiative landing page
- A responsive event page
- A training-program information page

Projects are selected according to the learning outcomes, instructor availability and student readiness.

Students must not publish personal, confidential, copyrighted or unauthorized information within a project.

3.4.6. Programming Foundations Practical Assessment

Every Level 1 student completes a Programming and Web Foundations assessment.

The student must:

- Review a stated beginner-level problem
- Identify the required inputs, processing and outputs
- Prepare an algorithm, flow description or pseudocode
- Create a Python program that addresses the problem
- Use variables, conditions, loops and functions appropriately
- Test the program with multiple approved inputs
- Identify and correct introduced errors
- Create a structured HTML page presenting the project

- Apply an approved CSS design
- Demonstrate basic responsive behavior
- Review the webpage for readability and accessibility
- Organize the project files correctly
- Prepare a short project description
- Demonstrate and explain the completed work

The assessment evaluates:

- Problem analysis
- Programming logic
- Python syntax
- Variables and data types
- Conditions and loops
- Functions
- Testing and debugging
- HTML structure
- CSS styling
- File organization
- Accessibility awareness
- Documentation
- Communication
- Academic integrity
- Professional conduct

EVIDENCE : Source code, repositories, project records and explanations must accurately represent the student's own work.

3.4.7. Level 1 Completion and Award

To complete Level 1, the student must:

- Complete all required Level 1 courses
- Complete the TeckyGuys practical laboratories
- Complete the required guided projects
- Pass the Level 1 practical assessment
- Meet attendance and participation requirements
- Follow conduct and academic-integrity standards
- Follow all access and acceptable-use requirements
- Resolve applicable academic and administrative requirements

Eligible students receive:

- Applicable Cisco Networking Academy or curriculum-provider course certificates
- Applicable digital badges
- The TeckyGuys Academy Programming & Web Foundations Award

Level 1 provides foundational preparation for continued study in programming, web development, automation, data, cybersecurity and software development.

A Level 1 award is an academy pathway award. It is not a professional software-engineering certification.

Level 2

3.5. Level 2 — Software & Application Development

Application Development

Level 2 moves students from introductory coding into structured software and application development.

Students learn to:

- Design more substantial programs
- Organize code into reusable components

- Work with advanced data structures
- Apply object-oriented programming
- Read and write approved data files
- Handle errors
- Build interactive browser-based applications
- Use version control
- Test and debug applications
- Review another developer's code
- Document technical decisions
- Complete portfolio-ready development projects

Level 2 is designed for:

- Students who have completed Level 1
- Learners with equivalent Python foundations
- Aspiring junior software developers
- Aspiring front-end developers
- IT professionals seeking automation skills
- Cloud and DevOps candidates
- Cybersecurity students seeking stronger programming ability
- Data and artificial-intelligence students
- Technical professionals preparing for application-development responsibilities

3.5.1. Level 2 Courses — Part 1

Every Level 2 student completes the following courses available through Cisco Networking Academy:

3.5.1.1. Python Essentials 2

Students develop deeper Python knowledge and practical ability in:

- Modules and packages
- Importing and organizing reusable code
- Python's standard library
- Strings and string methods

- Lists, tuples, dictionaries and sets
- Iteration and data processing
- Exceptions and error handling
- Object-oriented programming
- Classes and objects
- Attributes and methods
- Inheritance
- Polymorphism awareness
- File operations
- Data persistence fundamentals
- Date and time processing
- Program organization
- Testing and debugging
- Code quality and documentation

Python Essentials 2 develops the student's ability to create more structured and maintainable programs.

3.5.2. Level 2 Courses — Part 2

3.5.2.1. JavaScript Essentials 1

Students develop foundational JavaScript knowledge and practical ability in:

- JavaScript syntax
- Variables and constants
- Data types
- Operators and expressions
- Input and output concepts
- Conditions
- Loops
- Functions
- Arrays
- Objects

- Basic error handling
- Program flow
- Code debugging
- Browser-based scripting concepts
- Interactive application logic
- Responsible use of scripts

JavaScript Essentials 1 supports progression from static webpages into interactive browser-based applications.

These courses form the required academic curriculum for Level 2.

TeckyGuys supplements the courses with software-development practices, version control, project organization, browser interaction, application testing and portfolio development.

If Cisco Networking Academy or an applicable curriculum provider updates a course title or sequence, TeckyGuys may use the current approved equivalent while preserving the published Level 2 learning outcomes.

3.5.3. Application Development Practice — Part 1

TeckyGuys reinforces the course curriculum through structured application-development laboratories.

Students complete activities covering:

- Translating requirements into program features
- Preparing pseudocode and basic flow diagrams
- Separating a program into functions and modules
- Creating reusable code
- Using Python modules and packages
- Processing strings and collections
- Working with dictionaries and structured data
- Creating classes and objects
- Applying constructors, properties and methods
- Applying inheritance in an approved scenario
- Reading from and writing to approved files

- Working with structured formats such as JSON
- Handling expected errors
- Validating user input
- Logging basic application events
- Creating interactive JavaScript
- Connecting JavaScript to approved HTML elements
- Responding to user actions

3.5.4. Application Development Practice — Part 2

- Manipulating webpage content
- Processing forms
- Validating form data
- Building reusable JavaScript functions
- Organizing application files
- Using browser-development tools
- Identifying client-side errors
- Creating and using a Git repository
- Recording meaningful commits
- Working with branches in an approved exercise
- Reviewing and combining approved code changes
- Preparing a project README
- Recording known limitations
- Writing test cases
- Performing functional testing
- Conducting peer code reviews
- Responding professionally to review comments
- Demonstrating completed software
- Preparing a portfolio entry

The exact development tools used may vary according to licensing, instructor access and laboratory availability.

LEVEL 2 • SIMULATION

3.5.5. Software-Development Team Simulation

Students participate in a simulated software-development project.

Working individually or in an assigned team, students must:

- Receive an approved project brief
- Review the problem, users and expected outcome
- Clarify functional requirements
- Identify basic nonfunctional requirements
- Divide the work into manageable tasks
- Prepare a basic development plan
- Assign or accept project responsibilities
- Create the required project structure
- Develop the approved features
- Record work through version control
- Test individual components
- Review code and provide constructive feedback
- Track defects and incomplete items
- Correct approved defects
- Integrate the completed components
- Conduct user-acceptance testing in a simulated environment
- Prepare project documentation
- Demonstrate the completed application
- Conduct a project retrospective

The simulation emphasizes:

- Requirements awareness
- Development planning
- Programming accuracy
- Version-control discipline
- Collaboration

- Testing
- Code review
- Documentation
- Communication
- Accountability
- Ethical conduct

Students are assessed on both the completed application and the development process.

TEAM WORKFLOW: Students must document requirements, assigned work, code review, testing, issue resolution and release decisions.

LEVEL 2 • PORTFOLIO

3.5.6. Application Portfolio Projects

Every Level 2 student completes approved development projects suitable for inclusion in a beginner or junior-developer portfolio.

Projects may include:

- A command-line inventory application
- A student-record management application
- A small business expense tracker
- A service-ticket tracking application
- An appointment or reservation application
- A task-management application
- A data-validation and reporting tool
- A responsive interactive website
- A client-side quiz or learning application
- A basic product or service catalog
- A community-program registration interface
- A technician job-tracking prototype
- A simple application that reads and processes approved data

- An introductory automation tool

Each project must include:

- A project purpose
- Defined user requirements
- Organized source code
- Appropriate input validation
- Basic error handling
- Testing evidence
- A README or project guide
- Known limitations
- A student demonstration

Students must identify all external code, libraries, templates, data, images and assistance used in accordance with TeckyGuys academic-integrity requirements.

3.5.7. Application Development Capstone

Every Level 2 student completes a Software and Application Development capstone.

The student must:

- Review an approved organizational or community problem
- Identify the intended users and requirements
- Define the project scope
- Prepare a development plan
- Design the application structure
- Create the required source-code repository
- Develop a Python or approved JavaScript-based application
- Use functions, modules or reusable components appropriately
- Use approved object-oriented concepts where applicable
- Process and store approved data
- Validate user input
- Handle expected errors
- Test the application against documented cases

- Identify and correct defects
- Record development history using version control
- Prepare user and technical documentation
- Produce a deployment or execution guide
- Demonstrate the completed application
- Present and defend the technical decisions made
- Explain the project's limitations and possible improvements
- The capstone evaluates:
 - Problem analysis
 - Requirements interpretation
 - Program design
 - Python or JavaScript development
 - Data structures
 - Functions and modularity
 - Object-oriented programming awareness
 - Input validation
 - Error handling
 - File or data processing
 - Testing and debugging
 - Version control
 - Code organization
 - Documentation
 - Presentation
 - Ethical conduct
 - Professional judgment

3.4.8. Level 2 Completion and Award

To complete Level 2, the student must:

- Complete both required Level 2 courses
- Complete the TeckyGuys application-development laboratories

- Participate in the development-team simulation
- Complete the required portfolio projects
- Pass the Level 2 capstone assessment
- Meet attendance and participation requirements
- Follow access, privacy, security and acceptable-use requirements
- Follow conduct and academic-integrity standards
- Resolve applicable academic and administrative requirements

Eligible students receive:

- Applicable Cisco Networking Academy or curriculum-provider course certificates
- Applicable digital badges
- The TeckyGuys Academy Software & Application Development Award

Level 2 supports preparation for junior programming, software-support, application-development and technical-automation responsibilities.

The completed portfolio may provide evidence of the student's work, but it does not guarantee that an employer will accept the student for a particular position.

Level 3

3.6. Level 3 — Advanced Application, API & Full-Stack Development

Status and Advanced-Level Overview

Level 3 is the planned advanced stage of the Programming & Development Pathway.

It will be delivered as a TeckyGuys advanced practical program using approved programming languages, development frameworks, databases, application-programming interfaces, testing tools, deployment platforms and vendor learning resources.

Enrollment will open after TeckyGuys confirms:

- Qualified instructor availability

- Development-laboratory readiness
- Required software and licensing
- Database and application-hosting environments
- Approved cloud or deployment environments
- Source-code management arrangements
- Application-security procedures
- Assessment and project-supervision procedures

TeckyGuys will publish the exact required languages, frameworks, vendor courses and platforms before Level 3 enrollment opens.

Until these requirements are confirmed, TeckyGuys will not advertise Level 3 as open for enrollment.

Level 3 prepares qualified students to design, build, test, secure, integrate and deploy more substantial software applications.

Students progress beyond individual programming exercises into:

- Software architecture fundamentals
- Full-stack application development
- Database design and integration
- Application-programming interfaces
- Authentication and authorization
- Secure development
- Automated testing
- Collaborative source-code management
- Application packaging and deployment
- Monitoring and troubleshooting
- Software maintenance
- Development operations awareness
- Technical project delivery

Level 3 is designed for students progressing toward:

- Junior Software Developer
- Full-Stack Developer

- Backend Developer
- Front-End Developer
- Application Developer
- API Developer
- Software Support Engineer
- Automation Developer
- Cloud Application Developer
- DevOps Support Developer
- Quality-Assurance Automation Technician
- Junior Software Engineer responsibilities

PLANNED DELIVERY: Level 3 opens only after qualified instructors, laboratories, software, licensing and supervision controls are confirmed.

3.6.1. Advanced Specialization Curriculum — Part 1

Level 3 does not claim additional Cisco courses unless those courses are specifically identified before enrollment.

The TeckyGuys advanced curriculum covers the following integrated learning areas:

3.6.1.1 Advanced Programming and Software Design

Students develop practical ability in:

- Advanced functions and modules
- Object-oriented design
- Reusable components
- Interfaces and abstraction concepts
- Design-pattern awareness
- Dependency management
- Configuration management
- Structured error handling
- Application logging
- Data validation

- Performance awareness
- Refactoring
- Code readability and maintainability
- Technical-debt awareness
- Software-design documentation

3.6.1.2. Front-End Application Development

- Semantic HTML
- Responsive layouts
- Advanced CSS
- Modern JavaScript
- Document Object Model interaction
- Browser events
- Form management
- Client-side validation
- Asynchronous programming
- Data retrieval
- Front-end application state
- Component-based development concepts
- Accessibility
- Browser compatibility
- Front-end testing
- User-interface troubleshooting

3.6.1.3. Backend, Database and API Development

- Server-side application concepts
- Request and response handling
- Routing
- Application services
- Relational database concepts
- Tables, relationships and keys
- Structured query fundamentals

- Data creation, retrieval, updating and deletion
- Data-access layers
- API design

3.6.2. Advanced Specialization Curriculum — Part 2

- REST principles
- JSON data exchange
- API documentation
- Authentication and authorization concepts
- Error responses
- API testing
- Database backup and migration awareness

3.6.2.1. Testing, Security and Code Quality

- Unit-testing concepts
- Integration testing
- Functional testing
- User-acceptance testing
- Test-case design
- Automated-testing awareness
- Defect tracking
- Static-analysis awareness
- Dependency and vulnerability awareness
- Input validation
- Output encoding awareness
- Secrets protection
- Secure authentication
- Access-control checks
- Secure error handling
- Logging without exposing sensitive information
- Code-review procedures

- Responsible vulnerability reporting
- Secure-development lifecycle concepts

3.6.2.1 Deployment and Development Operations

- Development, testing and production environment concepts
- Application configuration
- Environment variables
- Package and dependency management
- Build processes
- Application packaging
- Container awareness
- Continuous-integration concepts
- Continuous-delivery concepts
- Deployment approval
- Cloud-hosting fundamentals
- Application health checks
- Logs and monitoring
- Rollback planning
- Incident response
- Version and release management
- Operational documentation
- Application maintenance

These areas form one integrated advanced program.

3.6.3. Advanced Programming Practical Training

- Students complete advanced activities covering:
- Reviewing a software-development project brief
- Conducting requirements-discovery activities
- Creating user stories or functional requirements
- Preparing an application data model
- Designing an application structure

- Creating reusable application components
- Applying object-oriented design
- Creating a responsive front-end interface
- Developing server-side application logic
- Creating and querying a relational database
- Connecting an application to approved data storage
- Designing an application-programming interface
- Creating approved API endpoints
- Processing JSON requests and responses
- Implementing input validation
- Applying approved authentication controls
- Applying role or permission concepts
- Protecting application secrets
- Handling errors safely
- Creating application logs
- Writing unit and integration tests
- Testing API behavior
- Conducting peer code reviews
- Identifying maintainability problems
- Refactoring approved code
- Managing branches and approved code integration
- Reviewing dependency risks
- Preparing application configuration
- Packaging an application
- Deploying to an approved development or testing environment
- Configuring health checks and basic monitoring
- Investigating simulated application failures
- Preparing release and rollback plans
- Writing user, developer and operational documentation
- Presenting technical and management summaries

The exact languages, frameworks, databases and platforms used may vary according to licensing, instructor access, employer relevance and laboratory availability.

LEVEL 3 • GOVERNANCE

3.6.4. Access, Security and Authorization Requirements

Before participating in Level 3 laboratories, each student must:

- Use only assigned accounts, repositories and environments
- Follow the stated development and deployment permissions
- Protect passwords, keys, tokens and other secrets
- Avoid placing secrets directly in source code
- Use only approved data
- Avoid collecting unnecessary personal information
- Follow privacy and data-handling requirements
- Use third-party libraries only when approved
- Review licensing requirements for external code
- Test security activities only in assigned environments
- Avoid deploying to production without authorization
- Follow approved change, review and release procedures
- Record material code and configuration changes
- Stop testing or deployment when unexpected behavior occurs
- Report unexpected access, data exposure or service disruption
- Follow applicable laws, policies and professional standards

Unauthorized system access, scanning, data collection, credential use, code deployment, service interference or security testing is prohibited.

Students must not test applications, APIs, websites, accounts, servers or networks belonging to another person or organization without documented authorization.

SCOPE CONTROL Development access is limited to assigned systems, code, data and services. Production access is never implied by course completion.

3.6.5. Advanced Programming Capstone and Completion

Every Level 3 student completes an Advanced Application, API and Full-Stack Development capstone.

- The student must; Review an approved organizational, business or community problem; Identify the intended users and stakeholders; Gather and document functional requirements
- Identify applicable security, privacy and accessibility requirements; Prepare a project plan and application design; Create the required source-code repository and workflow
- Build an approved front-end interface; Build the required backend application logic; Design and implement the approved database; Create or consume an application-programming interface
- Apply input validation and error handling; Apply approved authentication and authorization controls; Protect application secrets and sensitive information; Create and execute documented tests
- Review and correct identified defects; Conduct an approved code review; Package and deploy the application to an approved environment; Configure applicable logging and health monitoring
- Investigate and resolve a simulated application incident; Prepare a release and rollback plan; Prepare user, technical and operational documentation; Present and defend the completed solution
- Demonstrate compliance with access, privacy and security requirements; The capstone evaluates; Requirements analysis; Software design; Front-end development; Backend development; Database integration
- API development; Authentication and authorization; Secure coding; Testing; Version control; Deployment; Logging and troubleshooting; Documentation; Presentation; Project management; Professional judgment
- Ethical conduct; After Level 3 is activated, students must; Complete the published Level 3 curriculum; Complete all required advanced development laboratories

- Complete the assigned team-development activities; Pass the Level 3 capstone assessment; Meet attendance and participation requirements; Follow access, privacy, security and acceptable-use requirements
- Follow conduct and academic-integrity standards; Resolve applicable academic and administrative requirements; Eligible students receive
- Applicable approved vendor course certificates or badges, where available; The TeckyGuys Academy Advanced Application, API & Full-Stack Development Award; The TeckyGuys award is an academy pathway award.
- It is not a Cisco, Python Institute, JavaScript Institute, cloud-provider or other third-party professional certification.

RESOURCES

3.6.6. Programming Tools, Development Standards and Responsible AI

Depending on the pathway level and laboratory availability, students may work with approved versions of:

- Python; JavaScript; HTML; CSS; Approved code editors; Browser-development tools; Command-line environments; Jupyter notebooks, where applicable; Git; Approved source-code repositories
- Python packages; JavaScript package-management tools; Web-development frameworks; Backend-development frameworks; Relational databases; Approved nonrelational database demonstrations
- SQL tools; API-development tools; API-testing tools; JSON; Testing frameworks; Debuggers; Static-analysis tools; Dependency-review tools; Virtual machines; Containers
- Approved cloud-development environments; Application-hosting platforms; Logging and monitoring tools; Diagramming and project-planning tools; Cisco Networking Academy resources
- Approved curriculum-provider environments; Tools, languages and frameworks may change as technology, licensing and workplace practices evolve.

Use of a third-party tool does not mean students must purchase that provider's course, subscription or certification.

Students are expected to demonstrate professional software-development discipline throughout the pathway.; This includes: Understanding the problem before writing code

- Confirming project requirements; Dividing work into manageable tasks; Writing readable and appropriately organized code; Using clear names for variables, functions and components
- Avoiding unnecessary duplication; Testing work before presenting it; Reviewing error messages carefully; Recording meaningful code changes
- Protecting passwords, keys and confidential information; Using only authorized data; Crediting external code, libraries and assistance; Respecting software licenses
- Reviewing dependencies before use; Avoiding unauthorized copying; Following code-review procedures; Responding professionally to feedback; Documenting assumptions and limitations
- Communicating risks and delays honestly; Following approved deployment procedures; Preparing rollback or recovery plans; Protecting application users
- Maintaining professional technical records; The ability to make a program run is not sufficient for successful software-development work.

Students must also demonstrate problem-solving, testing, security awareness, documentation, maintainability, collaboration and professional judgment.

Programming students must follow TeckyGuys academic-integrity requirements.; Students must not; Submit another person's code as their own; Copy a complete project without authorization

- Remove ownership or license information; Use unauthorized solutions during an assessment; Misrepresent team contributions; Fabricate tests, results or development history
- Use artificial intelligence to avoid demonstrating required knowledge; Submit AI-generated code they cannot explain, test or support
- Include confidential information in an external AI service; use generated code without reviewing its security and licensing implications

- Where artificial-intelligence assistance is permitted, students must; Follow the instructor's stated rules; Disclose material AI assistance; Review and understand generated code
- Test the code; Correct identified defects; Confirm that no secrets or confidential data were exposed; Identify applicable external sources; Remain responsible for the final submission

TeckyGuys may require a student to explain, modify or reproduce submitted code during an assessment.

A student who cannot explain material parts of a submitted project may be required to complete an additional supervised assessment.

PROGRAM PLANNING

3.6.7. External Platforms, Certifications and Program Formats

The core pathway is built around programming and web-development courses available through Cisco Networking Academy and TeckyGuys practical training.

Third-party resources may be introduced for demonstrations, laboratory activities, optional enrichment or certification preparation.

- Examples may include resources relating to; Python Institute certifications; JavaScript Institute certifications; Git and source-code management; Front-end development
- Backend development; Database development; Application-programming interfaces; Cloud application development; Software testing; Secure software development; Container technologies
- DevOps; Cisco DevNet; C programming; C++ programming; Java programming; Mobile-application development
- C Essentials, C++ Essentials, JavaScript Essentials 2, DevNet Associate or other approved courses may be offered as optional enrichment, specialization or advanced preparation.

They are not automatically required for every Programming & Development Pathway student; Unless expressly stated in the student's enrollment agreement

- Third-party courses are not required for the TeckyGuys pathway award; Third-party certification examinations are not included; Commercial software subscriptions are not included
- Cloud-service charges are not included; Students are not required to purchase every tool demonstrated
- Optional external certificates do not replace TeckyGuys course and assessment requirements; Examination vouchers are not included; Public application hosting is not guaranteed
- Vendor platform access is not guaranteed beyond the stated enrollment period
- TeckyGuys will identify any required external course, platform, examination, subscription or fee before enrollment.; Self-Paced Learning

Students complete assigned Cisco courses and applicable TeckyGuys learning activities within the stated access period.

Self-paced enrollment includes only the services identified in the enrollment agreement.

It does not automatically include the complete instructor-led laboratory, team-development simulation, portfolio review, capstone assessment or career-support experience.

- 12-Week Cohort Program; Students complete one pathway level through a structured schedule that includes: Assigned Cisco Networking Academy courses or the published Level 3 curriculum
- Instructor-led sessions; Guided coding laboratories; Development assignments; Code reviews; Technical reviews; Professional-development activities; Portfolio development
- A final practical assessment or capstone; Students should expect to complete coding assignments outside scheduled instructor sessions.

The amount of additional work depends on the pathway level, the student's previous experience and the assigned projects.; 24-Week Career Transition Program

- The 24-Week Programming & Development Career Transition Program combines; Level 1 — Programming & Web Foundations; Level 2 — Software & Application Development

- The program provides a structured transition from beginner programming into junior-level application-development, software-support and technical-automation responsibilities.

Level 3 Advanced Program

Level 3 will be delivered separately after instructor, development-laboratory, software, database, hosting and licensing requirements have been confirmed.

Students must complete Level 2 or demonstrate equivalent programming and application-development knowledge before entering Level 3.

CERTIFICATION NOTICE Certification preparation is not the certification itself. Exams, vouchers and provider decisions remain separate unless expressly included.

PROGRESSION

3.6.8. Student Journey, Awards and Career Opportunities

Beginner Programming Route

- Complete Python Essentials 1; Complete HTML Essentials and CSS Essentials; Complete TeckyGuys introductory coding and web laboratories; Complete the required guided projects
- Pass the Level 1 practical assessment; Receive applicable course recognition and the TeckyGuys Level 1 award; Progress to Level 2; Junior Developer Route
- Complete Python Essentials 2 and JavaScript Essentials 1; Complete TeckyGuys application-development laboratories; Learn foundational Git and code-review practices
- Participate in the development-team simulation; Complete the required portfolio projects; Pass the Level 2 capstone
- Receive applicable course recognition and the TeckyGuys Level 2 award; Pursue internships, apprenticeships and junior-development opportunities

- Prepare for an applicable professional examination where appropriate; Advanced Application Route; After Level 3 is activated; Complete the published advanced curriculum
- Complete front-end, backend, database and API laboratories; Complete secure-development and testing activities; Participate in collaborative development and deployment exercises
- Pass the Level 3 capstone; Receive the TeckyGuys Level 3 award and applicable vendor recognition; Pursue developing software, web, cloud or automation opportunities
- Continue preparing for appropriate professional certifications; Students do not have to complete every level to receive recognition for a successfully completed individual level.
- Depending on the level completed, eligible students receive; Applicable Cisco Networking Academy course-completion certificates
- Applicable curriculum-provider certificates or digital badges; Applicable approved vendor course recognition; The corresponding TeckyGuys Academy pathway-level award

Professional certifications—including Python Institute, JavaScript Institute, Cisco, cloud-provider and other development certifications—require separate provider-controlled examinations and certification requirements.

Certification examination fees are separate unless expressly included in the student's enrollment agreement.

- A course-completion certificate, digital badge or TeckyGuys pathway award must not be represented as a professional software-engineering license or certification.
- After Level 1; Students can pursue introductory roles and development opportunities such as; Programming Trainee; Web Development Trainee; Junior Coding Intern; Technology Intern
- Software Support Trainee; Website Content Assistant; Junior Web Assistant; Quality-Assurance Trainee; Technical Automation Trainee; Coding Laboratory Assistant
- Digital Project Volunteer; Software Development Apprentice; After Level 2; Students can pursue entry-level or developing roles such as; Junior Python Developer

- Junior JavaScript Developer; Junior Web Developer; Entry-Level Software Developer; Application Support Technician; Software Support Analyst; Front-End Development Trainee
- Junior Automation Developer; Junior Quality-Assurance Analyst; Software Testing Technician; Technical Support Developer; Data Processing Developer; Junior Application Developer
- Website Support Developer; Development Support Technician; Technical Operations Automation Technician; After Level 3

After the advanced program is activated and successfully completed, students can pursue developing roles such as; Software Developer; Full-Stack Developer; Front-End Developer

- Backend Developer; Application Developer; API Developer; Web Application Developer; Software Support Engineer; Junior Software Engineer; Cloud Application Developer
- Automation Developer; DevOps Support Developer; Quality-Assurance Automation Developer; Integration Support Developer; Database Application Developer; Technical Solutions Developer
- Job titles and qualification requirements differ by employer.; Some positions require; A degree or diploma; Professional certification; Previous development experience
- A strong project portfolio; Knowledge of specific languages or frameworks; Database experience; Cloud-platform knowledge; Technical interviews or coding assessments
- Background screening; Work authorization; Onsite, remote or hybrid availability

Completion of a pathway level does not by itself establish that a graduate is qualified for a senior software developer, software architect, senior DevOps engineer or senior software-engineering position.

3.6.9. Related Pathways, Important Notice and Contact

Programming knowledge provides a strong foundation for continued study.

- After Level 1 or Level 2, students may progress into; AI & Data; Cloud & DevOps; Cybersecurity; Networking & Infrastructure; Linux & Systems Administration; Data Center Engineering
- IT Support; Programming is particularly valuable for; Data analysis; Artificial intelligence; Machine learning; Cybersecurity automation; Network automation; Cloud administration
- Infrastructure automation; DevOps; Systems administration; Application integration; Progression is subject to the entry requirements of the selected pathway.

TeckyGuys may require a readiness assessment when a student seeks direct entry into a higher pathway level.

TeckyGuys Academy provides programming education, practical training, assessment, portfolio development and career-development support.

- Completion of a pathway level does not guarantee; Passing a professional certification examination; Receiving a Cisco or third-party professional certification
- Internship or employment placement; A particular software-development position; Acceptance of a student project by an employer; A particular salary or contract rate
- Publication of an application; Commercial success of a project; Access to an employer's source code or systems; Selection by an employer
- Admission into a higher level without meeting its entry requirements

Cisco, Python Institute, JavaScript Institute, cloud providers and other certification providers control their respective examinations, fees, policies, validity periods and certification decisions.

Employment outcomes depend on the student's; Programming knowledge; Practical performance; Project portfolio; Testing and debugging ability; Communication; Professional conduct

- Certification status; Education; Experience; Location; Work authorization; Performance during technical interviews; Employer requirements

Students retain ownership of eligible original work they create unless a separate written project, employment, client or sponsorship agreement states otherwise.

- Students must respect; Copyright; Software licenses; Open-source license conditions; Confidentiality agreements; Data-protection requirements; Employer intellectual property
- Client intellectual property; TeckyGuys instructional materials; Third-party platform terms

Students must never access, copy, modify, test, deploy, publish or interfere with source code, applications, websites, APIs, databases, accounts, servers or information without proper authorization.

- All programming and development activities must be conducted; Within assigned access; On approved systems and projects; Using approved data; Under applicable supervision
- According to organizational procedures; In accordance with applicable laws; In accordance with professional and ethical standards.

Contact TeckyGuys Academy

- Website: www.teckyguy.com
- Email: info@teckyguy.com
- Telephone: (737) 397-1127

FINAL MESSAGE Explore your pathway. Develop practical skills. Prepare for opportunity.