TR-05: QA Automation & Software Testing

Break Things Deliberately - Then Automate the Proof

Every production system needs someone who thinks about what can go wrong before users discover it. This course builds modern QA automation engineers from the ground up - starting with quality engineering mindset and building through TypeScript, Playwright, API testing, and CI/CD-integrated quality gates. In 10 weeks, you'll master the automation-first QA approach that companies worldwide now expect.

The focus is on thoughtful automation, not automating everything blindly.

Why This Course?

The Market Reality

Global Context: Automation-first testing has become a core engineering practice in teams that release frequently. Companies increasingly need QA engineers who can design meaningful checks, automate critical flows, and improve confidence inside CI/CD pipelines.

Nepal Context: Nepal's software industry ships products to global clients through outsourcing, but quality assurance remains one of the weakest links. Many Nepali software companies still rely on manual testing or have minimal automated test coverage.

Your Opportunity: This course positions you for **QA engineer, SDET, and test automation engineer roles** - the quality backbone every software team needs.

Nepal-Relevant Reality	Opportunity
Most Nepali companies lack automated testing	QA automation skills instantly valuable
Software outsourcing requires quality guarantees	QA roles critical for client trust
CI/CD adoption is increasing	Pipeline quality engineers in demand
International QA remote roles pay premium	Global access from Kathmandu

Course Snapshot

Parameter	Details
Course Code	TR-05
Title	QA Automation & Software Testing
Duration	2.5 Months (10 Weeks)
Schedule	Monday to Friday (Mon–Fri, 5 Days/Week), 2 Hours/Day
Total Hours	100 Hours of Live Training
Batch Size	Maximum 10 Students
Course Fee	NPR 30,000
Prerequisites	Basic programming familiarity and willingness to work with web apps and APIs. Laptop with 8GB+ RAM. Saarathi Gate Assessment (diagnostic, no pass/fail) before Day 1.
Self-Study	Minimum 2 hours/day outside class (mandatory)
Outcome	QA Automation Engineer / SDET

Your Learning Week

Day	Activity
Mon–Fri	2-hour live class session (hands-on, project-based)
Mon–Fri	Minimum 2 hours self-study & practice (mandatory)
Saturday	No classes - flexible self-study, peer collaboration, project work
Sunday	Whole day self-learn time. Classrooms remain fully open for you to come in, study, collaborate with peers, and build projects. (Highly recommended for networking!)

> *Every student MUST spend at least 2 dedicated hours a day on focused practice beyond the classroom at home. This is non-negotiable for success, it is what separates graduates who get hired from those who don't.*

Week-by-Week Curriculum

Phase 1: Testing Mindset, TypeScript & Patterns (Weeks 1–3, 3 Weeks, 30 Hours)

Week	Focus Area	What You'll Master
Week 1	Quality Engineering Mindset	Risk thinking, SDLC, bug reports, Git habits
Week 2	TypeScript for Testers	Types, async flows, helpers, reusable test utilities
Week 3	Test Design Patterns	POM, fixtures, builders, mocks, coverage planning

Phase 2: Playwright UI Automation (Weeks 4–6, 3 Weeks, 30 Hours)

Week	Focus Area	What You'll Master
Week 4	Playwright Core	Locators, assertions, traces, stable automation habits
Week 5	Framework Architecture	Reporting, folder structure, data-driven flows, environments
Week 6	Advanced Automation	Cross-browser execution, retries, visual checks, flake control

Phase 3: API & Integration Testing (Weeks 7–8, 2 Weeks, 20 Hours)

Week	Focus Area	What You'll Master
Week 7	API Validation	Request and response checks, auth flows, negative tests
Week 8	Integration Confidence	Test data, environment setup, hybrid UI plus API validation

Phase 4: CI/CD Quality Gates & Career Prep (Weeks 9–10, 2 Weeks, 20 Hours)

Week	Focus Area	What You'll Master
Week 9	Quality in Pipelines	CI integration, report artifacts, performance-awareness basics
Week 10	Capstone & Career Launch	Final framework packaging, portfolio review, interviews

Skills You'll Gain

Testing Technologies

Technology	Proficiency Level
Playwright	Professional Automation
TypeScript	Testing Language
API Testing	Request/Response Validation
CI/CD Integration	Quality Gates
Visual Testing	Cross-Browser Verification
Test Reporting	Professional Documentation

QA Methodologies

Methodology	Application
Page Object Model	Maintainable test architecture
Data-Driven Testing	Scalable test execution
Risk-Based Testing	Priority-driven coverage
Shift-Left Testing	Early defect detection

Topic Depth and Awareness

Section	Guidance
Purpose	This course intentionally separates what you need to master in depth from what you only need to understand with working awareness.
Depth	The test-design, automation, API validation, and quality-gate workflows practiced repeatedly in class The execution areas you are expected to perform independently in modern QA automation work The risk and debugging habits most likely to matter in real delivery teams

Section	Guidance
Awareness	Adjacent tools, optional stretch topics, and industry context introduced for broader understanding Concepts you should be able to explain, compare, and recognize even if you are not yet executing them independently Advanced directions for later specialization, higher-level tracks, or guided self-study
How to use this syllabus	Spend most of your self-study time strengthening the depth topics first. Treat awareness topics as context builders that help you make better decisions and understand the larger professional landscape.

Project Pool

> *All options below are **intermediate-level final projects**. Each student chooses **one** final project from this pool. Trainers may run smaller guided exercises during the course, but public phase-wise project sections are intentionally removed so the completion standard stays clear and consistent.*

#	Final Project Choice	What You Will Build	Core Stack / Tools
1	QA Strategy Pack	Build a risk-based test plan, coverage map, and starter framework for a realistic product surface.	Test strategy, TypeScript, POM basics, risk-based testing
2	Playwright UI Suite	Build a maintainable Playwright UI suite with fixtures, reusable helpers, and reporting.	Playwright, TypeScript, fixtures, cross-browser testing
3	API & Data Validation Suite	Automate API checks, schema validation, and critical integration assertions across a real workflow.	Playwright API, Zod, database validation, negative testing
4	Release Confidence Dashboard	Build a release-readiness pack that combines test evidence, bug risk, coverage, and CI status.	CI/CD, reporting, release checklist, quality metrics
5	Performance Regression Suite	Create a repeatable performance test pack with thresholds, reports, and regression visibility.	k6, performance monitoring, thresholds, trend reporting

Career Paths & Trajectory

Role Path	Focus and Proof	Stage and Timeline	What Actually Matters
Junior QA Automation Engineer	Write UI and API checks for critical flows, maintain smoke coverage, and file developer-friendly defects. Proof you leave with: Playwright suite proof, bug-report quality, and CI run evidence	Entry role - first 0–12 months	Stable selectors, clear reproduction steps, reliable execution, and learning the product fast.
QA Automation Engineer / SDET I	Own feature-level automation, test data setup, and release checks across browser and API layers. Proof you leave with: Framework structure, API validation, and stronger test design	Growth role - 1–3 years	Reduce flakiness, choose coverage based on risk, and make failures actionable for the team.
Senior QA Automation Engineer / SDET II	Improve framework design, raise suite reliability, and guide quality practices across a product area. Proof you leave with: CI quality gates, reporting habits, and architecture judgment	Senior individual contributor - 3–5 years	Better framework decisions, disciplined debugging, and mentoring junior testers without creating noise.
Quality Engineer / Test Lead	Guide release confidence, automation direction, and quality communication across a squad or product line. Proof you leave with: Strategy documents, release reporting, and cross-team collaboration habits	Leadership path - 5+ years	Prevent bugs earlier, set realistic quality gates, and help teams make calmer release decisions.

Saarathi Gate & Completion Review

Before You Start: Saarathi Gate Assessment

All students complete the **Saarathi Gate Assessment** before Day 1. It is a short diagnostic review of aptitude, learning behaviour, and thinking style. It has **no pass/fail** and is used only to tailor support from the start.

After Course Completion: Saarathi Completion Review

The **Saarathi Academy Certificate** is issued after the selected final project is completed, documented, and reviewed by the trainer. There is **no separate certification exam** for this course.

Completion Requirements:

1. **Attendance:** Minimum 80% attendance
2. **Weekly Work:** Core deliverables, revision work, and practice tasks completed
3. **Final Project:** One intermediate-level project selected from the project pool and completed to trainer-approved quality
4. **Portfolio Proof:** Screenshots, documentation, case-study notes, or equivalent proof assets updated
5. **Trainer Review:** Practical execution, consistency, communication, and overall growth signed off by the trainer

Enrollment & Next Steps

Next Batch: Starting soon (contact for exact dates) **Offline Location:** Old Baneshwor Chowk, Kathmandu, Nepal **Mode:** Online + Offline **Contact (Call/WhatsApp):** 9761095364, 9744442469

» **[ENROLL NOW]** - Limited to 10 seats per batch

Quality is not optional. In 10 weeks, you'll have the automation skills and the framework portfolio to prove it.

Last Updated: Mar 30, 2026