Inside the Platform: Every Lab, Assessment & Skill IQ Your Program Needs

A complete product walkthrough -- see exactly what modules, assessments, and certification tracks are available for your IT, cybersecurity, and CS curriculum.

⊞ What's Inside CertLabs PBQ

CertLabs is not just a lab platform -- it's a complete curriculum delivery system. Here's a breakdown of every component available to your institution, organized by category, with exact module names matching our lab pages.

🧪 **Hands-On Labs**	🧠 **Skill IQ Assessments**	📄 **Practice Exams & PBQs**
500+ browser-based labs on real VMs -- terminal & GUI. Auto-graded with instant feedback. No software installation needed.	Hundreds of diagnostic assessments that quantify student competencies. Use for placement, mid-term progress, and graduation readiness.	5,000+ performance-based questions mapped to 50+ certification exams. Timed simulations, domain-specific drills, adaptive difficulty.

🧠 Skill IQ Assessments -- Hundreds Available

Each Skill IQ is an adaptive diagnostic that measures student proficiency on a 0-300 scale. Scores map to Beginner, Intermediate, Advanced, and Expert tiers. Faculty can assign Skill IQs at course start, midpoint, and end to track improvement quantitatively.

Cyber Skill IQ Threat detection, IR, compliance, SOC workflows	**Cloud Skill IQ** AWS, Azure, GCP architecture & security	**Operating Sys Skill IQ** Linux admin, Windows Server, shell scripting
LLM Skill IQ Generative AI, prompt engineering, responsible AI	**Programming Skill IQ** Python, Java, C#, JavaScript, TS, C++	**Data Skill IQ** SQL, analytics, BI, data governance
Networking Skill IQ TCP/IP, routing, VLANs, wireless, VPN	**DevOps Skill IQ** CI/CD, containers, IaC, Kubernetes	**SysAdmin Skill IQ** AD, GPO, backup, virtualization

📊 How Skill IQ Works in Practice

STEP 1 Pre-Course Baseline Assign Skill IQ on Day 1 to gauge entering competency	**STEP 2** Lab Practice Students complete auto-graded labs throughout the term	**STEP 3** Mid-Term Check Re-assess Skill IQ to identify at-risk students early	**STEP 4** Post-Course Proof Final Skill IQ score documents growth for accreditation

⚙ Custom Lab Building
Need a lab we don't have? Our curriculum team builds custom labs to your exact syllabus -- including custom VMs, grading rubrics, and LMS integration. Available with Custom Integration pricing tier.

🛡 Cybersecurity & SOC Lab Set -- Exact Modules

10 progressive modules from Security+ foundations through CISSP/CISM-level governance. Every module name below matches exactly what students see on the platform.

✓ Module 1: Security+ Foundation Labs	✓ Module 2: Advanced Security Labs
✓ Module 3: Threat Hunting & Analysis Labs	✓ Module 4: Security Operations & Incident Response Labs
✓ Module 5: PenTest+ and CySA+ Labs	✓ Module 6: Advanced Security+ / CISSP / CISM Labs
✓ Module 7: ISC2 CGRC / ISACA CISM / ISC2 ISSAP Labs	✓ Module 8: IS Auditing Security Engineering & Architecture Labs
✓ Module 9: Governance & Management Labs	✓ Module 10: CSSLP & ISACA Certification Labs

Cert Alignment: CompTIA Security+, CySA+, PenTest+, SecurityX ∗ ISC2 CISSP, SSCP, CCSP, CGRC, ISSAP, ISSEP, CSSLP ∗ ISACA CISA, CISM, CRISC ∗ EC-Council CEH, CHFI ∗ Cisco CyberOps ∗ GIAC GSEC, GCIH

☁ Cloud Computing Lab Set -- Exact Modules

10 modules covering multi-cloud architecture, DevSecOps, compliance, and disaster recovery across AWS, Azure, and GCP.

✓ Module 1: Cloud Architecture Foundation Labs	✓ Module 2: Advanced Cloud Services Labs
✓ Module 3: DevSecOps & Container Security Labs	✓ Module 4: Compliance & Disaster Recovery Labs
✓ Module 5: Cloud Monitoring & Automation Labs	✓ Module 6: Multi-Cloud Integration Labs
✓ Module 7: Advanced Multi-Cloud Architecture Labs	✓ Module 8: Advanced Cloud Architecture Labs
✓ Module 9: Multi-Cloud Disaster Recovery Mastery	✓ Module 10: Cloud Certification Mastery Labs

Cert Alignment: AWS Cloud Practitioner, Solutions Architect, SysOps Admin, Developer Associate, DevOps Professional ∗ Microsoft AZ-900, AZ-104, AZ-500, SC-900 ∗ Google Cloud Digital Leader, Associate Cloud Engineer ∗ CompTIA Cloud+, CloudNetX

🗄 Data & Analytics Lab Set -- Exact Modules

10 modules from SQL fundamentals through enterprise database systems and data governance.

✓ Module 1: Data Foundation Essentials	✓ Module 2: Visualization & NoSQL
✓ Module 3: Data Architecture & APIs	✓ Module 4: ML Pipelines & Cloud
✓ Module 5: Security & Real-time Analytics	✓ Module 6: Data Mesh & Governance
✓ Module 7: Stream Processing & MLOps	✓ Module 8: Database Administration
✓ Module 9: Distributed & Graph Databases	✓ Module 10: Enterprise Database Systems

Cert Alignment: CompTIA Data+, DataX, DataSys+ ∗ Microsoft DP-900 ∗ AWS Data Analytics

🤖 AI & Machine Learning Lab Set -- Exact Modules

GenAI Foundation through Expert-level modules covering prompt engineering, NLP, deep learning, and responsible AI.

✓ Modules 1: GenAI Foundation Labs

✓ Modules 2, 3, 5: GenAI Advanced Labs

✓ Module 4: GenAI Production Labs

✓ Modules 6-10: GenAI Expert Labs

⌨ Programming Lab Sets -- 6 Languages, 60 Modules

Each language has 10 progressive modules. Below are the exact module names from each lab set page.

🐍 Python Lab Set — 10 MODULES

✓ 1. Fundamentals

✓ 2. Collections & Functions

✓ 3. Data Structures & Error Handling

✓ 4. OOP & Advanced Python

✓ 5. Advanced Patterns

✓ 6. Professional Patterns

✓ 7. Modern Best Practices

✓ 8. Standard Library Mastery

✓ 9. Data & File Handling

✓ 10. Professional Development

☕ Java Lab Set — 10 MODULES

✓ 1. Fundamentals

✓ 2. Intermediate Concepts

✓ 3. OOP & Collections

✓ 4. Interfaces File I/O & String Processing

✓ 5. Collections Streams & Multithreading

✓ 6. Generics Enums & RegEx

✓ 7. Optional Date/Time & JDBC

✓ 8. Annotations Reflection & Inner Classes

✓ 9. Unit Testing Serialization & Design Patterns

✓ 10. Networking Modules & Modern Features

</> C# / .NET Lab Set — 10 MODULES

✓ 1. Fundamentals

✓ 2. Arrays & Methods

✓ 3. OOP & Error Handling

✓ 4. Advanced OOP & Async

✓ 5. Dictionaries & File I/O

✓ 6. Generics LINQ Advanced & JSON

✓ 7. Records Pattern Matching & Nullables

✓ 8. Reflection Attributes & Testing

✓ 9. DI HTTP Clients & Expressions

✓ 10. Memory Generators & Channels

JS JavaScript Lab Set   10 MODULES

✓ 1. Fundamentals	✓ 2. Arrays Functions & Objects
✓ 3. Array Methods & String Manipulation	✓ 4. DOM Manipulation Events & Classes
✓ 5. Asynchronous JavaScript	✓ 6. Error Handling Modules & Storage
✓ 7. RegEx Dates & JSON	✓ 8. Closures Higher-Order Functions & Recursion
✓ 9. Spread/Rest Advanced Destructuring & Collections	✓ 10. Generators Async Iterators & Proxy

</> TypeScript Lab Set   10 MODULES

✓ 1. Beginner Level	✓ 2. Advanced Types
✓ 3. OOP & Utility Types	✓ 4. Advanced Concepts
✓ 5. Expert Level	✓ 6. Mastery Level
✓ 7. Expert Level	✓ 8. Master Level
✓ 9. Professional Level	✓ 10. Architect Level

</> C++ Lab Set   10 MODULES

✓ 1. Fundamentals	✓ 2. Control Flow & Functions
✓ 3. Arrays Strings & Loops	✓ 4. Pointers References & Structs
✓ 5. Classes File I/O & Vectors	✓ 6. Exception Handling Templates & Smart Pointers
✓ 7. Lambdas STL Algorithms & Inheritance	✓ 8. Move Semantics Threads & RAII
✓ 9. Metaprogramming & Compile-Time	✓ 10. C++20 Modern Features

📋 Assessment Types on the Platform

>_ VM-Based Labs
Students work in real Linux/Windows VMs via browser. Auto-graded against objective checks (file exists, service running, config correct).

</> Code Challenge Labs
Write & run code in browser IDE. Graded by unit test pass/fail. Supports Python, Java, C#, JS, TS, C++.

≔ PBQ Practice Exams
Timed simulations matching real cert exam format. Drag-and-drop, fill-in, simulation items. Domain-level score breakdown.

🧠 Skill IQ Diagnostics
Adaptive assessments that produce a 0-300 score. Results map to Beginner/Intermediate/Advanced/Expert tiers per domain.

📈 Real Institutional Outcomes -- Powered by ACI Learning

CertLabs PBQ is built on the proven ACI Learning methodology -- the same approach that has trained over 1 million IT professionals across government, enterprise, and education. Our content is continuously updated by certified instructors to match the latest exam objectives and real-world enterprise environments.

94%	**3x**	**10+**	**$0**
Cert Pass Rate	Faster Mastery	Hours Saved/Wk	Infra Cost
vs 68% industry avg	hands-on vs lecture	per instructor	100% cloud-hosted

🛡 **Enterprise Security & Compliance**
SOC 2 Type II compliant. FERPA compliant. All data encrypted at rest and in transit. 99.9% uptime SLA. US-based data centers. No student data shared with third parties.

🎓 Degree Programs Supported -- BSc Through PhD

CertLabs labs, assessments, and Skill IQs are designed to serve every degree level. Below are the specific programs our content aligns to, from undergraduate through doctoral research.

💻 BSc Programs

* BSc -- Computer Science
* BSc -- Information Technology
* BSc -- Cybersecurity & Info Assurance
* BSc -- Cloud Computing & Infrastructure
* BSc -- Data Science & Analytics
* BSc -- Software Engineering

🎗 MSc Programs

* MSc -- Cybersecurity & Info Assurance
* MSc -- Computer Science / Software Eng
* MSc -- Data Science & Machine Learning
* MSc -- IT Management & Governance

🔖 PhD Programs

* PhD -- Computer Science / AI Research
* PhD -- Cybersecurity / Digital Forensics

PhD-level labs focus on advanced threat research, ML model development, and security architecture.

✱ Complete Certification Track Listing -- 50+ Exams

CompTIA (16 Exams)
A+ Core 1 & 2, Network+, Security+, CySA+, PenTest+, SecurityX, Cloud+, CloudNetX, Linux+, Server+, Data+, DataX, DataSys+, Project+, Tech+

ISC2 (8 Exams)
CISSP, CCSP, SSCP, CSSLP, CGRC, ISSAP, ISSEP, ISSMP

ISACA (5 Exams)
CISA, CISM, CRISC, CGEIT, CDPSE

AWS (4 Exams)
Cloud Practitioner, Solutions Architect, SysOps Admin, Developer Associate

Microsoft (5 Exams)
AZ-900, AZ-104, AZ-500, SC-900, MS-900

Google Cloud (2 Exams)
Cloud Digital Leader, Associate Cloud Engineer

Cisco (2 Exams)
CCNA, CyberOps Associate

EC-Council (2 Exams)
CEH, CHFI

Additional Certs
GIAC GSEC, GIAC GCIH, Linux Foundation CKA, CKAD, Terraform Associate, Docker DCA, AWS DevOps Pro

AI Certifications
CompTIA AI Essentials, Google Professional ML Engineer, AWS AI Practitioner, Microsoft AI-900

🏅 Accreditation & Framework Alignment

🛡 NIST/NICE Framework
Labs map to NICE workforce framework competency areas. Evidence for ABET, HLC, and regional accreditation reviews.

NSA CAE-Cyber Aligned
Content supports NSA/DHS Centers of Academic Excellence in Cybersecurity knowledge units and requirements.

📄 Outcome Documentation
Export competency reports per student, course, and program. Skill IQ scores provide quantitative accreditation evidence.

✱ Exam Objective Mapping
Every lab is tagged to specific exam objectives. Students practice exactly what they face on exam day -- zero wasted effort.

⚗ 9 Lab Disciplines at a Glance

Cybersecurity & SOC
10 modules * 30+ labs

Cloud Computing
10 modules * AWS/Azure/GCP

Linux Administration
CentOS, Ubuntu, shell

DevOps & Automation
Docker, K8s, CI/CD, IaC

Networking
Routing, switching, VPN, wireless

System Administration
Windows Server, AD, GPO

Programming
6 languages * 60 modules

Data & Analytics
SQL, ETL, BI, statistics

AI & Machine Learning
Gen AI, NLP, deep learning

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⚡ LMS Integration -- Seamless Classroom Delivery

CertLabs connects to your existing LMS via LTI 1.3. Students launch labs from their course page, complete them in-browser, and grades sync back automatically -- zero manual entry.

Canvas LTI 1.3, deep linking, grade passback	**Blackboard** SSO, grade sync, assignment mapping	**Moodle** LTI integration, auto enrollment	**D2L Brightspace** Grade passback, SSO, deep links

🎛 Instructor Dashboard -- What Faculty See

📊 Class Analytics

Completion rates, average scores, time-on-task, and Skill IQ score distributions -- all in real time. Filter by section, lab set, or date range.

👥 Student Progress

Drill into individual student performance -- see every lab attempt, time spent, mistakes made, and Skill IQ trajectory over the semester.

≔ Assignment Builder

Create custom assignments by combining labs, Skill IQs, and practice exams. Set due dates, point values, and attempt limits. Assign to sections or individuals.

📑 Reports & Exports

Export CSV/PDF reports per student, per course, or per program. Competency data formatted for ABET, HLC, and regional accreditation evidence.

🎓 Student Experience -- What Students See

Browser-Based No downloads, no plugins. Works on Chrome, Firefox, Safari, Edge. Chromebook compatible.	**Save & Resume** Lab state persists. Students can pause and resume any lab at any time from any device.	**Progress Dashboard** Personal dashboard shows completed labs, scores, Skill IQ history, and cert readiness.

⚙ Custom Lab Building

Need a lab we don't have? Our curriculum team builds custom labs to your exact syllabus -- including custom VMs, grading rubrics, and LMS integration. Available with Custom Integration pricing tier.

⇄ CertLabs vs. Typical Lab Vendors

Capability	CertLabs PBQ	Others
Lab Disciplines	9 categories, 500+ labs	1-3 categories
Skill IQ Diagnostics	✓ Hundreds of assessments	✗ Not available
Real VM Labs	✓ Terminal + GUI	✗ Simulations
Programming Languages	✓ 6 languages, 60 modules	✗ Not included
AI/ML Labs	✓ GenAI, NLP, ML	✗ Not available
Cert Tracks	✓ 50+ (CompTIA, ISC2, AWS, etc.)	~ 10-15
Auto-Grading + LMS Sync	✓ Instant + grade passback	~ Partial
Pricing	$2-8 per student per year	$15-50 per student per year

🏷 Academic Pricing -- All-Inclusive

Small School
$5 per student per year
Up to 2,500 students
✓ All 500+ labs & PBQs
✓ Hundreds of Skill IQ assessments
✓ LMS integration
✓ Email support

Large University
$2 per student per year
2,500+ students
✓ Everything in Small School
✓ Dedicated account manager
✓ Faculty training
✓ Quarterly business reviews

Custom Integration
$8 per student per year
Custom labs + curriculum
✓ Everything in Large University
✓ Custom-built labs
✓ White-label & API access
✓ Implementation consulting

66 Faculty & Administrator Feedback

"The Skill IQ assessments changed how we advise students. We can now place incoming students in the right courses based on quantified competencies."
-- Dr. Robert Chen, Director of IT Programs

"We went from three separate lab vendors to just CertLabs. One login for cyber, cloud, and programming -- and the auto-grading saved me 12 hours a week."
-- Prof. Sarah Kim, CS Department Chair

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Cert Pass Rate

3x
Faster Learning

10+
Hrs Saved/Wk

$0
Infra Cost