ISLAND BREEZE TECHNICIAN CERTIFICATION PROGRAM

Certification Capstone

MODULE M42 | MASTER TECH | PREREQ M37, M38, M39, M40, M41

Forty-one modules ago you did not know what a BTU was. You could not have told a contactor from a capacitor, and the phrase "118.4 psig is 40 degrees" would have sounded like a radio code. Now you can walk up to a system you have never seen, take seven readings, and name the fault before the gauges are off the ports. You can pull a 500-micron vacuum and prove it with a decay test. You can recover a flammable refrigerant safely, commission a new install against a printed rubric, and explain all of it to a homeowner in plain language without a single piece of jargon. One gate remains. The capstone is a 100-question written exam covering the entire course and a staged-fault practical on a live training unit, where the evaluator has planted three faults and your job is to find all three, prove them with measurements, and present the whole thing the way a master technician would on a real call. Pass both and you hold the certificate. This module tells you exactly what is coming, how it is scored, and how to prepare for it, because a certification exam should never contain a surprise about its own rules.

Short Version

The capstone has two parts and you must pass both. Part one is a comprehensive written exam: 100 questions drawn from all 41 content modules, weighted by track (20 Foundations, 28 Core, 25 Diagnostics, 15 Advanced, 12 Master), in three formats (60 multiple choice, 20 true/false, 20 scenario questions with full readings sets). It is closed book, proctored, three hours, with a PT chart and a calculator allowed, and the pass line is 80 percent, same as every quiz in the course. One retake is allowed; a second failure means mandatory re-study and a 48 hour wait before the next attempt. Part two is the staged-fault practical: the evaluator plants three faults on a training unit, one electrical, one refrigerant circuit, one airflow, and you must diagnose all three with correct measurement order, propose a sound repair plan, document the call including the 8-photo close-out, and explain your findings in a customer roleplay. Safety items are mandatory-pass: one safety violation stops the practical regardless of everything else. Pass both parts and the certificate is signed and issued on the spot. The certificate is a competency credential: it says you can do the work to the program standard. It is not a pay event, a title, or a license, and it is not the end of learning. It is the floor you never drop below again.

Key Values

ITEM	VALUE	NOTES
Written exam length	100 questions	Covers all 41 content modules, F1 through M41
Written exam pass line	80 percent (80 of 100)	Same pass standard as every module quiz
Question formats	60 MC, 20 TF, 20 scenario	Scenario questions include full readings sets

ITEM	VALUE	NOTES
Foundations weight	20 questions	F1 to F9
Core weight	28 questions	C10 to C21, the heaviest track
Diagnostics weight	25 questions	D22 to D30
Advanced weight	15 questions	A31 to A36
Master weight	12 questions	M37 to M41
Time limit	3 hours	About 1.8 minutes per question; most finish with time to spare
Allowed materials	PT chart and calculator	Same materials policy as the EPA 608 exam from C13
Retake rule	One retake allowed	Second failure: mandatory re-study plus 48 hour wait
Practical faults planted	Exactly 3	One electrical, one refrigerant circuit, one airflow
Practical time window	3 to 4 hours	Includes intake roleplay, diagnosis, documentation, and customer explanation
Practical safety items	Mandatory pass	A single safety violation ends the attempt
Documentation standard	8-photo close-out	The same standard taught in D30 and M39
Practical retrain rule	Coached re-attempt with a new fault draw	Scheduled no sooner than one week after a retrain decision
Certificate issued	On passing both parts	Signed by the evaluator the same day

Field Checklist

Capstone week preparation, in order:

- [ ] Confirm all 41 module quizzes show passed and every required practical is signed off. The capstone cannot be scheduled with an open module.
- [ ] Re-read the Short Version of all 41 articles. They were written to be re-readable in 20 seconds each; the full pass takes under 15 minutes and rebuilds the course skeleton in your head.
- [ ] Re-take the testout for any module you passed on a retake the first time around. Those are your statistically weakest areas.
- [ ] Drill the shared numbers until they are reflexes: the R-410A PT anchors, superheat and subcooling targets, 400 CFM per ton, gas manifold pressures, the capacitor minus 6 percent rule, 500 microns with decay, the leak rate thresholds, the A2L values.
- [ ] Re-read D24 in full. The misdiagnosis triangle is the single most tested idea on both halves of the capstone.

- [ ] Sleep, eat, and hydrate like it is a summer install day. A three hour exam is physical.
- [ ] Bring: your PT chart, a calculator, your full tool bag and meter kit for the practical, and your PPE. The practical is judged with your tools, not loaners.
- [ ] On exam day: answer every question, flag the ones you doubt, and return to them. An unanswered question is a guaranteed zero; a flagged guess is a coin you might win.

IB STANDARD

Island Breeze schedules the capstone only after every module shows complete in the training record, and both halves are administered by the lead evaluator with results logged in ServiceTitan against the technician's training profile the same day. The signed certificate, the written exam score sheet, and the practical rubric all go into the technician's personnel file, and the certificate itself is presented in person, not mailed.

Full Breakdown

What this certification means

A certification is a claim with evidence behind it. When this program puts its name on a certificate, the claim is specific: this technician can safely and competently diagnose, service, and commission residential and light commercial comfort systems to the standard taught in these 42 modules, and has proven it under observation. Every word of that sentence is load bearing. "Safely" is proven by the mandatory-pass safety items on every practical you have done since F1. "Diagnose" is proven by the staged-fault capstone, where nobody tells you what is broken. "To the standard" means the specific, numbered standard: 500 microns with a decay test, superheat and subcooling both recorded, measurement before parts, root cause before part swap, the 8-photo close-out.

That specificity is what separates a real credential from a certificate-of-attendance. Plenty of paper in this trade certifies that a person sat in a room. This program certifies that a person found three planted faults on a live machine with an evaluator watching, and scored 80 percent across one hundred questions spanning everything from Ohm's law to A2L cylinder threads. The difference matters to you for the rest of your career, because the habits the capstone forces you to demonstrate are the habits that make a technician trustworthy without supervision.

It is worth saying plainly what the exam is not. It is not a memory stunt. Roughly half the written questions put you inside a scenario with a full set of readings and ask you to think, not recall. It is also not a trick. Every question traces to a module you have already passed, every number traces to a value the course taught, and the distractor answers are wrong in ways the course explicitly warned about. If a question feels familiar, that is because it is: the capstone is the course, compressed.

The written exam blueprint

The 100 questions are distributed by track, weighted roughly by each track's share of the course and its importance to daily work:

TRACK	MODULES	QUESTIONS	WHAT GETS EMPHASIZED
Foundations	F1 to F9	20	Safety judgment, PT fluency, superheat and subcooling math, electrical fundamentals, reading a schematic
Core	C10 to C21	28	EPA 608 rules, recovery and evacuation craft, charging methods and math, combustion values, system anatomy
Diagnostics	D22 to D30	25	The misdiagnosis triangle, the seven readings, root cause discipline, compressor clearance, leak protocol, communication
Advanced	A31 to A36	15	A2L safety values and sequence, communicating systems, inverter safety, brand facts, mini-splits, zoning statics
Master	M37 to M41	12	Load calculation judgment, duct performance, commissioning discipline, compound faults, extreme-ambient interpretation

Every one of the 41 content modules appears in at least one question. No module is safe to skip in review, but the weighting tells you where to spend your hours: Core and Diagnostics together are 53 of the 100 questions, and the single densest cluster of points sits at the junction of F6, C17, and D24, the superheat-subcooling language and the charge misdiagnosis triangle built on top of it.

The three question formats test three different muscles. The 60 multiple choice questions test working knowledge: values, rules, sequences, and the reasoning behind them. The 20 true/false questions test precision; they are built from the exact misconceptions the Common Mistakes sections warned about, and they punish a tech who knows the topic vaguely. The 20 scenario questions are miniature service calls: a situation, a full readings set, and four plausible actions, only one of which is what a master tech would do. The readings in every scenario are internally consistent with the PT chart and the targets you have used all course, which means you can verify your answer with thirty seconds of math instead of trusting your gut.

How the written exam is administered and scored

The exam is proctored and closed book, in one sitting, with a three hour limit. You may bring a pressure-temperature chart and a calculator, the same materials policy you already worked under for the EPA 608 exam in C13, and nothing else: no phone, no notes, no probe apps. Three hours for one hundred questions is about 1.8 minutes each, which is generous; the exam is paced so that a prepared tech finishes with 30 to 45 minutes to review flagged questions.

The pass line is 80 percent, 80 of 100, the same standard as every quiz in this course. There is no partial credit and no weighting by difficulty; a scenario question and a true/false question are each worth one point. The score is calculated immediately and you learn the result the same day.

The retake rule is the same one that has governed every module quiz since F1: one retake is allowed. The retake uses a different draw of questions covering the same blueprint, so memorizing the first form does not help and was never the point. A second failure triggers mandatory re-study with a minimum 48 hour wait before the next attempt, and the re-study is targeted: the score report breaks your result down by track, so you and the evaluator can see exactly which track failed you and rebuild from there. There is no testout for this module and no exemption path. The capstone is the one assessment in the program that everyone takes in full.

The staged-fault practical

The practical is the half of the capstone that cannot be studied for in the ordinary sense, because its entire design is that you do not know what is wrong. The evaluator prepares a training unit before you arrive by planting exactly three faults, drawn from a standing menu: one electrical fault, one refrigerant circuit fault, one airflow fault. The menu spans the failures this course taught you to find, the same categories as the four failure patterns from D22: a degraded capacitor, an open control circuit, a contactor problem on the electrical side; an undercharge, an overcharge, or a staged restriction on the refrigerant side; a blocked return, restricted supply, or a blower problem on the air side. You will not be told which three, and you will not be told when you have found them all.

The practical runs like a real call, because it is graded like one:

1. **Intake roleplay.** The evaluator plays the customer and gives you a complaint, the way D30 taught you to receive one. Your symptom intake questions are scored.
2. **Safety and visual.** PPE on, disconnect discipline, capacitor discharge verification, a system-first visual survey before any meter touches anything. Every safety item is mandatory-pass: one violation, the attempt ends, regardless of how brilliant the diagnosis was going to be.
3. **Measurement in correct order.** Airflow eyeballed before refrigerant numbers are trusted. Electrical verified safely. The seven readings taken, recorded, and stable, per D24. The evaluator scores the order, not just the answers, because measurement order is what separates diagnosis from guessing.
4. **Diagnosis of all three faults.** You name each fault and point at the measurements that prove it. All three must be correctly identified. Two out of three is a retrain, because on a real roof the third fault is the callback.
5. **Repair plan.** For each fault, what you would do, in what order, and what you would verify afterward. The plan is scored on completeness and on root cause logic: a capacitor swap without a stated cause investigation is the exact mistake D23 exists to kill.
6. **Documentation.** The full readings set recorded, and the 8-photo close-out shot as if this were a closing call. Missing or unusable photos are scored down the same way they would cost you on a quality control review.
7. **Customer explanation roleplay.** You explain what you found, what it means, and what you recommend, to the evaluator-as-customer, in plain language, using the say-it-three-ways discipline from D30. Jargon without translation is scored down. Pressure tactics of any kind are an automatic fail of this section.

A passing practical requires: zero safety violations, all three faults correctly diagnosed, and a passing score across the rubric sections. Failing the practical produces a retrain decision, not a dead end: the evaluator writes down exactly which sections failed, you train against those sections, and the re-attempt happens no sooner than one week later with a fresh draw of three faults from the menu. The fault menu is large enough that no two attempts are the same test.

PHOENIX FIELD NOTE

The practical is staged honestly for this market, which means the training unit may be running in real summer heat and the readings will reflect it. Expect the exam scenarios and the live unit to behave like the systems you actually work on: design-day numbers anchored at a 112 F outdoor design temperature, head pressures judged as condensing-over-ambient instead of raw psig, and probes that the sun will lie to if you let it. The capstone does not soften the conditions, because the certificate is a claim about real work in this climate.

Preparation strategy, track by track

Foundations (20 questions): rebuild the reflexes. The F-track questions are not hard, but they are unforgiving, because by now this material is supposed to be automatic. Drill the PT anchors until conversion is instant. Re-derive the superheat and subcooling subtractions from scratch once, so the directions never flip on you under time pressure. Re-read F1's Common Mistakes; safety questions on the written exam are free points for a tech who respects them and traps for one who skims.

Core (28 questions): the numbers live here. This is the heaviest track and the most memorization-dense. The EPA 608 material from C13 and C14 returns on the capstone: current leak thresholds, the three Rs, cylinder rules, recovery levels. The craft numbers return too: 500 microns and the three decay signatures, nitrogen flow rates for brazing, charging math including the line set adjustment, manifold pressures. Build a one-page sheet of every Key Values table in the C-track and quiz yourself until the sheet is unnecessary.

Diagnostics (25 questions): think in readings. Most scenario questions live here. Do not memorize answers; memorize the method, because the readings will be new but the method never changes. Superheat high or low. Subcooling low or stacked. Head against ambient. Split against the window. Amps against the plate. Re-work the three worked examples in D24 with the article closed until you can reproduce the logic, not the numbers.

Advanced (15 questions): precision on the new material. The A2L values from A31 are tested exactly as taught and they are recent enough that no old habit will save you: the LFL, the sensor threshold, the trip logic, the deadline matrix, the never-retrofit rule. The communicating and inverter modules contribute safety-critical single facts, the kind a true/false question loves.

Master (12 questions): judgment, not arithmetic. The M-track questions test whether you think like a designer and a commissioner: why oversizing fails, what effective length means, what gets verified at startup and in what order, what a compound fault does to a confident first diagnosis, and how to read a system honestly at brutal ambient. If you passed M37 through M41 recently, this material is fresh; re-read the five Short Versions and the M40 case logic.

The single best preparation exercise for the practical costs nothing: on your next three real maintenance calls, run the full capstone discipline as if the evaluator were watching. Intake questions, safety sequence, measurement order, all seven readings, the photo set, and a plain-language summary to the actual customer. The capstone practical is not a performance you put on once. It is your normal workday, observed.

What the certificate covers, and what it does not

When you pass both halves, the certificate is issued and signed the same day. Here is precisely what it asserts and what it does not.

It covers: demonstrated competency across the full program: safety practice, fundamentals, system knowledge, EPA 608 working rules, diagnostic method on electrical, refrigerant, and airflow faults, modern equipment including A2L refrigerants, design literacy, commissioning discipline, and professional communication, all verified by written examination at 80 percent and a live three-fault practical with zero safety violations.

It does not cover: anything outside its own claim. It is not a government license; your EPA 608 card, your state's contractor licensing structure, and any local requirements exist on their own tracks and this certificate replaces none of them. It is not a guarantee of future correctness; it certifies competency at the moment of assessment, which is why the habits matter more than the paper. And it is not a pay trigger, a promotion, or a title. Compensation decisions live entirely outside this program, are made on their own schedule, and were deliberately excluded from this course along with everything else about pricing and sales. The certificate is a competency credential, full stop. Anyone who tells you a piece of paper automatically changes a paycheck is describing a different document.

That separation is intentional and it protects the credential. A certificate that doubles as a pay event invites pressure to pass people. A certificate that asserts only competency can afford to be honest, and an honest credential is the only kind worth holding.

After the capstone: the master tech habit

The strange thing about finishing a 42-module course is discovering how it changes the shape of what you do not know. Before F1, you did not know what you did not know. Now you do, and that map of your own edges is the most valuable thing the program gives you, more than any single fact in it.

The refrigerant in new equipment changed three times in the working lifetime of techs who are still on rooftops today. The leak rules changed mid-career for every certified tech in the country. Communicating controls, inverter drives, and A2L sensors did not exist when the people who trained your evaluator were trained. The one safe prediction about the next twenty years is that a meaningful fraction of what this course taught will be revised by the industry, and the master tech is the person who notices first, reads the manufacturer bulletin instead of the rumor, and updates without being forced to.

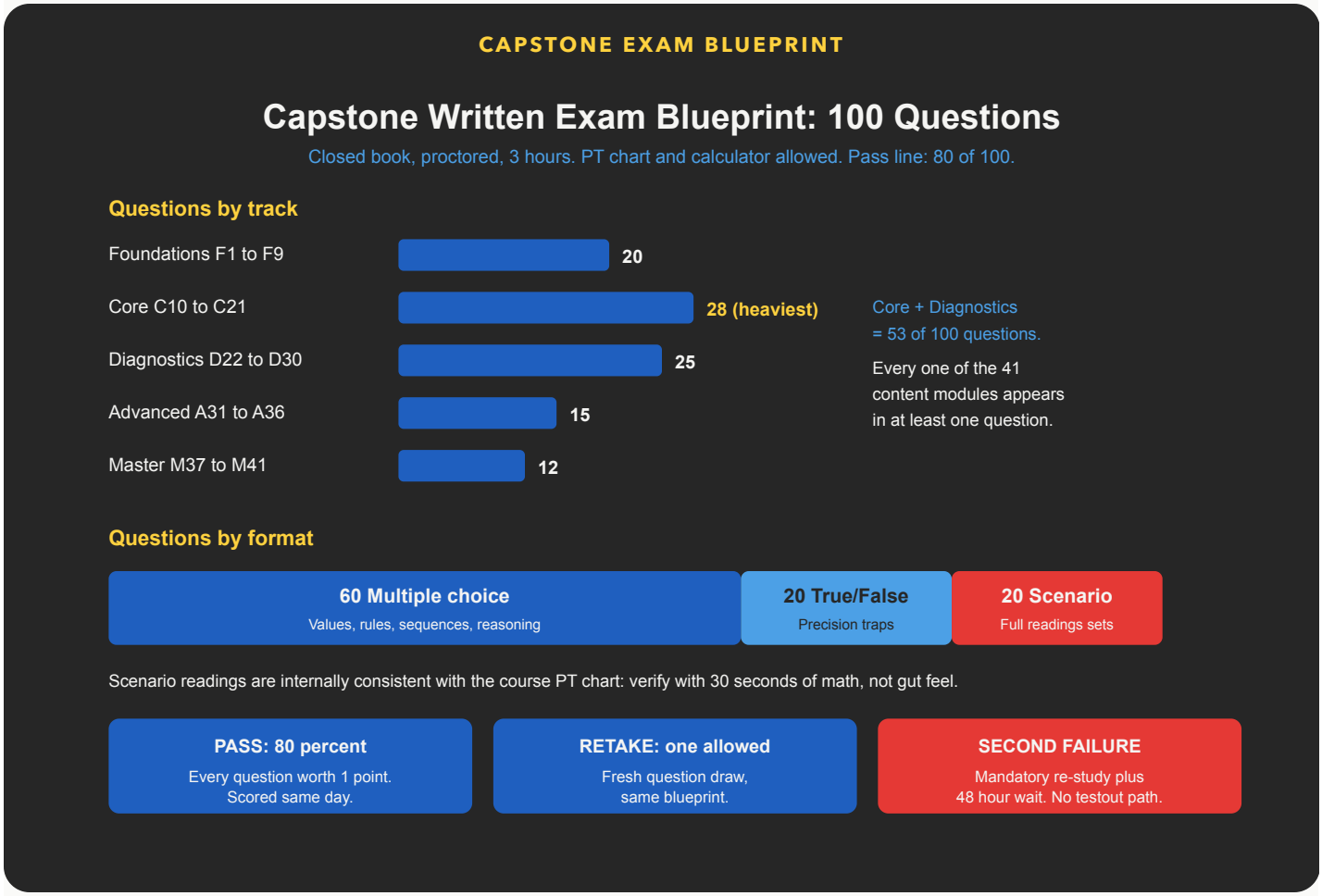
So the ongoing habit is concrete, not inspirational: read the install manual on every model you have not installed before, even when the install looks identical. Read the service bulletin behind every fault code you have not personally seen. When a reading surprises you, write it down and chase it after the call instead of shrugging it off. Teach the modules you just passed to the next apprentice, because nothing exposes a soft spot in your own understanding faster than someone honest asking you why. And once a year, re-take any module testout cold. Passing it costs you ten minutes. Failing it tells you something a callback would have told you more expensively.

The certificate says you reached the standard. The habit is what keeps the certificate true.

Common Mistakes

1. **Studying only the tracks you finished recently.** The M-track is fresh and the F-track is two seasons old, so techs over-study what they already know and bleed points on Foundations questions they would have aced at month two. The blueprint is published for a reason: 20 of the 100 questions are F-track. Review in proportion to the weights, not in proportion to your anxiety.
2. **Treating scenario questions as recall questions.** Scenario questions include readings because the readings decide the answer. Techs who pattern-match the story instead of doing the thirty seconds of saturation math pick the plausible-sounding wrong option, which was engineered to attract exactly that shortcut. Convert the pressures. Run the subtractions. Then answer.
3. **Losing the practical on safety in the first ten minutes.** The fastest way to fail the capstone is to walk past the disconnect, skip the capacitor discharge verification, or put a meter into a circuit you have not sized up, because safety items are mandatory-pass and the attempt ends there. Nothing about the staged faults can hurt you as fast as your own hurry.
4. **Stopping at two faults.** The practical plants three, always three, and the most common failed attempt finds two, relaxes, and writes up the call. A real system does not announce its fault count either, which is the entire lesson: after every confirmed diagnosis, re-run the full readings and ask what still does not add up. M40 taught this as compound-fault discipline. The capstone tests whether it stuck.
5. **Rushing the customer explanation.** Techs treat the closing roleplay as a formality after the "real" technical work and throw away easy rubric points with jargon, mumbling, or skipped findings. The explanation is weighted because it is the part of the job the customer actually experiences. Say it three ways, plain first, and finish the call like the professional the certificate says you are.

Module Visuals



CERTIFICATE OF COMPLETION

ISLAND BREEZE TECHNICIAN CERTIFICATION PROGRAM

Certificate of Completion

This certifies that

TECHNICIAN NAME

has completed all 42 modules of the program and demonstrated competency by written examination and live staged-fault practical evaluation, to the standard of safe practice, measured diagnosis, and professional service taught in Foundations through Master.

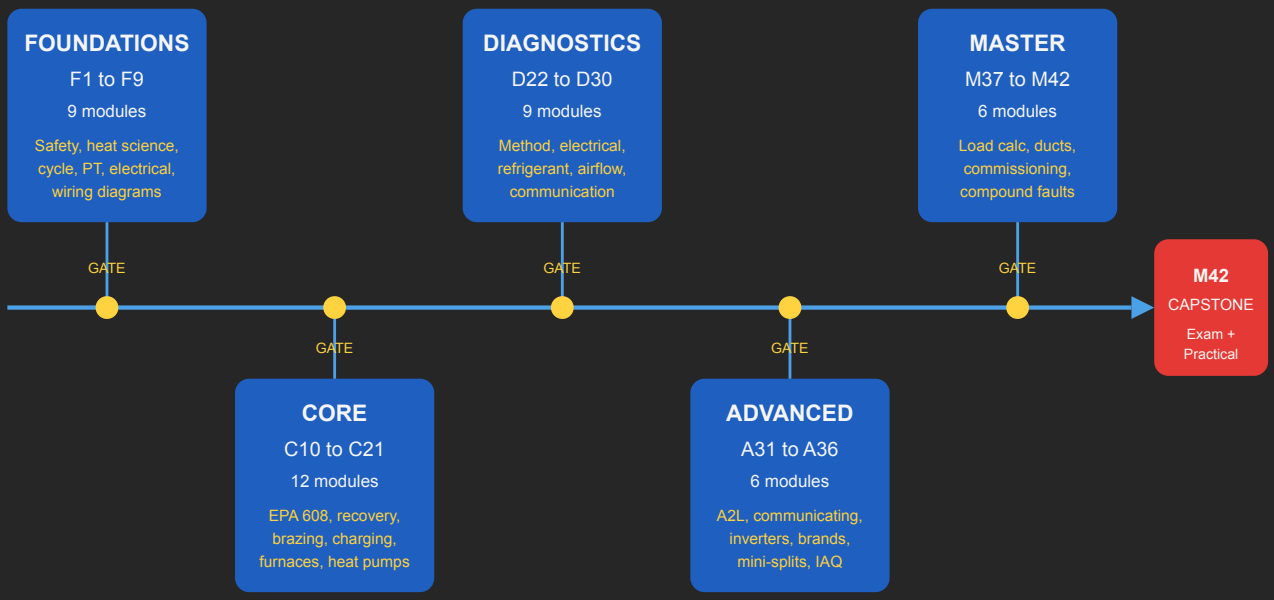
EVALUATOR SIGNATURE

DATE OF CERTIFICATION

CERTIFICATION PATH MAP

The Certification Path: 42 Modules, Five Tracks, One Gate

Every track ends in a gate: quizzes at 80 percent plus required practicals signed off

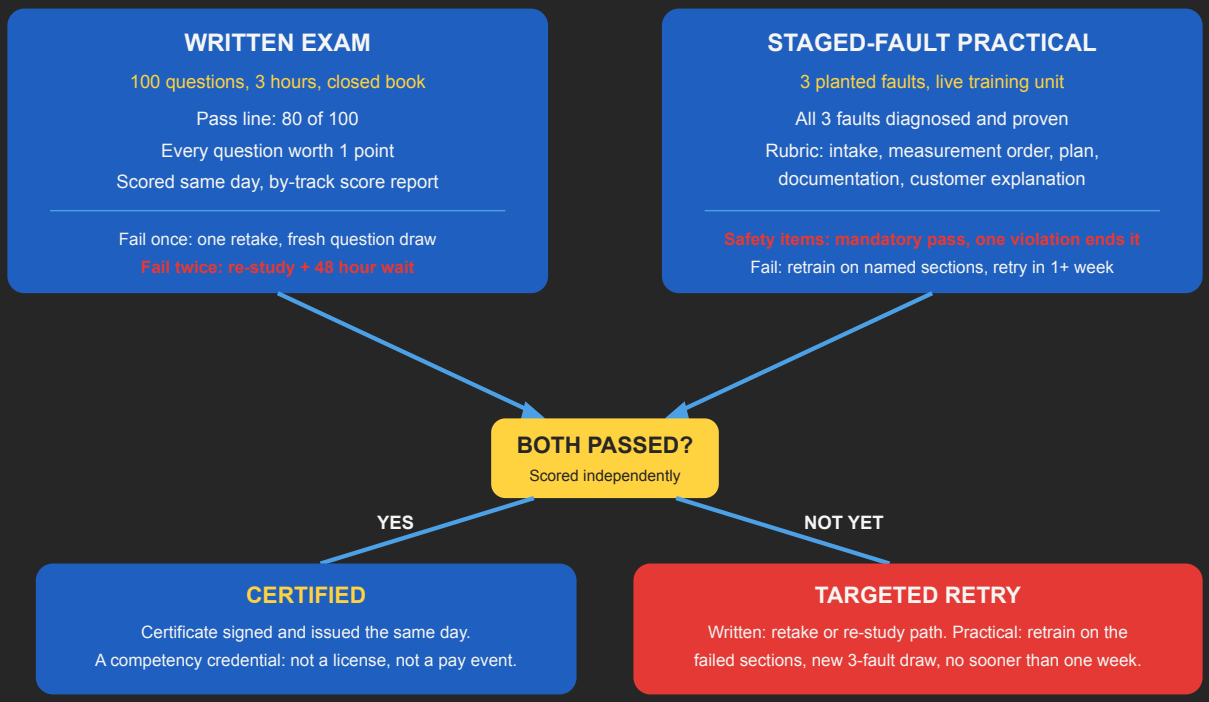


Each gate = 80 percent quiz pass plus signed practicals. The final gate, M42, tests all 41 modules at once.

GRADING RUBRIC MAP

How the Capstone Is Graded: Two Halves, One Certificate

The written exam and the practical are scored independently. You must pass both.



STAGED FAULT RULES

Staged-Fault Practical: Rules and Flow

3 planted faults on a live training unit: 1 electrical, 1 refrigerant circuit, 1 airflow. 3 to 4 hours.

ELECTRICAL (1 fault)
Capacitor, control circuit, contactor...

REFRIGERANT (1 fault)
Undercharge, overcharge, restriction...

AIRFLOW (1 fault)
Blocked return, supply, blower...

The session, in order (graded like a real call)

1. INTAKE ROLEPLAY
Evaluator plays customer. Your questions are scored.

2. SAFETY + VISUAL
PPE, disconnect, cap discharge. MANDATORY PASS.

3. MEASURE IN ORDER
Air before refrigerant numbers. Seven readings, recorded.

4. DIAGNOSE
All 3 faults, each proven by readings.

5. REPAIR PLAN
What, in what order, verify after. Root cause logic required.

6. DOCUMENTATION
Full readings set recorded plus the 8-photo close-out.

7. CUSTOMER EXPLANATION
Plain language, say it three ways. Pressure tactics = automatic fail.

Three rules that decide the day

SAFETY ENDS IT
One safety violation stops the attempt immediately, regardless of everything else.

ALL 3 OR RETRAIN
Two out of three is a retrain. On a real roof, the third fault is the callback.

FRESH DRAW ON RETRY
Re-attempt no sooner than one week, with three new faults. No two attempts are the same.

You are not told which faults were planted, and you are not told when you have found them all.