THE NELAC INSTITUTE

SOP TITLE	Development of Tests and Examinations
SOP NO.	1-129
REVISION NO	0
PROGRAM	Administration

SOP Approval Dates

	Initial Approval	Last Revision Date	Last Review Date
Committee: Training	7/11/2024		
Program	NA		
Policy Committee Review	7/19/2024		
TNI Board of Directors	NA (9/11/2024)		
Effective Date	7/11/2024		

1.0   Purpose and Applicability

This SOP is designed to provide a consistent approach for developing tests and examination questions for training courses or the TNI credentialing effort.

2.0   Summary

All training courses provided either as a webinar or webcast require a test or exam to be developed with the trainer providing the correct answers. TNI's credentialing effort requires the development of examinations.

3.0   Related Documents

ANSI/IAECT 1-2007, Standard for Continuing Education and Training
Guidebook for Air Force Instructors, Manual 36-2236, November 12, 2003
SOP 1-110, Educational Delivery System
SOP 1-117, Continuing Education Units
TNI STP for Training Courses

4.0   Definitions

Term	Definition
Certificate of Completion	A certificate provided to a student upon passing a test with a score of 70% or higher.
Certificate of Attendance	A certificate provided to a student that documents attendance or when a student does not pass the course test.
Difficulty - Low	An examination question that can readily be answered by the source material, such as a TNI standard.
Difficulty - High	An examination question that requires the student to use logic to answer the question as the specific language is not available directly from the source material, such as the TNI standard.
Digital Badge	A digital representation of earned Knowledge, Skills, and Abilities (KSAs) in a specific area such as customer service or sample handling.
Credential	An award demonstrating an individual's expertise in a specific area such as a Certified Quality Management Systems Professional.
Learning Objectives	Learning objectives describe what students are able to demonstrate in terms of knowledge, skills, and abilities (as applicable) (KSAs) upon completion of a course.
Exam	A formal assessment that typically covers a larger amount of material and is more high stakes than a regular test and may involve knowledge not covered by a course.
Test	An assessment that measures knowledge or skills acquired from the training course.

5.0   Procedure

5.1   Establishing the Test and/or Exam Questions for a Training Course

5.1.1   The trainer for each course is responsible for developing the questions and supplying the correct answers. Most training courses provided by TNI only test the knowledge that the student receives during the training class. A few courses (e.g., assessor technical courses) require the student to study information before class or to do homework to gain additional knowledge and experience. These courses require a comprehensive exam.

The test or exam should consist of a varying number of questions based on the length of a class as summarized below.

Length of Course, hours	Minimum Number of Questions
1-2	10
2-4	15
4-8	25
8 or more	35

5.1.2   Questions can be in the form of multiple choice, True/False, or Yes/No. For multiple choice questions there must be no more than 5 options available with only one correct answer. There should be a balance of multiple choice and True/False or Yes/No questions. If essay or short answer questions are utilized that need to be answered in a written format, the numbers in 5.1.1 may be reduced.

5.2   Establishing Examination Questions for a Badge or Credential

5.2.1   An individual or team develops the questions and answers using tests from training courses or other relevant material. The examination should consist of 30 questions for a Digital Badge and 155 questions for a Credential. The same question may appear in multiple Digital Badge examinations. In order to randomize examination questions for individuals who retake exams, at least 60 questions must be developed for each digital badge and at least 450 for the credential.

5.2.2   Questions can be in the form of multiple choice, True/False, or Yes/No. For multiple choice questions there must be no more than 5 options available with only one correct answer. There should be a balance of multiple choice and True/False or Yes/No questions. There should be a balance of low and high difficulty questions.

5.3   Review of Test and Examinations Questions

5.3.1   Test or exam questions for a training course only require review by the TNI Training Coordinator.

5.3.2   Examination questions for Digital Badges and Credentials require review by at least 3 qualified individuals selected by the TNI Credentials Coordinator.

5.3.3   Periodically, the TNI Training Coordinator or Credentials Coordinator will review the answers to see if any questions or possible answers were poorly worded and determine if any adjustments to the scores need to be made. For tests or exams associated with a particular trainer, the trainer will be consulted on any proposed changes.

6.0   Records

All test or exam questions and answers for a particular training course are archived on-line with related course materials such as the presentation, handouts, and related documents.

All examination questions and answers for an exam associated with a particular Digital Badge or credentialing effort are archived in a database that shows the difficulty of the question and which Digital Badges it applies. An example is provided in Attachment A.

7.0   References

SOP 1-128, Content of TNI Training Courses

TNI Certified Professional Handbook

8.0   SOP Approved Changes

Revision No.	Effective Date	Description of Change
0	10-28-23	New Document.

Attachment A: Example Database for a Credential

Question	Difficulty	a	b	c	d	e	Answer	1QMS	2PT	3DI
A complete, continuous Chain of Custody form is required for all samples,	Low	TRUE	FALSE				b			
"Cherry-Picking" is	Low	Deciding which samples to analyze first	Reporting some, but not all of the blank results	Selecting individual calibration points to meet a calibration coefficient criterion	All of the above	a and c	d			1
"Cradle to grave" in an environmental laboratory refers to	Low	The practice of treating a sample with the same care as that given to a human being, from birth to death	A system of checks and balances meant to ensure the integrity of laboratory operations	A practice known as "dawn to dusk" in the European Union	A system of documenting the movement of a sample from arrival at the laboratory to its disposal	The practice of designating samples for rush analysis and quick disposal	d			