

Medical Terminology

Implementation Guide

Learning Resource Powered by NHA

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ABOUT THIS GUIDE

This guide is a companion to NHA's Medical Terminology, intended for those implementing this learning resource. We included information such as how many hours you will need to incorporate the training, numerous tips to make implementation seamless, and detailed information on what content and features are included.

The Medical Terminology implementation guide is organized so that you can quickly find what you are looking for. We hope this guide will lighten your load as you prepare to give learners the knowledge and skills they need for long-term success in their health care career.

PRODUCT DESCRIPTION

Medical Terminology is an integrated, interactive online learning resource that works on multiple devices, including mobile. The product is designed to provide content to meet the needs of the Medical Terminology course for a variety of allied health programs. Content presented in the product is mapped to all NHA test plans for allied health credentials, including the CBCS, CCMA, CEHRS, CET, CMAA, CPCT, CPhT, and CPT exams. This guide is provided as a tool to assist facilitators with implementation of the product.

MEDICAL TERMINOLOGY

- Uses interactivity to increase learner engagement
- Provides content provided in small sections with frequent practice and feedback to increase confidence
- Encourages application of learned content through practice activities, case studies, and worksheets to increase retention
- Provides a summative quiz at the end of each module to measure performance

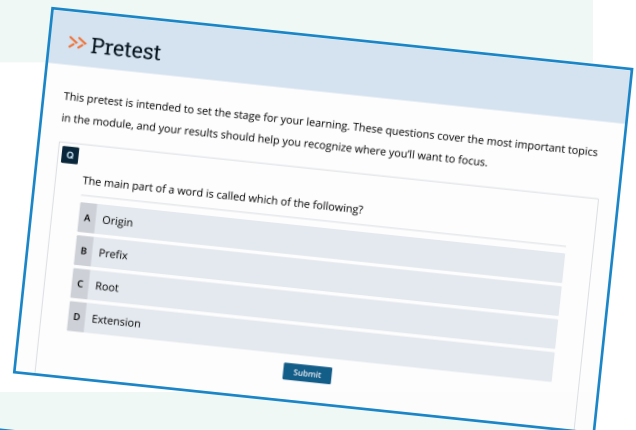
INSTRUCTIONAL DESIGN AND MODULE FEATURES

Medical Terminology consists of 16 modules. The first three modules introduce basic concepts of Medical Terminology. The remaining modules present the common medical terms by body system, beginning with the integumentary system and then progressing through the skeletal, muscular, nervous, special senses, endocrine, cardiovascular, blood and immunity, respiratory, digestive, urinary, male, and female reproductive systems.

Each module in the product includes the same components.

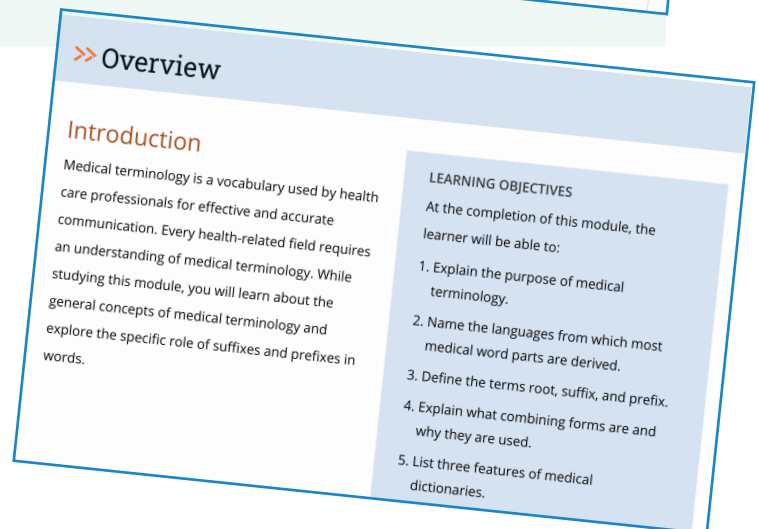
Pretest

A pretest to assess background knowledge before completion of a module. Here the learner can gauge prior knowledge of key concepts and determine where focus is needed. This ungraded quiz with immediate feedback sets the stage for learning.



Overview

An overview. Here the learner will find a brief introduction and module objectives. Practice activities and quizzes are designed to test knowledge of the objectives. Underlined words have definition and audio pronunciation pop-ups.



Topics

Topics are where the learning path unfolds. These include:

- Anatomical terms
- Physiological terms
- Word parts specific to the body system
- Clinical aspects that cover common clinical conditions associated with the system, common diagnostics associated with those conditions, and common treatments.

Topics are designed to present small sections of information followed by practice activities that align to the learning objectives for that topic—i.e., if a topic is focused on anatomy, students would be asked to label anatomical structures. Presentation of the information varies from text w/audio pronunciations, illustrations, photography, and animations. The variety in presentation of the materials as well as the practice activities helps increase student engagement and retention of information.

>> Word Parts Pertaining to Cells, Tissues, and Organs

Roots for Cells and Tissue

Root	Meaning	Example	Definition of Example
morph/o	form	polymorphous pol-e-MOR-fus	having many forms
cyt/o, -cyte	cell	cytologist si-TOL-o-jist	one who studies cells
nucle/o	nucleus	nuclear NU-kle-ar	pertaining to a nucleus
kary/o	nucleus	karyotype KAR-e-o-type	picture of a cell's chromosomes organized according to size

>> Clinical Aspects of the Skin

Many diseases are manifested by changes in the quality of the skin or by specific lesions. Some types of skin lesions are below. The study of the skin and skin diseases is **dermatology**, but careful observation of the skin, hair, and nails should be part of every physical examination. The skin should be examined for color, unusual pigmentation, and lesions. It should be palpated to evaluate its texture, temperature, moisture, firmness, and any tenderness.

Types of Skin Lesions

bullae BUL-ah	raised, fluid-filled lesion larger than a vesicle (plural: bullae)
fissure FISH-ure	crack or break in the skin
macule MAK-ule	flat, colored spot less than 1 cm in size. A larger spot is called a patch
nodule NOD-ule	solid, raised lesion larger than a papule; often indicative of systemic disease

Practice activities

Practice activities reinforce learning objectives. Like the pretest, practice activities are not scored; they're intended to engage the learner in a low-stress environment. Correct answers are given immediately and activities are tracked as complete on the student dashboard and facilitator's reports. Questions take a variety of formats—multiple choice, T/F, short answer, fill-in-the-blank, matching, and labeling.

Practice Activity

Use this word bank to fill in the blanks for the following sentences. Be sure to use the phonetic spelling to pronounce the words in the exercises.

Cells	Fiber	Tissues	Forms
Nucleus	Mucus	Gland	Nipple
Network	Body		

1. Cytogenesis (si-to-JEN-eh-sis) is the formation (genesis) of _____.
(Enter your response and submit to compare to the correct answer.)

2. Nucleoplasm (NU-kle-o-plazm) is _____.
(Enter correct answer.)

Practice Activity

Match the terms with their meanings. (Drag the option from the left column to match it with the description in the right column.)

leukoblast (LU-ko-blast)	immature white blood cell
hypertrophy (hi-PER-tro-fe)	formation of tissue
histogenesis (his-to-JEN-eh-sis)	cell that ingests waste
phagocyte (FAG-o-site)	study of heredity
genetics (jeh-NET-iks)	overdevelopment of tissue

Quizzes

Summative quizzes assess knowledge of module content.

Additional Enrichments

Downloadable enrichment content, including:

Case studies. These include a variety of reports related to module content and help to reinforce terms learned throughout.

Worksheets include a variety of different styles of questions to help learners practice their new language skills. These can be used independently or assigned by facilitators.

PowerPoints. These can be used independently for review. They are also found in the Facilitator's Tool Kit for facilitator use.

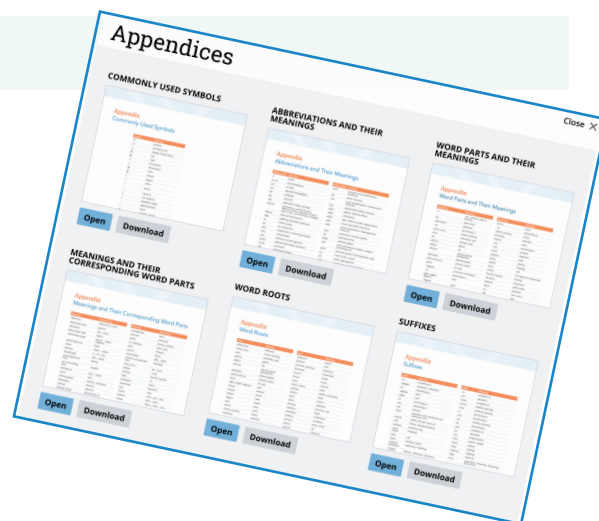
Image bank containing photos and figures found in the content are all available in a PPT presentation. Additional artwork is included for further reference.



In addition to the individual modules, Medical Terminology provides supplemental resources that support the entire product. These can be accessed from all modules.

Appendices

Lists of common symbols, abbreviations, word parts, metric measurements, and medications that can be viewed within the product or downloaded for future reference.



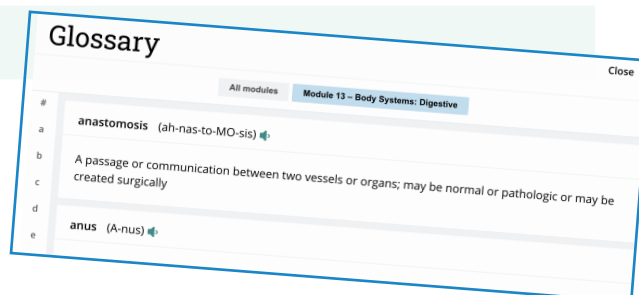
Flashcards

Over 1,000 terms available. These can be viewed at the module level or for the entire product. Learners can identify terms they already know, eliminating them from their study deck. The flashcards also work well on mobile phones.



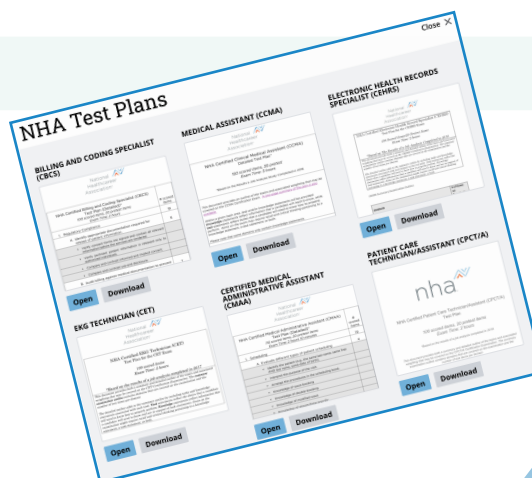
Glossary

Available at the module or product level, this includes word definitions and audio pronunciations.



NHA Test Plans

For study and review, test plans are provided for all NHA certifications.

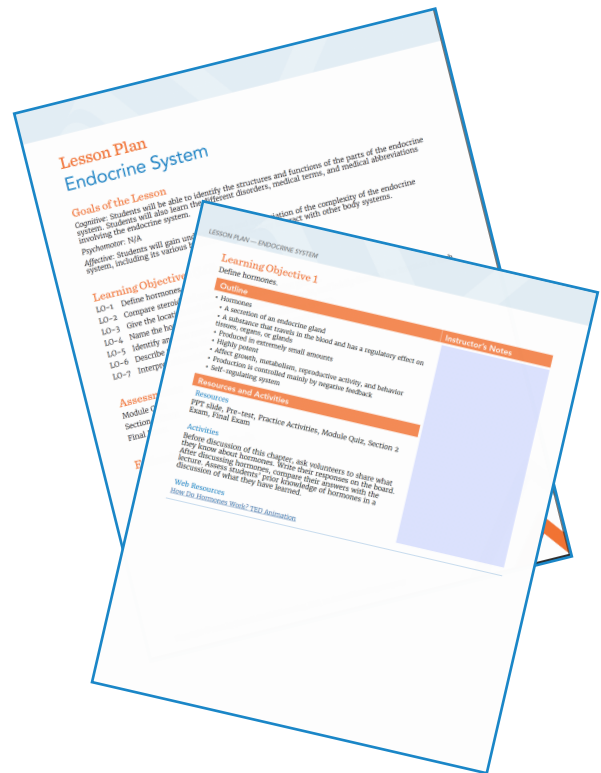


FACILITATOR'S TOOL KIT

NHA's Medical Terminology also includes a [Facilitator's Tool Kit](#) (FTK). This tool kit will assist facilitators in deploying the product to meet their specific needs, whether in class or online.

The Tool Kit includes the following:

- Implementation guide
- Lesson plans
- PowerPoints
- Enrichment worksheets
- Answer keys for:
 - Enrichment worksheets
 - End-of-module quizzes
- Mapping guides for:
 - NHA test plans
 - CAAHEP and ABHES accreditation standards
- Transition guide from current medical terminology textbooks
- Two section tests
 - One section test for the first three modules (foundational knowledge)
 - One section test for all body systems
- Final exam for all 16 modules



nha NHA's Medical Terminology		Medical Terminology for Health Professions, 8th edition, Ehrlich, Schröder, Ehrlich, & Schroeder (Cengage, 2017)
Module 1 - Introductory Concepts		
Concepts of Medical Terminology		
Word Parts		pp. 4-5
Word Derivations		
Pronunciation		pp. 11-12
Abbreviations		
Medical Dictionaries		pp. 10-11
Suffixes		pp. 6-7
Forming Plurals		pp. 12-13
Prefaces		pp. 8-9

USING NHA'S MEDICAL TERMINOLOGY

Before starting to use Medical Terminology, review the following training videos in the Facilitator's Tool Kit (FTK).

- **Introduction.** Provides a description of the product, the intended audience, and product features.
- **Gaining Access.** Shows learners how to get into the product.
- **Module Navigation.** Shows users how to navigate through different parts of the module.
- **View Student Progress.** Explains how to access reports for individual and all learners at the module and product level.

IMPLEMENTATION STRATEGIES

Knowledge of Medical Terminology is a critical foundational skill required across most allied health professions. The flexibility of delivery with NHA's Medical Terminology allows facilitators the ability to implement the product when and where it makes sense within an individual program.

1. Review the overall product, module by module. This includes case studies and worksheets in the enrichments section, which can be used for additional learning and practice.
2. Familiarize yourself with the product structure by working through modules. It would be best to complete all modules to become familiar with the content. If time does not allow for that, pick several modules that are different from one another (i.e., the muscular system and the digestive system) and complete those.
 - a. Decide if you will ask learners to complete all practice activities in the module; some facilitators may omit labeling activities to save time.
 - b. Decide if you will assign the enrichment-section case studies or worksheets.
3. Decide how the product will be implemented into your program.
 - a. Will Medical Terminology be a standalone resource or a supplement to current materials?
 - b. Will Medical Terminology be used in one specific course or across multiple courses (as in a wheel structure)?
 - c. Will the course be delivered in person, online, or in a hybrid format?
 - d. What is the timeframe for the course? Over how many weeks will the content be delivered?
4. Plan for implementation.
 - a. If Medical Terminology will be a standalone resource, match the course outcomes to each module.
 - b. If Medical Terminology will be implemented across multiple courses, match the content to the appropriate courses or units.
 - c. A transition guide from several medical terminology textbooks is included in the FTK to assist with this process.

Pathways to Implementation

Path 1

Standalone Course

The course will be separate from other courses in the program

Can be used in class, online, or in a hybrid environment

Path 2

Threaded throughout Multiple Courses

The resource will be used in a wheel program in which the modules are threaded throughout the program

Can be used in class, online, or in a hybrid environment

RECOMMENDED TIME IN THE MEDICAL TERMINOLOGY RESOURCE

The following tables provide recommendations for time students should spend in the product. It is based on word counts and the amount and types of activities in each module. This is purely an estimate—some learners will need less time, others will need more. As NHA gathers user analytics, we will update this section.

Recommended Time Overview

Reading content in the entire product: 19.5 hr

Practice activities: 14.5 hr

End-of-module quizzes: 3.0 hr

Estimated total time: 37 hr

Recommended Time per Module

<i>Module Name</i>	<i>Learning content</i>	<i>Practice activities</i>	<i>Module quiz</i>	<i>Est. Total Time</i>
Concepts, Suffixes, and Prefixes	60 min	45 min	10 min	2 hr
Body Structure	50 min	35 min	10 min	1.5 hr
Disease and Treatment	90 min	60 min	10 min	2.5 hr
Body Systems: Integumentary	45 min	30 min	10 min	1.5 hr
Body Systems: Skeletal	70 min	60 min	10 min	2.5 hr
Body Systems: Muscular	45 min	30 min	10 min	1.5 hr
Body Systems: Nervous and Mental Health	90 min	60 min	10 min	3 hr
Special Senses: Ears and Eyes	70 min	50 min	10 min	2 hr
Body Systems: Endocrine	55 min	35 min	10 min	1.5 hr
Body Systems: Cardiovascular and Lymphatic	90 min	60 min	10 min	2.5 hr
Body Systems: Blood and Immunity	75 min	60 min	10 min	2.5 hr
Body Systems: Respiratory	70 min	50 min	10 min	2 hr
Body Systems: Digestive	75 min	75 min	10 min	2.5 hr
Body Systems: Urinary	60 min	70 min	10 min	2 hr
Body Systems: Male Reproductive	55 min	70 min	10 min	2.25 hr
Body Systems: Female Reproductive	110 min	70 min	10 min	3 hr
Total:	1,110 min	815 min	160 min	36 to 37 hr

IMPLEMENTATION IN 10-WEEK, 12-WEEK, AND 16-WEEK COURSES

NHA's Medical Terminology is designed to be an interactive resource that engages users in learning medical terminology.

Best practices point toward the initial use of the product while in class (in person or online). This allows the facilitator to ensure all learners can log into the product and navigate through the first module. Once they are comfortable with accessing the modules, the remainder of their work with the resource can be done outside of the course environment. Learners would complete assigned modules outside of class and then come prepared to participate in classroom activities that allow them to practice the knowledge they have gained. The enrichment content provided within each module make a great starting point for those classroom activities.

The tables below provide recommendations on how to implement the resource over 10-week, 12-week, and 16-week course terms.

10-week Term*		
<i>Course Week</i>	<i>Module</i>	<i>Module Name</i>
1	Module 1	Concepts, Suffixes, and Prefixes
	Module 2	Body Structure
2	Module 3	Disease and Treatment
	Module 4	Body Systems: Integumentary
3	Module 5	Body Systems: Skeletal
	Module 6	Body Systems: Muscular
4	Module 7	Body Systems: Nervous and Mental Health
	Module 8	Special Senses: Ears and Eyes
	Module 9	Body Systems: Endocrine
5	Module 10	Body Systems: Cardiovascular and Lymphatic
6	Module 11	Body Systems: Blood and Immunity
7	Module 12	Body Systems: Respiratory
8	Module 13	Body Systems: Digestive
9	Module 14	Body Systems: Urinary
	Module 15	Body Systems: Male Reproductive
10	Module 16	Body Systems: Female Reproductive

*Courses offered in a 5-week term could double up these modules (i.e., modules 1-4 would be completed in week 1; modules 5-9 would be completed in week 2, etc.).

12-week Term*

<i>Course Week</i>	<i>Module</i>	<i>Module Name</i>
1	Module 1	Concepts, Suffixes, and Prefixes
2	Module 2	Body Structure
3	Module 3	Disease and Treatment
	Module 4	Body Systems: Integumentary
	Module 5	Body Systems: Skeletal
4	Module 6	Body Systems: Muscular
5	Module 7	Body Systems: Nervous and Mental Health
6	Module 8	Special Senses: Ears and Eyes
	Module 9	Body Systems: Endocrine
7	Module 10	Body Systems: Cardiovascular and Lymphatic
8	Module 11	Body Systems: Blood and Immunity
9	Module 12	Body Systems: Respiratory
10	Module 13	Body Systems: Digestive
11	Module 14	Body Systems: Urinary
	Module 15	Body Systems: Male Reproductive
12	Module 16	Body Systems: Female Reproductive

*Courses offered in a 6-week term could double up these modules (i.e., modules 1-3 would be completed in week 1; modules 4-6 would be completed in week 2, etc.).

*Courses offered in a 4-week term could triple the modules (i.e., modules 1-5 would be completed in week 1; modules 6-9 would be completed in week 2, etc.).

16-week Semester

<i>Course Week</i>	<i>Module</i>	<i>Module Name</i>
1	Module 1	Concepts, Suffixes, and Prefixes
2	Module 2	Body Structure
3	Module 3	Disease and Treatment
4	Module 4	Body Systems: Integumentary
5	Module 5	Body Systems: Skeletal
6	Module 6	Body Systems: Muscular
7	Module 7	Body Systems: Nervous and Mental Health
8	Module 8	Special Senses: Ears and Eyes
9	Module 9	Body Systems: Endocrine
10	Module 10	Body Systems: Cardiovascular and Lymphatic
11	Module 11	Body Systems: Blood and Immunity
12	Module 12	Body Systems: Respiratory
13	Module 13	Body Systems: Digestive
14	Module 14	Body Systems: Urinary
15	Module 15	Body Systems: Male Reproductive
16	Module 16	Body Systems: Female Reproductive

Wheel Programs*

Course Week Module Name (to be entered by institution)

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

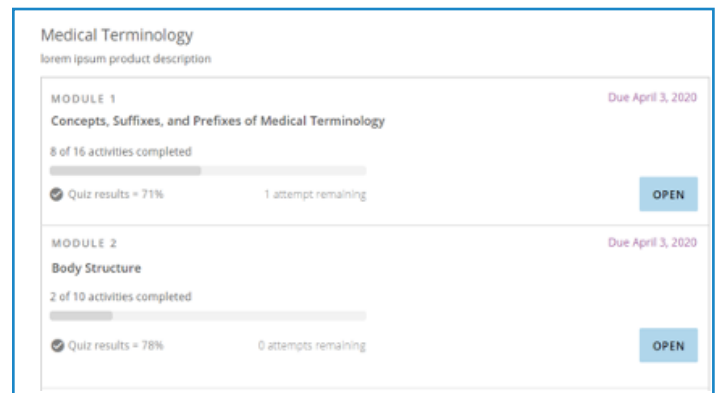
16

*If a wheel program has more or fewer courses than 16, adjust the number of modules that are presented per course module to align with your timelines.

LEARNER DASHBOARD

Each time the product is accessed, the learner sees the following:

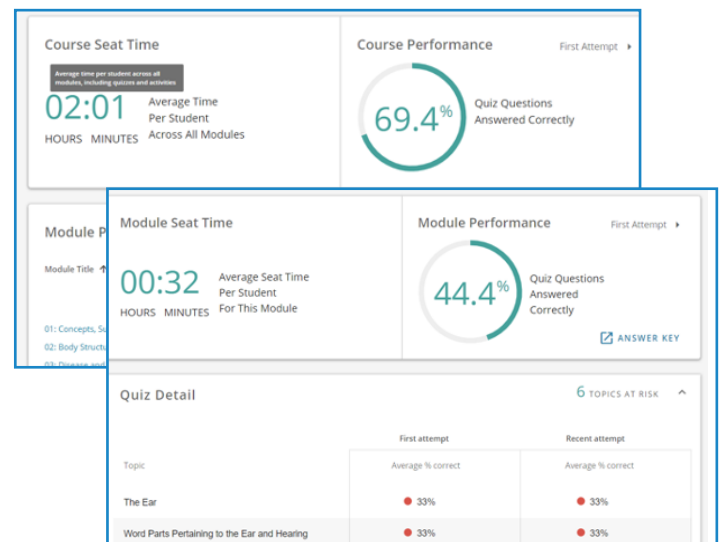
1. When the module is due for completion (as assigned by the facilitator)—April 3, 2020, in this case.
2. How many practice activities have been completed. Each time the learner leaves the product, the practice activities re-set, so they can be repeated. Note, however, that the count of completed activities doesn't re-set; it picks up from where the learner left off.
3. Quiz results (for the most recent attempt).



ANALYTICS AND REPORTING

Included with NHA's Medical Terminology are robust analytics with views for an entire class or individual students. These show key engagement and performance metrics at the course and module levels. Engagement is measured by time spent as well as activities completed, allowing the facilitator and learner a means to track progress and allow for remediation and planning.

1. Seat time measures the amount of time learners spend in the product.
2. Progress shows how many practice activities have been completed for each module.
3. Quiz results are shown as a percentage score. An answer key is included.



A new reporting feature also shows quiz detail. This identifies questions by module topic and flags topics where an individual learner (or an entire class) may be struggling. This will help facilitators mitigate as appropriate, whether by assigning additional learning (such as enrichment resources) to an individual or focusing on a challenging topic in class.

		3 TOPICS AT RISK	
Topic	# Questions	First attempt	Recent attempt
		% correct	% correct
1 - Upper respiratory passageways	2, 5	60%	61%
2 - Lower respiratory passageways and lungs	3, 9, 11, 13	52%	64%
3 - Breathing	1, 4	65%	75%
4 - Gas transport	6, 12	71%	68%
5 - Respiratory system	5, 7, 14	96%	98%
6 - Clinical aspects of the respiratory system	8, 10, 15	88%	92%

PRODUCT SUPPORT

At NHA, we pride ourselves on timely, effective support to meet your needs. If you need assistance with this product, please contact your NHA representative, call us at 800-499-9092, or reach out via the chat function within your NHA portal account.

TECHNICAL REQUIREMENTS

Technical requirements for all NHA products can be found in the Help Center section of our web site: <https://info.nhanow.com/technical-requirements>

FAST FOLLOWERS

We're already working on several additional features that will launch this spring.

IN THE LEARNING RESOURCE

- Rationales for multiple choice and T/F Practice Activities
- Ability to print at the Topic level (note that Practice Activities won't include answers and animations won't run)

IN THE ASSIGNMENTS FUNCTIONALITY

- Ability for facilitators to set the number of quiz attempts. These range from 1-5 and unlimited.

IN THE FTK

- Answer Keys for Practice Activities
- Video for Managing Classes
- Video for Reading and Interpreting Individual and Group Reports
- Video for Using the Facilitator's Tool Kit

FAQS

What specific requirements does Medical Terminology fulfill?

Medical Terminology fulfills educational materials requirements for the Medical Terminology course taught across multiple allied health programs.

Can educational institutions offer this as a credit course?

The resource itself is not credit-bearing. However, the Medical Terminology course is often offered for credit.

How long will Medical Terminology take to complete?

Inclusive of content, practice, and assessment, total time in the product is approximately 37 hr. (Keep in mind this is a new product, so we don't have data to validate this.)

Where should we plug this offering into our current programs?

The product should be used in the Medical Terminology section of your program, whether as a standalone or integrated course.

Who are ideal candidates for this resource?

Students in all allied health programs must have some knowledge of Medical Terminology.

Will learners receive continuing education credit or a certificate for completing Medical Terminology?

At this time, there is no credit or certificate for the product. However, we are contemplating adding this in the future.

How long do learners have access to the Medical Terminology content?

Access is for one year.

Is this self-paced or facilitated?

The product should be used in a facilitated environment; instructors have control over assignments.

Is the final exam proctored? Can we lock it down on our LMS?

The final exam is a separate document provided in the FTK. It can be downloaded and exported into an LMS for deployment. The exam is not proctored nor "seen" by NHA.

Does the product integrate with LMSs?

The product can be delivered from any LMS via a single-sign-on request and reports can be imported into gradebooks. However, the product doesn't "play" inside the LMS itself.

Can the scores from activities be integrated into our LMS gradebook?

Practice activities are not scored; they're tracked for completion only. Quiz scores can be imported in LMS gradebooks.

Can the product be customized at all?

There are no customization options for this product. NHA uses data to inform and improve product functionality; customization would compromise this effort.

What kind of technical support is available to instructors/program staff and what hr is that support offered?

Support is available via phone, email, and chat: <https://www.nhanow.com/help-center/contact-us>

What kind of technical support is available to students and what hr is that support offered?

Support is available via phone, email, and chat: <https://www.nhanow.com/help-center/contact-us>

What browsers will this product work in?

The product works best with Firefox, Chrome, and Safari browsers: <https://info.nhanow.com/technical-requirements>

Can students access this product from a tablet or mobile phone?

Yes. The product can be launched from desktop, PC, tablet, and mobile devices.

How does purchasing for the product work? Will I purchase licenses in bulk or individually? How far in advance will licenses need to be purchased?

The product can be purchased in bulk or individually a few days before the license is needed.

If a student doesn't access the product through their account, will the school still be charged for it?

Yes. However, you can remove it from that student's account and place it elsewhere as long as it has never been accessed.

Will schools be given any complementary accounts for faculty or staff? If so, how many, and how long will those accounts be valid for?

Please contact your NHA representative for more information.

If I find content that is not clear or accurate, where can I report the issue?

Content issues and questions should be posed to your NHA sales rep, who will get it to the appropriate parties for clarification.

Is there an audio reader included with the product?

The reader normally embedded in our products doesn't do well with medical terminology (mispronunciations happen). Therefore, it's not included in this product. However, our content can be read by a browser text-to-speech tool (e.g., JAWS), making it accessible.

What is the reading level for Medical Terminology?

NHA does not perform reading level analyses on our certification assessments or preparatory materials. We are focused, instead, on ensuring that all content is appropriate for the given test plan and the knowledge needed for that certification. That content is validated both through iterative content expert reviews and through psychometric evaluation of testing data. While we do not perform Reading level analyses, NHA's editorial staff strives to ensure that we use clear, concise, and accurate language.

ISBN AND COPYRIGHT INFORMATION

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