



# **NBME**<sup>®</sup> CUSTOMIZED ASSESSMENT SERVICES

**PROGRAM GUIDE**

Create Examinations  
Tailored to Your Curriculum



# CONTENTS

## **03 Overview**

---

03 Options Inside CAS

---

03 CAS Examination Content

---

04 Policies for Use of CAS

---

04 Security of Examinations

---

04 Key Medical School Staff Roles

---

05 Accessing CAS

---

## **06 Test Construction Activities**

---

## **07 Ordering and Administering Tests**

---

## **08 Additional Features of CAS**

---

## **09 Score Reporting**

---

10 Final Score Components

---

## **14 Scaling Group Application**

---

## **14 Contact Us**

---



# OVERVIEW

NBME offers the Customized Assessment Services (CAS) program to enable medical school faculty to build high-quality examinations for students tailored to local curricula using NBME test questions. The CAS program provides flexible tools for efficient, customized exam construction to allow faculty to individually review and select items to be included on CAS exams. Schools receive multiple score components and students additionally have access to select scores through the [INSIGHTS<sup>SM</sup>](#) dashboard.

## Options inside CAS

### CAS Proctored Exams

- ▶ Exams are administered in a secure, proctored environment locally at medical schools
- ▶ Examinees can only view test items while taking the exam
- ▶ Schools receive a series of score reports before students.

### CAS Practice Exams

- ▶ Exams do not require proctoring.
- ▶ Items may be reviewed with faculty in a group setting
- ▶ Can be taken within a single-day or multi-day administration window
- ▶ Examinees receive an e-mail to access the exams
- ▶ Upon completing the exam, examinees immediately receive their percent correct scores and the option to review all questions while their exam administration is open. The questions they answered incorrectly will have correct responses indicated.

## CAS Examination Content

The CAS Program offers pre-clerkship and clerkship content to support local organ-system, discipline based, problem-based or other curricular approaches at medical schools. To do so, NBME has assembled a large pool of test items covering the topics commonly taught and tested in coursework. All items are written and reviewed with the same rigor used to create United States Medical Licensing Examination<sup>®</sup> (USMLE<sup>®</sup>) items. The item banks for CAS Proctored and CAS Practice both contain Basic Science and Clinical Science items, but items are not shared between the banks.

## Policies for Use of CAS

Participating schools must agree to use the CAS program in compliance with NBME policies and procedures. NBME customized assessments are intended to complement other sources of information about the educational progress of students. The assessment results should be interpreted in light of other available information. Likewise, curriculum evaluation cannot be based on assessment results alone. The quality of teaching can and should be evaluated by frequent peer observation and student feedback, not inferred solely from the level of assessment results.

## Security of Examinations

To ensure the integrity of the NBME CAS program and the validity of the scores reported, it is essential to always maintain the security and confidentiality of test materials. The success of this program depends on vigorous adherence to NBME policies and protocols, including the implementation of the strictest security measures to ensure standardized testing conditions. All items used in NBME CAS exams are owned and copyrighted by NBME. In addition, any unauthorized reproduction or dissemination of test materials or any part of them through any means, including but not limited to copying, printing, photographing or downloading of electronic files, or reconstruction through memorization and/or dictation, is strictly prohibited. NBME reserves the right to pursue its rights and remedies to the fullest extent permitted by law without further notice, including taking legal action. NBME also reserves the right to discontinue the CAS program in the event of a breach or suspected breach in the security of test materials

Of equal importance, NBME is committed to protecting the high-quality reliability, validity, and confidentiality of the examinations it manages. We work with our partners, customers, and examinees to continuously identify the right solutions to improve exam security. We have a customized security approach for each of our assessments. NBME collaborates with partners, clients, and test administrators to meet agreed upon security standards.

## Key Medical School Staff Roles

Listed below are the key players that support the construction and administration for CAS exams.

### Executive Chief Proctor (ECP)

The Executive Chief Proctor (ECP), nominated by the dean, has access to the MyNBME® Services Portal and has overall responsibility for ordering services online, coordinating test administration activities, and assuring that the security of the test items reviewed by faculty and seen by examinees is maintained. The ECP can manage permissions to CAS for other faculty members.

### User Account Administrator (UAA)

The UAA creates and manages accounts in the MyNBME Services Portal for eligible and qualifying staff who need to access the test construction system, score reports, or item analysis data.

### Faculty Participants

Faculty member may participate in the test construction process; however, those who will review NBME test items must agree to the terms and conditions when first accessing the CAS system. Faculty members should review the terms and conditions carefully prior to deciding whether to agree and comply or not. Faculty members who provide test preparation outside the school are not eligible to access the CAS Program. Individuals who do not agree to the terms and conditions will not be able to access the CAS system.

**OTHER RESOURCES:** For more information about all NBME examinations, please visit the [Assess & Learn page](#) on the NBME website.

## Accessing CAS

### Order a Subscription

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The first step is for the ECP to order a subscription to the service and identify the estimated month and year that test construction activities will begin. NBME must receive payment for the subscription fee before the subscription period starts unless it is paid by check. The subscription becomes active on the first day of the month entered as the starting point for test construction activities.

Go online to the [Customized Assessment Services Fees](#) page to view current fees for the service.

An annual subscription for CAS includes:

- ▶ Program setup
- ▶ Access to CAS Proctored and CAS Practice item banks for construction
- ▶ Support for test construction and test administration activities
- ▶ Score reports

- ▶ Student Only Access to INSIGHTS dashboard
- ▶ Item Analysis application

### Login through MyNBME Services

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CAS is available through the MyNBME® Services Portal, the primary source for authorized medical school representatives to obtain information about their students. Access enables a variety of activities related to USMLE, NBME Subject Examinations, and other services.

### NBME Secure login Process

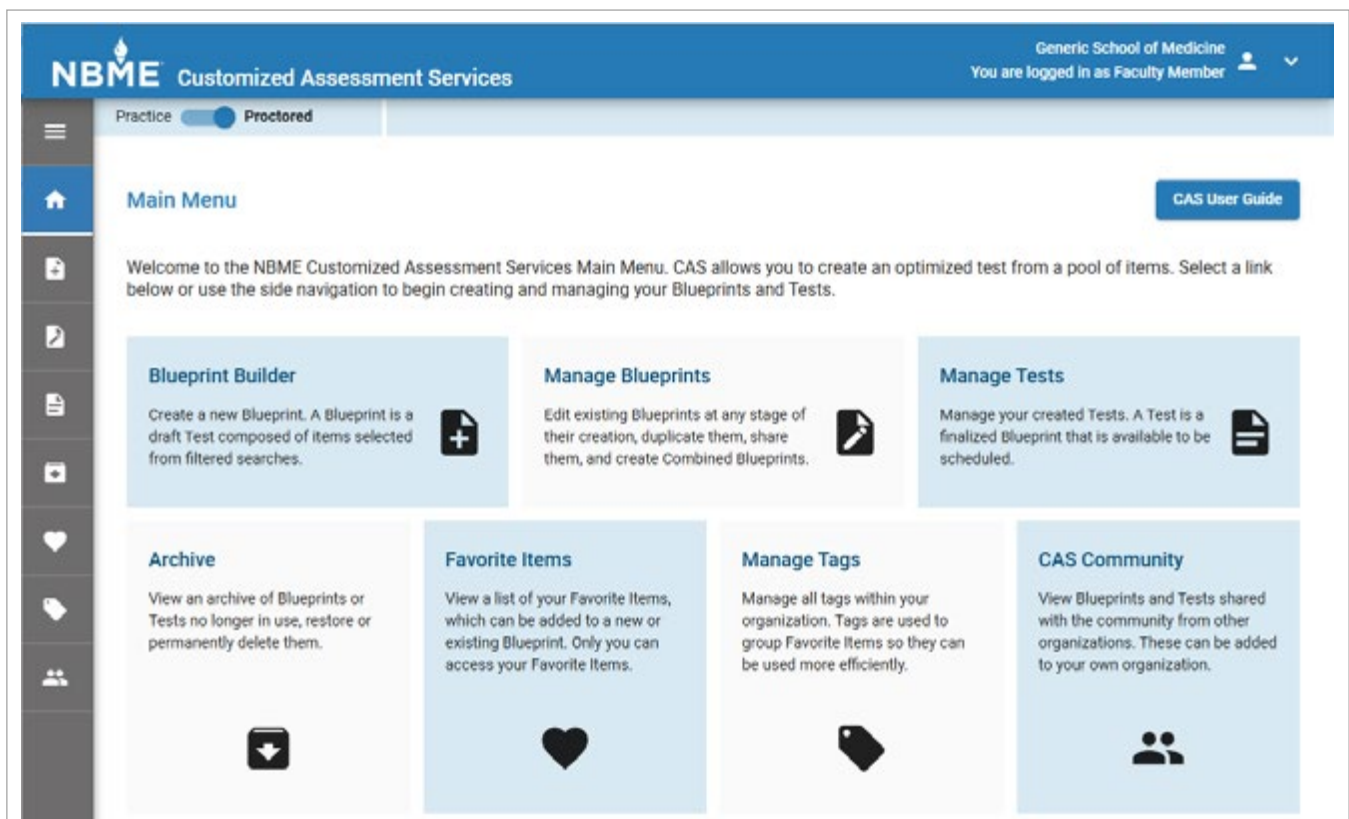
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To access the CAS system, faculty will follow NBME's security process. This validation of identity currently requires an initial configuration of a cell phone, landline, or tablet. Two-factor authentication is also used to access the Item Analysis app, which is available for review when the score reports are posted to the MyNBME Services Portal.



# TEST CONSTRUCTION ACTIVITIES

The main menu of the customized assessment test construction system is displayed below. Use the toggle in the upper left corner to switch item banks. Use icons on the left to jump between menu items. The CAS User Guide can be accessed from the button in the upper right corner of the main menu.



The components of the test construction process include:

- ▶ Build Your Blueprint
  - ▷ Create a selection of test items using a variety of filters (such as organ system, discipline, vignette type, and medication)and/or
  - ▷ Search by keyword for specific concepts and add additional filters to refine your search
  - ▷ Assign a target number of test items for each selection

The number of questions on an exam should be aligned with its purpose. Longer exams provide more precise score information. For low-stakes exams, such as quizzes, a minimum of 10 questions is recommended.

## ▶ Item Preview and Selection

Continue to the Item Preview and Selection stage to review and select your test items

- ▷ Review your item content.
  - ▶ A variety of attributes (such as item difficulty and associated source exam, default score categories, and content outline categorization) are provided.
  - ▶ You may also filter and sort test items in various ways.
- ▷ Drop and replace unwanted test items using the Refresh button, as necessary
- ▷ Create and assign any custom score categories, if desired
- ▷ Finalize your test

# ORDERING AND ADMINISTERING

## ▶ Review the Test

- ▷ The test should be reviewed in advance of the test administration as a final content check.

## ▶ Order the Test

- ▷ After the test has been finalized, it can be ordered for administration by the ECP or other medical school faculty with the Ordering Services permission. Your exam will be listed under Customized Assessment Services in the ordering system, which is accessed via the Purchasing tab in the MyNBME Services Portal.

A CAS Practice exam can be submitted at least 1 day prior to the exam start date. A CAS Proctored exam must be ordered at least 2 days in advance. The maximum test administration window is 5 days for any CAS exam.

## ▶ Setup Student Roster

- ▷ Students are added to a roster for each test administration. Rosters require email addresses for all students. Examinees added to the roster get emailed instructions with how to login to their CAS Practice exam. Email addresses are also used to link CAS score results (both CAS Proctored and CAS Practice) to their INSIGHTS dashboard.

## ▶ Examinees with Disabilities

- ▷ Individuals with disabilities may be entitled to accommodations under applicable federal and state law. If an examinee applies for test accommodations in the administration of a CAS Examination on the basis of a disability, the school will determine whether any accommodations are warranted, decide what specific accommodations may be reasonable for a particular examinee, and bear all costs associated with any such accommodation. NBME will make a good faith effort to provide such reasonable test accommodations that the school determines are warranted for the examinee.

## ▶ Accommodations for students

- ▷ Extra testing time and text enlargement - NBME has several pacing options (1.25x, 1.5x or 2x) for examinees needing extra testing time. The pacing is set in the examinee's record on the test administration roster, which alerts the system to create an extra-time form. Examinees with visual impairments can use the browser's text size feature to enlarge the font. Alternatively, examinees may also use Zoom Text Software. If an examinee would like to use their own screen magnification software, contact NBME Support to check for software compliance
- ▷ Oral Renderings - The institution follows the NBME Protocol for Oral Rendering of Subject Examinations. The person selected to read the exam to the examinee on the test day must sign the nondisclosure form provided by NBME prior to accessing any test materials. To obtain the nondisclosure form and protocol, contact [subjectexams@nbme.org](mailto:subjectexams@nbme.org).

## ▶ Test Administration

- ▷ CAS Proctored exams are only proctored and are administered locally at your institution. CAS Practice exams do not require proctoring and can be taken at any convenient location. CAS tests are not available for delivery at Prometric test centers. For more details about Test Administration, please go to the [NBME Examinations Rules and Conduct](#) page on the NBME website.

For Test administration support, examinees should contact [nbmewebtest@nbme.org](mailto:nbmewebtest@nbme.org).

# ADDITIONAL FEATURES OF CAS

**Combine Your Blueprints/Tests** This feature includes the capability to combine blueprints or tests into one exam form. For example, if you are building a test that covers content across different courses, separate exams can be generated from different blueprints and then merged into one to create a new test.

**Custom Score Categories** Create custom score categories by individually tagging test items or merging default score categories to receive extra feedback on your score reports. Score categories must contain a minimum of 20 test items to generate a numeric subscore to appear on the Percent Correct and Scaled Score Reports, and a minimum of 10 test items to generate a profile band to appear on the Individual Examinee Performance Profiles. Custom score categories appear as “content areas” on the CAS Score reports

**Item Usage** Easily see when a test item is on other blueprints and tests at your school.

**Favorites** Add items to your Favorites as you view them to create a personal repository of your Favorite Items. Use the tagging feature to Tag your Favorite items to a course, curriculum, or learning objective. Tags can also be used to blueprint and create custom score categories.

**CAS Community** The CAS Community allows you to share your blueprints and tests with all medical school faculty that use CAS. You can also view blueprints and tests posted by faculty at other schools. Blueprints and Tests posted to the CAS Community can be downloaded to use within your school, and can be edited to better fit your course or curriculum.



# SCORE REPORTING

NBME customized assessments provide institutions with a tool for measuring examinees' understanding of a series of content areas as defined by the institution. Because course objectives vary, customized assessments allow faculty to build assessments that target the specifics of a given curriculum.

NBME neither sets nor recommends a "passing" score. We encourage customized assessments be used in conjunction with other indicators of student performance to determine grades.

Percent correct scores are computed and provided for the total test and the content areas defined during the test construction process. Scaled scores are also reported for the total test and content areas when a scaling group is defined\*. Scaled scores are computed to have a mean of 70 and a standard deviation of 8 for the your defined scaling group. The scale provides a useful tool for comparing the scores of students to one another as well as identifying the relative strengths and weaknesses within the content areas defined for the exam.

Feedback is based only on the performance of students from your school who took the customized assessment. (Norm data based on a large, representative group of examinees is not available for customized assessments, since the exams are targeted specifically to an individual curriculum.) Results should not be generalized to other cohorts, either within the institution or across other institutions.

\* A scaling group is automatically created if there are at least 25 examinees. Scaling groups can also be defined through the Scaling Group Application. A scaling group excludes examinees who did not take the exam under standard pacing conditions, scored greater than 3 standard deviations below the mean, or omitted more than 10% of the items. Additionally, any examinee that is removed from the examinee group by the Chief Proctor will be removed from the scaling group.

There are three stages of score reporting:

## **1. Immediately After the Test Session Closes – Total Test Percent Correct Scores**

**CAS Proctored exams:** After the test session is ended by the proctor through the proctoring system, a roster confirmation will appear listing the examinees along with their total test percent correct scores. The percent correct mean, standard deviation, and minimum/maximum scores are also shown. The proctor may exclude any records that are invalid (e.g., if an examinee left due to illness) and then confirm the group to be submitted for final scoring.

The individual total test percent correct scores and summary statistics may be printed, downloaded to Excel, or saved as an Adobe® Reader (PDF) file.

**CAS Practice exams:** Upon completion of their exam, examinees will receive their percent correct score and have the ability to review questions and their answers.

## **2. Within 2-3 Business Days of the Test Administration Date – Full Score Reports**

Results are often posted to medical schools in the MyNBME® Services Portal the calendar day after a testing window ends or the following day. However, for some assessments, posting may take up to three business days after the conclusion of an administration for exams administered at a medical school.

NBME will send an e-mail notification to designated faculty members when the score report is posted to the MyNBME Services Portal.

### 3. Scores are available to examinees via INSIGHTS

Examinees will begin receiving their results via INSIGHTS<sup>SM</sup> three calendar days after scores are posted for their school. Therefore, examinees may receive their score report notifications from INSIGHTS as soon as four calendar days following the end of a test administration window. When results are ready, examinees will be notified via email to log in to their MyNBME Examinee Portal to access INSIGHTS and view their individual score report

Note that any changes made to a completed CAS exam that impacts scoring will first post for school review in the MyNBME Services portal for 3 days before new email notifications are sent to all students from that administration indicating that examinee feedback is available in INSIGHTS. Changes that would trigger this include question deletions, use of the CAS Scaling Group Application, or the removal of a student's record from the CAS administration.

### Final Score Components include:



- ▶ Score Reports – For both the percent correct and scaled score (if applicable) reports, three types of feedback are provided in a single PDF file:
  1. Total test and content area score descriptive statistics
  2. Total test score frequency distribution
  3. A roster containing total test and content area scores for each student
- ▶ Score Interpretation Guide
- ▶ Downloadable excel files of all reported scores
- ▶ Individual Performance Profiles (with a minimum of 25 examinees)
- ▶ Item Analysis in Two Formats:
  1. Web-based application: provides the capability to review full test item text with related item statistics online
  2. Downloadable report (PDF and CSV files): includes a short keyword description of the test item and individual item statistics.
- ▶ Insights Examinee Portal contains CAS scores directly to examinees

Components of the score report and information about the performance profiles and test item analysis are described in the table on page 11.

# FINAL SCORE COMPONENTS

Component	Description	Minimum # Examinees Required to Receive
<p><b>Percent Correct Score Report</b></p> <p>PDF format Excel format (score roster only)</p>	<p>For the total test and content areas with a minimum of 20 items:</p> <ul style="list-style-type: none"> <li>▶ Score Interpretation Guide</li> <li>▶ Roster of percent correct scores</li> <li>▶ Descriptive statistics: number of items, mean, standard deviation (SD), lowest score, highest score</li> <li>▶ Standard error of measurement (SEM) and reliability with a minimum of 10 examinees</li> <li>▶ Frequency distribution of total test percent correct scores</li> </ul> <p>NOTE: Descriptive statistics are reported for the total group. If a scaling group was defined for the test administration, then reliability and SEMs are reported based on the scaling group.</p>	<p><b>1</b></p> <p>(based on the total group, which includes all examinees)</p>
<p><b>Scaled Score Report</b></p> <p>PDF format Excel format (score roster only)</p>	<p>For the total test and content areas with at least 20 items:</p> <ul style="list-style-type: none"> <li>▶ Score Interpretation Guide</li> <li>▶ Roster of scaled scores (mean 70, SD 8)</li> <li>▶ Descriptive statistics: mean, SD, low score, high score</li> <li>▶ Frequency distribution of total test percent correct scores</li> </ul> <p>NOTE: Descriptive statistics are reported for the total and scaling groups. Reliability and SEMs are based on the scaling group defined for the test administration.</p>	<p><b>25</b></p> <p>(based on the scaling group: students taking the exam on the same date and/or an earlier date †)</p> <p>† A scaling group excludes examinees who did not take the exam under standard pacing conditions, scored &gt;3 SDs below the mean, or omitted more than 10% of the items. Additionally, any examinee that is removed from the examinee group by the Chief Proctor will be removed from the scaling group.</p>

## Final Score Components (continued)

Component	Description	Minimum # Examinees Required to Receive
<b>Item Analysis (IA)</b>  PDF format Excel format	<p>Summary results: number of items, mean item difficulty, and mean item discrimination by content area</p> <p>Item-by-item results: source exam, content area classification, keyword description, level of difficulty (p-value) for your examinees, level of difficulty for the source exam, difference between the difficulties, and discrimination index</p> <p>NOTE: If a scaling group is defined for a test administration, then the IA statistics are based on the scaling group. If a scaling group is not defined, then the IA is based on the total group.</p>	<p><b>10</b> for item difficulty</p> <p><b>40</b> for item discrimination*</p> <p>*Standard exemptions for scaling groups will apply.</p>
<b>Item Analysis app</b>  For CAS Proctored exams, only available for faculty and cannot be shared with examinees.  For CAS Practice exams, accessible only by faculty and can be reviewed with individual or groups of examinees for post-administration exam reviews.	<p>Item-by-item results:</p> <ul style="list-style-type: none"> <li>▶ complete item text</li> <li>▶ % of examinees answering each option</li> <li>▶ difficulty (p-value)</li> <li>▶ discrimination index</li> <li>▶ national p-value based on previous use of the item in USMLE and/or subject exam</li> </ul>	<p><b>10</b> for item difficulty</p> <p><b>40</b> for item discrimination*</p> <p>*Standard exemptions for scaling groups will apply.</p>
<b>Individual Examinee Performance Profiles</b>  PDF format bundled in WinZip file	<p>Graphical profile for each examinee that shows:</p> <ul style="list-style-type: none"> <li>▶ total test scaled and percent correct scores</li> <li>▶ horizontal bands displaying areas where performance was lower, average, or higher in relation to the scaling group to help identify areas of strength and weakness</li> </ul>	<p><b>25</b></p> <p>(based on the scaling group)</p>
<b>Examinee Question Level Feedback</b>  Excel Format	<ul style="list-style-type: none"> <li>▶ Provides information on the performance of each examinee on each item, including item-level content keywords and difficulty statistics from the source exam.</li> </ul>	<p><b>1</b></p>

## Final Score Components (continued)

Component	Description	Minimum # Examinees Required to Receive
<p><b>INSIGHTS Dashboard</b></p> <p>Examinee login through MyNBME Examinee Portal</p>	<p>This dashboard enables students to review detailed score feedback on their CAS exams and provides a more complete picture of performance across different NBME assessments in one convenient location.</p> <p>Examinee feedback includes 3 tabs (My Exams, Exam Results, Question Details) of information, including:</p> <ul style="list-style-type: none"><li>▶ Test date</li><li>▶ Exam name</li><li>▶ Total test percent correct score</li><li>▶ Individual Examinee Performance Profile (if the criteria for generating profiles are met)</li><li>▶ Question details for correct and incorrect responses<ul style="list-style-type: none"><li>▷ Physician competency</li><li>▷ Content topic</li><li>▷ Content description</li></ul></li></ul> <p>NOTE: If a scaling group is defined for a test administration, then the IA statistics are based on the scaling group. If a scaling group is not defined, then the IA is based on the total group.</p>	<p>1</p>

# SCALING GROUP APPLICATION

Because scores for customized assessments are locally scaled for each test administration, examinee scores cannot be directly compared across multiple administrations of the same examination. A Scaling Group Application (SGA) is available to link these administrations for comparison purposes. The SGA, accessed through the MyNBME Services Portal, is available to institutions with active subscriptions to CAS.

## CONTACT US

Please feel free to contact us at [support@nbme.org](mailto:support@nbme.org) if you have any questions. NBME staff can provide the information you need or help solve a problem.

