



NBME[®] SUBJECT EXAMINATIONS

PROGRAM GUIDE

Measure Student Knowledge
and Access National Normative Data



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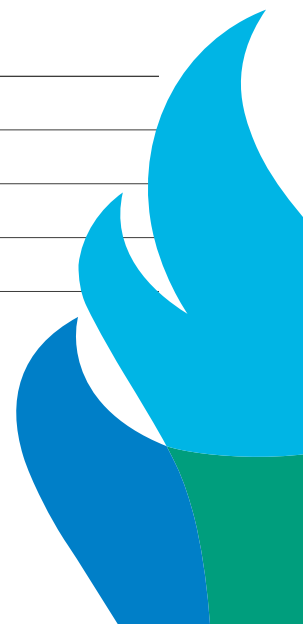
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OVERVIEW AND REGULATIONS FOR USE OF SUBJECT EXAMINATIONS

This guide provides general information about the Subject Examination program offered by NBME.

Mission and Background

- ▶ NBME offers standardized, objective, discipline-based exams for use in assessment throughout the medical school curriculum. The exams are designed to provide institutions with effective evaluation tools and useful examinee performance data that can be compared with a large representative group of examinees at the same stage of training.
- ▶ The subject examination program serves medical educators by providing high-quality assessment tools and feedback to track their students' progress toward learning during their medical education journey.

Benefits

- ▶ Twenty-seven individual exams are available for administration across various disciplines from first to fourth-year undergraduate medical education.
- ▶ Subject Exam forms are pre-built, easy to administer and help you save the time and resources that go into creating your own assessment.

- ▶ All items are written and reviewed with the same rigor used to create USMLE® Step 1 and Step 2 items.
- ▶ The exams provide national norms and relevant descriptive information. These norms reflect the performance of examinees from medical schools accredited by the Liaison Committee on Medical Education (LCME).

Policy on Use of Subject Examinations

NBME provides Subject Exams in the basic and clinical sciences for the purpose of assessing the educational achievement of individuals in specific content areas. These exams may be provided to medical schools and other institutions with a legitimate interest in the education of physicians or other health professionals. All institutions using these exams must comply with test administration standards, including security protocols.

Subject Exams are designed primarily for use as final exams after courses, clerkships, or other units of instruction. Scores achieved on NBME Subject Exams cannot be used by examinees for credit toward the examination requirements for medical licensure in the United States.



Legal Compliance

An institution is not authorized to use the NBME Subject Examinations if the institution is (a) located in a country that is subject to a US government embargo, or that has been designated by the US government as a “terrorist supporting” country; or (b) listed on any US government list of prohibited or restricted parties. In addition, institutions are not authorized to administer any NBME Subject Examination to any individual who is listed on any US government list of prohibited or restricted parties.

Research/Publications

To ensure the integrity, security, fairness, and effectiveness of NBME assessments, NBME analyzes data derived from and submitted in conjunction with its examinations. The examination data may be used by NBME for conducting its research and for other purposes consistent with NBME’s Privacy Notice. NBME may also use examination data to conduct and publish research for the betterment of medical education and to advance the sciences of psychometrics, measurement, and statistics. NBME research submitted for publication is subject to independent Institutional Review Board (IRB) approval consistent with the requirements of peer

reviewed journals. In all instances, the data will be kept confidential, and no institution or examinee will be identifiable in any publication. Examinees can update their preferences in their MyNBMESM User Profile. If a school wishes to use NBME Subject Examination data for any research project, publication or presentation, it must obtain NBME’s prior written authorization.

Security of Examinations

To ensure the integrity of the NBME Subject Examination program and the validity of the scores reported, it is essential to maintain the security and confidentiality of test materials at all times. All items used in NBME Subject 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 Subject Examination services in the event of a breach or suspected breach in the security of test materials.



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EXAMS

available
across various
undergraduate
medical education
disciplines

SUBJECT EXAMINATION CONTENT

The subject exams cover content which measures learning and knowledge across different disciplines from first year to fourth year of undergraduate medical school.

Subject Exam content outlines are developed by NBME committees of content experts that are used to construct each test. Items are selected based on content and performance statistics. The final form of each exam is reviewed and approved by the appropriate committee chair prior to release. For more information, go to <https://www.nbme.org/about-nbme/our-collaborations/item-co-creation>.

All subject exams must be administered in a secure, proctored environment.

Basic Science

The Basic Science examinations are used to assess first- and second-year medical students' end-of-course knowledge in a discipline-based curriculum. They are also administered as an additional tool to help students with remediation in specific content areas after taking the Comprehensive Basic Science Examination (CBSE).

- ▶ Behavioral Science
- ▶ Biochemistry
- ▶ Gross Anatomy only
- ▶ Gross Anatomy + Embryology
- ▶ Histology
- ▶ Introduction to Clinical Diagnosis
- ▶ Microbiology only
- ▶ Microbiology + Immunology
- ▶ Neuroscience
- ▶ Pathology
- ▶ Pharmacology
- ▶ Physiology

Clinical Science

The Clinical Science subject exams are used to assess third-year medical students' knowledge in specific disciplines at the end of traditional clerkships. NBME works with task forces made up of medical school faculty who review the content outline, write/review items and adjust the exams' blueprints based on updates to national curricula.

- ▶ Ambulatory Care
- ▶ Clinical Neurology
- ▶ Family Medicine
 - ▷ Core
 - ▷ Core + Chronic
 - ▷ Core + Chronic + Musculoskeletal
- ▶ Medicine
- ▶ Obstetrics and Gynecology
- ▶ Pediatrics
- ▶ Psychiatry
- ▶ Surgery



Comprehensives

The Comprehensive subject exams measure progress and readiness for students about to take USMLE Steps 1 and 2; the exams and their feedback help identify students' weaknesses prior to taking Steps 1 and 2. The exams must be administered securely and are not intended to be used for practice purposes.

- ▶ Comprehensive Basic Science
- ▶ Comprehensive Clinical Science

Advanced Clinical Science

The Advanced Clinical Science subject exams are used to assess content knowledge either in fourth year, sub-internship or residency programs.

- ▶ Emergency Medicine
- ▶ Internal Medicine

Health Systems Science

NBME worked with the American Medical Association to develop and pilot the Health Systems Science Examination in collaboration with medical faculty experts in Health Systems Science. Faculty can use this high-quality, standardized assessment tool to support the implementation of Health Systems Science curricula and educational initiatives. Together with clinical and basic science instruction, Health Systems Science prepares medical students for effective clinical practice.

Content Outlines

Content outlines and sample items for each subject exam are available on [nbme.org](https://www.nbme.org), Subject Exams, Resources.

Exam Preview

Exam Preview is a free service which allows medical school faculty to preview representative content for a specific subject exam so they can determine whether that exam is appropriate for a particular class/curriculum. Exam Preview is open to medical school faculty and to authorized staff of other approved medical education institutions. To schedule a preview session, contact the Executive Chief Proctor at your medical school.

REPORTED SCORES

Equated Scores

- ▶ Provide a consistent way to measure performance on multiple exam forms administered at the same or different times by statistically adjusting for slight variations in exam form difficulty.
- ▶ Ensure that all scores have the same meaning on different forms of the same exam.
 - ▷ Equated percent correct scores reflect an examinee's mastery of the content domain, calculated as a percentage of items in the total content domain that would be answered correctly based on an examinee's proficiency level.
 - ▷ Equated scaled scores are scaled to the performance of a reference group of examinees from medical schools accredited by the LCME. The reference group consists of students who took the exam for the first time under standard testing conditions.

Percent Correct Scores

- ▶ Percent correct scores are provided for new exams that have not yet been administered to a sufficient number of examinees for equating.
- ▶ Score feedback is limited until sufficient data have been obtained.
- ▶ Once sufficient data have been obtained for equating, equated score feedback will be generated and posted to the portal.



SCORE REPORTS

All scoring feedback, norms, and grading guidelines may be accessed through the MyNBME Services Portal.

Web-Based Administrations at Your Institution:

Score reports posted to the portal within 2-3 business days following close of test session.

Web-Based Prometric Administrations:

Score reports posted to the portal within 2-3 business days after close of testing window.

A brief description of the various types of score reports and associated downloadable text files is provided below. Please visit nbme.org, Subject Exams, Score Reports for more details and score report samples.

Score Interpretation Guide

- ▶ Provides detailed information about the computation of scores, the contents of each type of score report and the contents of downloadable data files.
- ▶ It is included with the Roster Report and can also be accessed separately on the portal under the Score Reports tab.

Roster Report

- ▶ Provides the total score for each examinee and descriptive statistics for the administration. A downloadable roster text file includes the total score and content area scores for each examinee.

Content Area Report

- ▶ Available for any Subject Exam administration with at least 5 examinees and for which equated scores are available.
- ▶ Provides information on the performance of your examinees and a national group of examinees on the major content areas on the exam.

Item Analysis Report

- ▶ Available for any Subject Exam with at least 5 examinees testing during a single form administration and for which equated scores are available.
- ▶ Provides information on the performance of your group of examinees and a national group of examinees on each item.
- ▶ Helpful in determining the extent to which your examinees have learned the content of individual items.
- ▶ Provided for institutional use in assessing the performance of examinees. The written authorization of NBME must be obtained prior to any additional use of the data (e.g., in research papers).

Examinee Performance Report

- ▶ Provides information about overall performance and performance on major content areas on the exam for each examinee.
- ▶ Intended for distribution to examinees as an aid in self-assessment.

Examinee Question-Level Feedback Report

- ▶ Provides information on the performance of each examinee and a national group of examinees on each item.
 - ▷ Available for any Subject Exam administration with at least 5 examinees and for which equated scores are available.
- ▶ Intended for distribution to examinees as an aid in self-assessment.

Norm Table

- ▶ Provides information enabling you to compare your examinees' performance with a nationally representative group of examinees from LCME-accredited medical schools at the same stage of training.
- ▶ The most recent norms for each exam are included with the score reports and can also be accessed separately on the MyNBME Services Portal along with earlier norms (when available) under the Score Reports tab.

Grading Guidelines

- ▶ Available for all Clinical Science subject exams and the Emergency Medicine Advanced Clinical Science subject exam to assist clerkship and course directors in determining passing and honor grades for their examinees.
- ▶ NBME facilitates a review of the guidelines with faculty members to update and ensure the continued appropriateness of the guidelines every two to three years.

Year-End Report

- ▶ Available for all Clinical Science and Advanced Clinical Science subject exams.
- ▶ Provides summary information regarding the performance of examinees from your institution in relation to several national comparison groups based on the most common clerkship rotation lengths for each discipline.

Test Delivery Options

Web-Based Examinations at Your Institution

All subject examinations are available for administration at your institution. Web-based exams must be administered in a secure, proctored setting. NBME provides a web-based utility that checks both hardware and software configurations and downloads a plug-in that secures the browser. The computer is locked down, preventing the examinee from accessing applications such as e-mail or notepad. It also includes a function designed to detect any recording applications and programs that may be running on workstations or examinees' personal laptops prior to the start of the exam.

Web-Based Examinations at Prometric Test Centers

The Clinical Science (except Ambulatory Care), the Emergency Medicine Advanced Clinical Science Exam, and Comprehensive Subject Examinations are available for administration at Prometric's worldwide network of secure test centers. Prometric testing may be preferred for students serving on clinical rotations in a distributed hospital network or for those located at a site without web-based test delivery capability. It may also be useful for makeup tests. This option requires advance planning to allow students sufficient time to schedule testing appointments.

NBME Subject Examinations

Basic Science	<ul style="list-style-type: none"> ▶ Behavioral Sciences ▶ Biochemistry ▶ Gross Anatomy only ▶ Gross Anatomy + Embryology ▶ Histology ▶ Introduction to Clinical Diagnosis 	<ul style="list-style-type: none"> ▶ Microbiology only ▶ Microbiology + Immunology ▶ Neuroscience ▶ Pathology ▶ Pharmacology ▶ Physiology
Clinical Science	<ul style="list-style-type: none"> ▶ Ambulatory Care ▶ Clinical Neurology* ▶ Family Medicine Modular* Core ▶ Core + Chronic Care ▶ Core + Chronic Care + Musculoskeletal 	<ul style="list-style-type: none"> ▶ Medicine* ▶ Obstetrics and Gynecology* ▶ Pediatrics* ▶ Psychiatry* ▶ Surgery*
Health Systems Science Examination	<ul style="list-style-type: none"> ▶ Health Systems Science 	
Advanced Clinical Examinations	<ul style="list-style-type: none"> ▶ Emergency Medicine* ▶ Internal Medicine 	
Comprehensive Examinations	<ul style="list-style-type: none"> ▶ Comprehensive Basic Science* ▶ Comprehensive Clinical Science* 	

* Available for Administration at Prometric Test Centers

Scheduling Web-based Exams at Prometric Test Centers

After the test administration roster has been created for a web-based exam at a Prometric test center, NBME generates a scheduling permit for each examinee in approximately 2-3 business days. There are exceptions if the examinee requires test accommodations (See page 13). Each examinee will receive an e-mail from NBME with a URL to access and print/download their scheduling permit. Information printed on the scheduling permit is required to schedule a testing appointment through Prometric's website. The permit also has information about admission to the test center, cancelling/rescheduling appointments, and other policies and procedures.

Web-Based Administrations

Web-Based Administrations Through Your Institution	<ul style="list-style-type: none"> ▶ Orders may be placed up to and including the 2nd calendar day prior to the test date. ▶ Orders lock 2 calendar days before the test date.
Web-Based Prometric Administrations	<ul style="list-style-type: none"> ▶ A testing window of 7-14 calendar days is required. ▶ Orders must be placed no later than 28 days prior to the start of the testing window. ▶ Orders lock 21 calendar days prior to the start of the testing window.

MyNBME Services Portal

Services and reports related to Subject Exams are available through the MyNBME Services Portal. This is a secure website and a primary source for authorized users to obtain information about their students for a variety of activities related to USMLE, NBME Subject Exams, and other services.

Test Administration Support

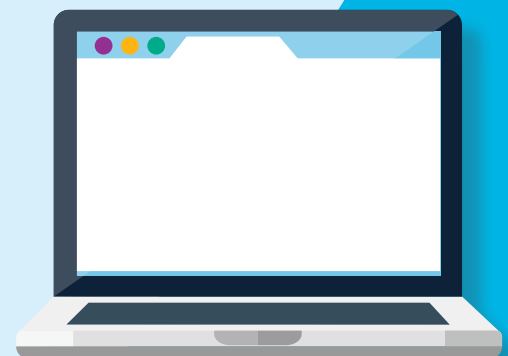
Web Examinations at Your Institution

NBME staff will be available for support on scheduled test dates to respond to technical or procedural issues that may arise. NBME staff are available 24 hours a day, 7 days a week by calling 215-590-9298 (exclusive of NBME holidays).

Web Administrations at Prometric Test Centers

Prometric test center staff will administer NBME examinations in a secure setting and respond to any technical or procedural issues. Information about Prometric test centers is available at www.Prometric.com

OBTAIN INFORMATION ABOUT STUDENT ACTIVITIES RELATED TO USMLE, NBME SUBJECT EXAMS, AND OTHER SERVICES BY USING THE **MyNBME SERVICES PORTAL.**



TEST ACCOMMODATIONS

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 Subject 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.

Oral Rendering of a Web Examination

The institution must follow the NBME Protocol for Oral Rendering of Subject Examinations. The person selected to read the Subject 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.

Extra Testing Time and Text Enlargement for Local Administration of Web Examinations

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 may use their own screen magnification software or use the browser's text size feature to enlarge the font.

Accommodations at Prometric Test Centers

It is possible to arrange for examinees to take an examination with test accommodations (e.g., extra testing time) at a Prometric test center. Orders should be placed as far in advance as possible because generating these scheduling permits could take up to two weeks. Examinees who need accommodations cannot schedule their testing appointments online. Their permits will provide instructions to call Prometric to schedule their testing appointments. A separate fee will be assessed after scores have been reported for an accommodation requiring a separate room.



ADDITIONAL INFORMATION

Agreement Analysis for Irregular Testing Behavior

An agreement analysis may be requested and conducted for examinees suspected of irregular testing behavior, such as copying or collaboration. Agreement analysis is a statistical tool that can provide helpful, supportive information for the investigation of observed behaviors that may compromise the validity of examinees' scores. The agreement analysis compares the degree of agreement that is observed between the incorrect responses of two examinees (pair) with the degree of agreement that would be expected to occur between two randomly chosen examinees taking the same examination independently. Agreement analysis uses only those items that both examinees in the pair answered incorrectly.

Any actions taken by an institution on the basis of such information are completely the responsibility of the institution.

Score Recheck Service

NBME is confident that each reported Subject Exam score is an accurate reflection of the responses that an examinee recorded in the testing interface for web-based exams.

This is based on reliable scoring and reporting techniques backed by a variety of quality control and verification procedures.

However, if a score is believed to be in error, a review of the response record generated for a web exam can be requested.

Requests for score rechecks must be initiated by the institution, either by the ECP or appropriate staff (e.g., course or clerkship director) in the department administering the test. Payment is not accepted from examinees. A Score Recheck Request form is available to download from the [NBME website](#).

Once the score recheck is complete, an invoice showing a charge of \$25.00 will be available under the order number associated with the examination. The invoice can be found on the Medical School Online Ordering System (MSOS) under View/Change Orders. The invoice is payable using the My Billing Accounts portlet with the following options: available credit, a credit card, or check. If paying by check, make the check payable to National Board of Medical Examiners and include a copy of the invoice with your payment.

Results are provided approximately two weeks after receipt of the request. It should be noted that the sole purpose of the score recheck service is to verify that the score originally reported is correct. Score recheck requests may be made up to six months after the test date. Score recheck requests received after that time cannot be accommodated.

ACCURATE AND RELIABLE SCORING
AND REPORTING TECHNIQUES ARE
BACKED BY A VARIETY OF QUALITY
CONTROL AND VERIFICATION
PROCEDURES.



ADDITIONAL RESOURCES

The resources listed below are available online at www.nbme.org:

- ▶ Administration of NBME Examinations at Prometric test centers
- ▶ Arranging for and Administering an NBME Web-Based Exam
- ▶ Fees, payment options, and policies
- ▶ Sample score reports
- ▶ Subject Examination Timing Chart
- ▶ Subject Examination Content Outlines and Sample Items

CONTACT US

Please feel free to contact us if you have any questions. NBME staff can provide the information you need or help solve a problem.

NBME Contact List

NBME Billing Accounts and Invoice Questions Only	▶ NBMEAccounts@nbme.org
Operational Support for Web-Based Subject Exams (questions about ordering exams, faculty review, test accommodations, Prometric administrations, proctoring, exam security, scoring issues, test administration, etc.)	▶ SubjectExams@nbme.org ▶ 215-590-9258
All Other Inquiries	▶ support@nbme.org