

BACE

Biotechnician
Assistant
Credentialing
Exam



CANDIDATE INFORMATION BULLETIN FOR REMOTE TESTING

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Introduction to the BACE

Earning your Biotechnician Assistant Credential demonstrates a solid foundation in the knowledge and skills needed in today's biotech workforce. Whether your objective is to work in academia or private industry, this credential proves to your future employers that you have dedicated time and effort to become the best in your field.

The Biotechnician Assistant Credential is an industry-recognized credential designed to verify that a candidate (which is you) has mastered the foundational concepts and skills identified by the bioscience industry as valuable in a workplace setting. To earn the credential, you must demonstrate proficiency in biotechnology theory and techniques by passing the Biotechnician Assistant Credentialing Exam (BACE). The BACE is offered through Biotility at the University of Florida's Center of Excellence for Regenerative Health Biotechnology (UF CERHB).

The BACE consists of two portions. The BACE Knowledge and Practical portions are administered as one online assessment delivered on the University of Florida's education platform, UF e-Learning, and remotely monitored by ProctorU. For a detailed look at the structure and topics covered on the BACE, please refer to the [Exam Specifications](#) provided in this document.

Heads-up!

An access code prevents entry into the exam until you have connected through the third-party remote monitoring platform, ProctorU. For a list of all actions required prior to starting your test, please review [Enrollment Process](#), [Testing Requirements](#), and [Exam Startup](#).

Administration Options

Candidates have various administration options for the BACE, and this Candidate Information Bulletin focuses on the Remote Testing Option. With this choice, the exam is taken in a quiet home environment or a private space like a library or study room. ProctorU serves as the third-party remote proctor. If you encounter technical challenges with ProctorU, please [contact them](#) for assistance. If the issues cannot be resolved, our team is ready to discuss alternative live-proctor testing options that may better suit your needs. Keep in mind that live testing options may have limitations in terms of location and availability of testing dates.

Policies

Exam Attempts and Retakes

Candidates can take the exam up to three times within a calendar year. Free retakes are allowed for candidates who failed the BACE and wish to retake the exam a second time before the end of the calendar year. However, for a third attempt, there is a fee of \$50.00. Exams taken after the conclusion of the calendar year revert to the full cost. Additionally, candidates must observe a waiting period of 20 calendar days between attempts. Please note that if you are switching administration methods from

either the Paper and Pencil Testing Option or the Computer-based Testing Option to the Remote Testing Option, the cost of the second attempt is \$25.00. This fee covers the cost of ProctorU's remote monitoring services.

Cancellations and Refunds

Candidates have a 2-day grace period from the date of enrollment to drop their course and receive a full refund. To initiate the drop, candidates must follow the designated procedure within UF's PWD Destiny One System or email their request to BACE@research.ufl.edu. Refunds for eligible drops will be processed promptly, and no refunds will be granted for drops requested after the 2-day grace period or if the candidate has accessed the exam associated with the course.

Candidates facing technical challenges preventing them from accessing the exam may choose to transfer their fees to a live-testing event or submit an appeal to cancel their order and receive a full credit. Requests can be sent to BACE@research.ufl.edu. These requests will be processed within two weeks, and candidates will receive notifications regarding the appeal decision, ensuring they are kept informed throughout the process.

How Your Score is Calculated

To pass the BACE and earn your Biotechnician Assistant Credential, you must achieve an overall score of 80%. Candidates may see their score results through UF e-Learning. Official Score Reports are sent within two (2) weeks of processing.

Obtaining Credential Certificates and Records

Within two (2) weeks of passing the BACE, electronic credentials are issued. Electronic credentials are issued as a digital certification and a badge from Accredible. These credentials may be displayed on Facebook or LinkedIn, and digitally verified online by anyone. For more information, review the [Digital Credentials](#) section of this document.

Score Release Request

To request the release of your BACE scores to a specific institution or individual, please follow these steps: Send an email to BACE@research.ufl.edu with the subject line "BACE Score Release Request." Clearly state the name of the institution or individual you would like your score sent to and provide their accurate email address. Include personal identification details, such as your full name and BACE candidate ID, to verify the request. The request must be received from the email address we have on file for you.

Once received, we will acknowledge your request and initiate the verification process. Please allow two (2) weeks for the completion of your score release request.

Accommodating persons with disabilities/IEP

If you have disabilities or require an Individualized Education Program (IEP), you are eligible for exam accommodations under the Americans with Disabilities Act (ADA). The ADA recognizes various types of accommodations to ensure equal opportunities for individuals with disabilities. These accommodations may include, but are not limited to:

- Extended Testing Time: Additional time for completing the exam
- Assistive Technology: Access to specific tools or technology
- Reader or Scribe Assistance: Support with reading or writing
- Alternative Formats: Providing materials in accessible formats

It is crucial to coordinate all accommodations before the testing date. Accommodations may be requested by sending an email to BACE@research.ufl.edu, at least two weeks before your preferred exam date.

Review and Appeals Process

Any candidate whose scores have been withheld, is denied access to certification, or whose certification has been revoked or suspended has the right to appeal the decision. Biotility has an established review and appeals process for candidates seeking an amendment of this decision. This process offers candidates the opportunity to have concerns heard in a fair, objective forum. However, candidates will not be entitled to receive a copy of either the certification examination or the answers to any questions on the examination. Appeal requests must be submitted in writing to BACE@research.ufl.edu within ninety days of testing.

Exam and Candidate Integrity

Academic Honesty

BACE candidates are expected to behave ethically and honorably. Academic dishonesty includes any action (received or given) that creates an unfair advantage on the exam. Examples of academic dishonesty include but are not limited to:

- Accepting or giving assistance to another candidate during the exam
- Discussing specific exam questions with another candidate or individual
- Copying, photographing, recording, posting, or reproducing exam content in any fixed medium
- Using stolen exam content to prepare for the exam

Academic dishonesty may be reported anonymously to Biotility. To report academic dishonesty to Biotility, contact us at [386-462-3181 Option #1](tel:386-462-3181) or BACE@research.ufl.edu.

Ensuring Credential Validity

Biotility protects the validity of its credentials by protecting the content of its exams. The Biotechnician Assistant Credentialing Exam (BACE) is the intellectual property of Biotility and the University of Florida and copyrighted under the laws of the United States.

Biotility uses the following advanced test security techniques and procedures to actively defend its intellectual property:

- Remote proctoring through ProctorU Live+
- Internal review of ProctorU room scans
- Internal review of ProctorU testing sessions

- Eye movement detection indicating a secondary device
- Data forensic analysis
- Anonymous academic dishonesty reporting
- Candidate Agreements (See details in the [Candidate Agreement](#) section)

Biotility reserves the right to withhold exam results or invalidate credentials when evidence of a testing abnormality is detected or reported. Biotility may also elect to pursue all available civil and criminal remedies if its intellectual property rights are violated.

Registration and Enrollment

Orders must be placed *a minimum of four (4) days* in advance of your preferred exam date. Candidates are encouraged to order at least one (1) month in advance to ensure you have time to complete the technical requirements and fully utilize the BACE Practice Exam Course. Payment is collected at the time of ordering. **First attempts must be taken within 180 days of ordering. Second and third attempts must be taken with 90 days of ordering.**

BACE Exam Fees

| Item | Fees |
|-----------|--|
| Attempt 1 | \$200.00 |
| Attempt 2 | Free OR \$25.00 if changing administration methods |
| Attempt 3 | \$50.00 |

What to expect after ordering:

- Same day order confirmation
- Same day access to UF e-Learning, including the BACE Practice Exam Course

Enrollment Process

Candidate enrollment into Biotility courses and exams within UF e-Learning is managed through UF Professional and Workforce Development (UF PWD). This section provides step-by-step instructions for completing the candidate enrollment process for both new and existing users through UF PWD's Destiny One system. However, to log in to an existing enrollment please refer to the instructions provided under [Log in to UF e-Learning](#).

Candidate Enrollment

1. Navigate to [Biotility's BACE Individual Registration Course Page](#)
2. On the Course Page:
 - a. Review the Course Description.
 - b. Select the orange plus (+) next to the course offering.
 - c. Select **Add to Cart**.
3. In the Cart View:
 - a. If appropriate, select **Apply a discount** and enter the Coupon Code.
 - b. Select either **Checkout** button to proceed.

Account Creation or Confirmation

4. Select the desired social account type and sign in to the associated account (Google, LinkedIn, or Microsoft).
5. Follow the prompts to determine if you have an existing Destiny One account or if you need to create one.
 - **New Users:** Enter the required account information (Name and Email, Address and Telephone, and Marketing Preferences).
 - **Existing Users:** Note: Existing users will see their previously entered information populate – confirm that none of the information has changed.
6. Select **Submit** to save your information.

Checkout Process

7. Select the **Cart** icon on the top center of the screen to begin the checkout process.
8. On the Checkout Page:
 - a. Confirm the information on screen is correct, then select **Continue Checkout**.
 - b. Answer the Questionnaire.
 - c. Read the Policy Confirmation, then select **Accept**.
 - d. Select **Continue Checkout**.
9. You will be redirected to the Receipt page. A copy of your receipt and registration confirmation will be sent to the email address on file shortly.

Tips for Enrolling & UF e-Learning Account Creation

- If you do not have an existing social account (i.e., Google, LinkedIn, or Microsoft account), you will need to create one.
- Use a social account you can access from your testing location.
- If you have multiple social identities, use the social account connected to your true identity. The account:
 - Must be under your legal name
 - Should have personal information correctly spelled and capitalized
- When providing new personal information to Biotility, always use your legal name and proper capitalization and punctuation.
- Always use the same social account to enroll, create an account, and log in.
- Preferably, use a social account you will have access to for years to come. If using a school account, make plans to update your contact information with Biotility prior to losing access when you graduate.

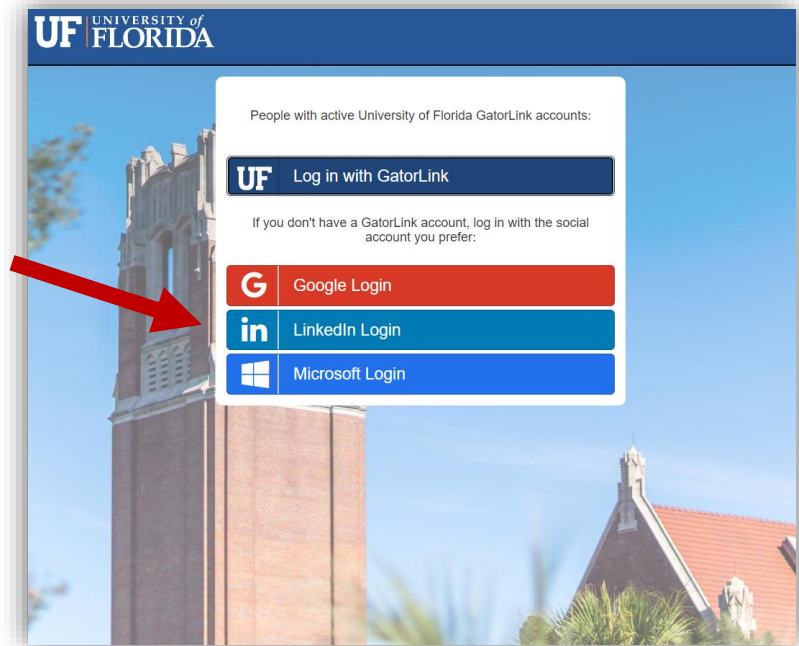
Troubleshooting

- Not receiving our verification emails? Check your spam folder or update your email settings to allow emails from the following domains.
 - @ufl.edu
 - @cerhb.ufl.edu
 - @research.ufl.edu

Log in to UF e-Learning

To access courses you are enrolled in, follow the steps below:

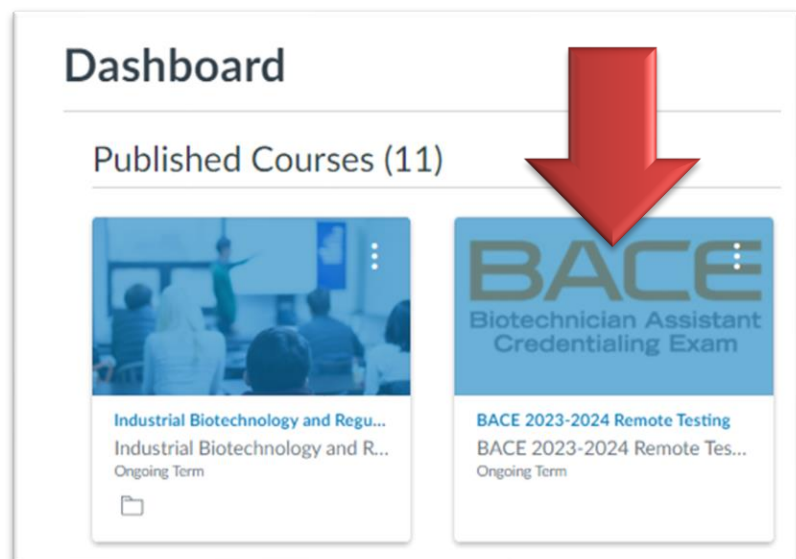
1. Go to the [UF e-Learning](#) webpage.
2. Select **Log In To Continuing Education**.
3. Sign in with the social account you enrolled through.
4. Once in UF e-Learning, select the appropriate course tile from your dashboard.



Exam Administration Process

The BACE is given on the University of Florida's education platform, UF e-Learning. After completing the candidate enrollment process and logging in to UF e-Learning, go to your dashboard and select the **BACE 2023-2024 Remote Testing** tile. It is important to note that the BACE Practice Exam, or other courses, may also appear on your dashboard, so ensure you select the correct tile.

Once in the course, candidates should follow the instructions on the Home Page, which includes information on Essential Candidate Resources, Exam Preparation, and Exam Startup.



Pre-exam Requirements

You **MUST** complete the following steps **at least three business days** prior to your preferred testing date.

Within the UF e-Learning course:

- Carefully review the [Testing Requirements List](#), as it includes various items or actions that may require a significant amount of time to obtain or complete.
- Complete the [Candidate Agreement](#).

Within ProctorU:

- [Create an account and schedule your exam](#)
- [Download the Guardian Browser](#)
- [Test your equipment](#)
- [Exam Day \(What to expect\)](#)

Testing Requirements

To ensure the optimal testing experience, please carefully review and adhere to the listed testing requirements. Taking steps to meet these requirements well in advance of your preferred exam date will ensure the overall quality of your exam day experience. **If you encounter technical challenges with ProctorU, please contact them for assistance. If the issues cannot be resolved, our team is ready to discuss alternative live-proctor testing options that may better suit your needs. Keep in mind that live testing options may have limitations in terms of location and availability of testing dates.**

Please be aware that in general remote monitoring will require you to:

1. Use a computer with a camera and microphone
2. Download ProctorU's applications (Guardian Browser and Support-LogMeInRescue)
3. Present a government- or school-issued photo ID
4. Perform a detailed room scan before and after each test session

Examinees are responsible for making the preparations listed below. Please complete the full list to ensure that you can start the exam during your scheduled appointment with ProctorU. All items are required unless noted.

Registration and Identity Requirements

- Your name in UF e-Learning and ProctorU must exactly match your name on your preferred ID.
 - When creating your account with UF e-Learning and ProctorU, if you have multiple last names, a hyphenated name, or a suffix on your government-issued photo ID, you should provide them during the account creation process. Nicknames are NOT permitted.

- Before scheduling your exam, verify that your first and last name in UF e-Learning and ProctorU **exactly match** your ID. You can verify your name in UF e-Learning by selecting **Account** in the left menu. To verify your name in ProctorU, refer to the scheduling confirmation notice or sign in to ProctorU and check your account information on the top right of the page. **IMPORTANT:** If a name correction in UF e-Learning or ProctorU is needed, promptly notify Biotility at BACE@research.ufl.edu. Please refrain from scheduling your exam until you receive a confirmation that your name has been corrected. Name corrections may take up to two weeks to process.
- Acceptable forms of ID: A government- or school-issued photo ID is required. Your ID must be valid and not expired.
- Unacceptable forms of ID: Digital IDs, Social Security Card, Birth Certificate, Debit/Credit cards/Checks, Photo or photocopy of IDs.

Computer Requirements

| Type | Required Specifications and Additional Notes |
|-------------------------|--|
| Admin Access | Admin access to your testing computer is required. To use ProctorU for your exam, you need to download two applications: Guardian Browser and Support-LogMeInRescue. If you do not have permission to install software on your computer, please reach out to your company or school's IT support for help in adding these applications. Support-LogMeInRescue must be installed at the time of testing, not ahead of time. |
| Operating System | <p>You need one of the following operating systems:</p> <ul style="list-style-type: none"> ● PC Users - Windows 10 is required and recommended. Windows 10 S mode is NOT supported. ● Mac Users - MacOS 10.13 is required. MacOS 10.15 is recommended. <p>IMPORTANT: Linux operating systems, Chromebooks, iPads or other tablets, and smartphones are NOT acceptable testing devices.</p> |
| CPU | More than 2 core CPU with less than 85% CPU usage is required. More than 4 core CPU less than 50% CPU usage is recommended. |
| RAM | 4 GB with less than 95% RAM usage is required. 16 GB with less than 90% usage is recommended. |

| Type | Required Specifications and Additional Notes |
|--------------------------------|---|
| Connectivity Ports | Ports 1935, 843, 80, 443, 61613, and UDP/TCP are required. It is extremely rare, but some ports used for video sharing may be blocked by your computer's firewall or ISP. During the startup process, if you encounter technical issues with sharing video, ProctorU can navigate you through the process of opening a port. Admin access is required for this system change. |
| Internet Connection | A secure, stable internet connection is required. While Wi-Fi is acceptable, a wired connection is recommended for optimal stability. |
| Internet Download Speed | 1 Mbps is required. 12 Mbps is recommended |
| Internet Upload Speed | 1 Mbps is required. 3 Mbps is recommended |
| Monitor | At least a 12 inch monitor is required. 17 inches is recommended. Dual monitors are NOT permitted. |
| Screen Resolution | At least 1366 x 768. 1920 x 1080 and above is recommended. |
| Mouse or Touchpad | No specifications or recommendations. |
| Keyboard | No specifications or recommendations. |
| Webcam | At least 640 x 480 resolution is required. 1280 x 720 resolution is recommended. |
| Microphone | A microphone is required, but there are no specifications or recommendations. Headsets are NOT permitted. |

Testing Station & Exam Environment Requirements

Your testing station must meet the following standards:

- The testing station must be at a desk or table (not on a bed or couch).
- The testing station must be cleared of all items both on and under the desk.
- Only one monitor is permitted. Unplug any secondary monitors and restart your computer to ensure all systems and processes are up to date.
- A small, **dry-erase whiteboard is required**, and the use of scratch paper is strictly prohibited. It's essential to note that the exam content involves mathematical calculations. While ProctorU

allows you to override this requirement, opting not to use a whiteboard means you cannot appeal any potential impact it might have on your outcome.

Your exam environment must meet the following standards:

- No visible writing on the desk or walls. General artwork is acceptable, but science-related posters, calendars, and message boards are not allowed.
- No music or televisions should be playing in the background.
- The lighting in the room must be of "daylight" quality. If there is not enough light for your camera to see your face and the testing room, your exam cannot be monitored remotely.
- No other individuals may be present in the room during testing. It is advisable to post a notice on the door to prevent accidental incursions.

Room Scan Requirements

You will be asked to show the whole room in which you are testing. If you are uncomfortable showing your bedroom, please choose a room that you are comfortable showing. You are required to perform a pre-exam room scan and a post-exam room scan. During the room scan, examinees will need the following item:

- Handheld mirror (at least 2 inches wide) OR cell phone's front-facing "selfie" camera

Candidate Agreement

Prior to taking the BACE, all candidates are required to complete a candidate agreement. This agreement ensures a uniform understanding of behavioral expectations and consequences among all candidates before the exam. The agreement addresses five categories: Academic Honesty, Exam Rules, Exam Environment, Prohibited Items, and Consequences. If you have any questions about the candidate agreement, please feel welcome to contact Biotility's Customer Service Department at [386-462-3181 Option #1](tel:386-462-3181) or BACE@research.ufl.edu.

Academic Honesty

- I will NOT accept or give assistance to another candidate during the exam.
- I will NOT discuss specific exam questions with another candidate or individual.
- I will NOT copy, photograph, record, post, or reproduce exam content.
- I have not used stolen exam content to prepare for the exam.
- I will report any known misconduct or academic dishonesty to Biotility.

Exam Rules

- I will NOT communicate with anyone other than my ProctorU Proctor or Exam Monitor during an exam session.
- I will NOT search external references for answers during an exam session.

- I will remain in front of my computer for the duration of the exam. I understand restroom breaks during the exam are NOT permitted.

Exam Environment

- I will test at desk or table (not on a bed or couch).
- I will remove any visible writing from my desk and/or walls.
- I will turn off all music, television, and/or other media.
- I will test in a well-lit room.

Prohibited Items

- Smart watch
- Personal Notes or Notebooks
- Headphones (for example, NO Closed-Back, Open-Back, On-Ear, Over-Ear, In-Ear, Earbuds, Bluetooth, or Noise-Cancelling)
- Scratch paper (a dry-erase whiteboard and marker are required)
- Calculator (a calculator is provided within the exam)
- Food and drink
- Books
- Visible writing on the desk or walls

Consequences of Exam Violations

- Biotility will withhold my exam score or invalidate my BACE Credential.
- Biotility will report behavioral violations to my Exam Site, where applicable.
- Exam Site Personnel may notify other individuals (such as parents, directors, principals, admissions personnel, scholarship programs, state Departments of Education, and/or other program stakeholders), and additional consequences beyond the control of Biotility may be applied.
- Biotility may disqualify me from participating in other Biotility events or certification programs.
- Biotility may seek legal remedies for theft of intellectual property or copyright infringement.

Additional ProctorU Pre-exam Requirements

- Candidates utilizing the remote testing option must [establish a ProctorU account](#) and [schedule their preferred exam time](#). Additionally, candidates should [download the Guardian Browser](#), [conduct a system check](#), and familiarize themselves with the "[Tips to Prepare](#)" and "[Exam Day \(What to expect\)](#)." All necessary resources are available at the [University of Florida's ProctorU portal](#), where a video summarizing the process can also be viewed.

Exam Startup

Exam Startup Summary

ProctorU Tasks:

- Pre-checks
- Chatbox (Support-LogMeInRescue) download
- Photos & Authentication
- Proctor Connection & Confirmations
- Remote System Check
- Camera Pan

UF e-Learning tasks:

- Go to the Exam & Enter Access Code (this will be entered by ProctorU)
- Take Your Exam

Exam Launch Process

This process will likely take between 8 to 10 minutes unless you experience technical difficulties (be sure to [test your equipment](#) before your scheduled exam date to minimize the chance you'll have technical issues), in which case ProctorU can assist you with fixing your equipment. This time is not subtracted from the allotted exam time.

Review the step-by-step process documented below and/or watch the video that applies to your type of exam. These will you to help familiarize yourself with a live proctored launch:

1. [Log in to your ProctorU account](#) 2-3 minutes before your scheduled appointment and select **Start Session** when your appointment time arrives.
2. **Pre-checks:** You'll be required to accept exam guidelines and [terms of service](#). The browser will prompt you to share your screen, a required part of being proctored online. You'll be automatically guided through a series of equipment checks to make sure your system meets minimum requirements.
3. **Chatbox download:** You will be prompted to download and run a Support-LogMeInRescue applet file that will bring up a chat box allowing you to text with your proctor. If prompted, be sure to select **open** or **allow** to give the file permission to run. When the chat box says "waiting," it means that you are in the queue waiting for your proctor. TIP: If your status shows "waiting," do not re-download the applet file as that will put you back at the end of the queue. If you have issues with this applet file, view [these troubleshooting tips](#).
4. **Photos & Authentication:** You'll take a photo of yourself as well as your I.D. for identity verification purposes.
5. **Proctor Connection & Confirmations:** Your proctor will greet you and confirm that you passed your identity verification steps. You'll review the exam rules with your proctor, and they'll ask to see any permitted resources that your instructor has allowed you to use during your exam.
6. **Remote System Check:** Your proctor will ask to take remote control of your mouse and keyboard via the Support-LogMeInRescue applet to make sure no unpermitted programs are running. You will be able to see everything that your proctor is doing during this step, and it is impossible for them to access any files without your knowledge.

7. **Camera Pan:** Your proctor will ask you to show the 4 walls of your room as well as your desk space via your webcam. You will be asked to show your computer monitor using a mirror or cellphone camera. Last, your proctor will make sure your cell phone is out of reach.
8. **Go to the Exam & Enter Access Code:** Your proctor will then direct you to UF e-Learning so that they can unlock your exam.
9. **Take Your Exam:** Your proctor will release control of your computer, and you will begin your exam when you are ready.

Submitting Your Exam

1. **Alert the proctor when finished BEFORE submitting:** Prior to submitting your exam, let your proctor know, through the chat box, that you are finished. They will oversee the submission process. You will also be required to clear your whiteboard.
2. **Review results:** Your exam results are made available immediately, you may review them for as long as you would like.
3. **Log out of your browser:** After reviewing your results, your proctor must observe you log out of the exam website and close out of all browser tabs.
4. **Close out of ProctorU chat box:** This will end your session with ProctorU. Once the chat box closes, you will be invited to complete a customer satisfaction survey.

Digital Credentials

Within two (2) weeks of passing the Biotechnician Assistant Credentialing Exam (BACE), Biotility emails a digital credential to the candidate. Candidates receive a branded, secure, and verifiable digital credential. Candidates may place the credential's unique URL in a wide variety of places, including:

- Social Media Profiles
- Websites and Blogs
- Digital Resumes
- Email Signatures

By adding a digital credential to these locations, stakeholders, such as admissions officers and potential employers, can view and verify a candidate's credential. They are also linked to information about the BACE and thereby receive a better understanding of the rigor of the credential earned.

Sharing Digital Credentials through LinkedIn

Candidates are provided multiple options for sharing their digital credential. For details on all options available, please visit [Accredible's Recipient Knowledge Base](#).

Adding a digital credential to LinkedIn:

1. Select the ellipsis (...) menu at the bottom of the credential window, then select **Add to LinkedIn Profile**.
2. A dialog will appear with information needed to copy and paste to the LinkedIn profile.
3. At the bottom of the dialog that appears, select **Open LinkedIn**.
4. Copy and paste the relevant information from the dialog to the LinkedIn form.
5. Once all the information has been copied across, save and close the LinkedIn form.

Credential Verification

To verify a BACE Credential online, stakeholders may visit Accredible's [Verification Tool](#) and use this to ascertain whether a digital credential has been legitimately published from Biotility. There are three verification methods.

- **Credential Link** - If you know the URL of the credential you would like to verify, input this in the field shown and select **Verify**.
- **Credential ID No.** - If you know the ID No. of the credential you would like to verify, input this in the field shown and select **Verify**.
- **Open Badge Image Upload / How to Verify a Badge** - If you have seen an open badge that you want to check is real, you can copy and upload that badge to Accredible's Verification Tool. It will read the meta-data in that badge image and be able to tell you if it is genuine or not.

Exam Specifications

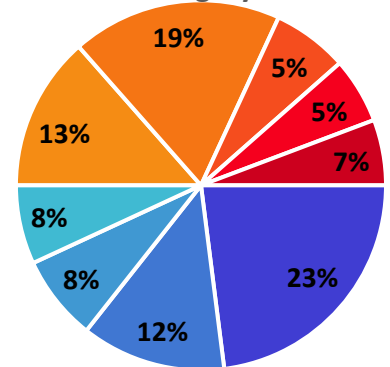
The Biotechnician Assistant Credentialing Exam (BACE) consists of both a Practical and Knowledge portion. Candidates take both portions, which cover nine categories, in one session. Candidates must score 80% or above to pass the BACE. Candidates may take the BACE a maximum of three times within a year, with a 20-day waiting period between attempts. **The Remote Testing Option must be taken online with ProctorU.**

The following descriptions for each portion include the total questions per portion, categories covered, questions per category, points per category, and total points per portion. **The exam is closed book with a duration of 4 hours.**

| BACE Knowledge Portion | | |
|---------------------------------|-----------|-----------|
| Category | Questions | Points |
| General Topics in Biotechnology | 16 | 21 |
| Technical Skills & Applications | 22 | 31 |
| Biochemistry/Chemistry | 9 | 9 |
| Biological Systems | 8 | 9 |
| Workplace Safety & Behavior | 12 | 12 |
| Total | 67 | 82 |

| BACE Practical Portion | | |
|------------------------------|-----------|-----------|
| Category | Questions | Points |
| Biotechnology Skills | 25 | 38 |
| Applied Mathematics | 11 | 19 |
| Laboratory Equipment | 17 | 13 |
| Research & Scientific Method | 12 | 12 |
| Total | 65 | 82 |

Distribution of Points per Category



- General Topics in Biotechnology
- Technical Skills & Applications
- Biochemistry/Chemistry
- Biological Systems
- Workplace Safety & Behavior
- Biotechnology Skills
- Applied Mathematics
- Laboratory Equipment
- Research & Scientific Method

Detail of Exam Categories

The following is a list of Knowledge and Practical Portion Subjects and their individual topics.

Knowledge Portion Categories

GENERAL TOPICS IN BIOTECHNOLOGY

- Discuss current techniques used in biotechnology, and their applications
- Demonstrate knowledge of regulatory agencies governing the manufacture and distribution of biotechnology-derived products
- Outline the development and the regulatory approval process of biopharmaceuticals
- Illustrate examples of the benefits to society of biotechnological advances
- Understand the purpose of Good Laboratory Practices (GLPs) in product testing
- Understand the purpose of Good Clinical Practices (GCPs) in clinical trials
- Discuss the role and identify types of documents used in CGMP compliant industries
- Understand the purpose of Current Good Manufacturing Practices (CGMPs)

Knowledge Portion

- Outline the role of various departments in a company, including Research and Development, Quality Assurance, Quality Control, and Manufacturing
- Identify proper workplace safety behaviors
- Describe appropriate workplace behaviors
- Outline the manufacturing process of biopharmaceuticals
- Describe Environmental Monitoring in a controlled space
- Discuss ethics and bioethics in the workplace and society
- Describe careers in the biotechnology field
- Describe historical applications of biotechnology

TECHNICAL SKILLS/APPLICATIONS

Knowledge Portion

- Describe the process of culturing microorganisms and tissues using aseptic technique
- Discuss the differences between sterilization, decontamination, and disinfection
- Describe the proper use of microscopes
- Understand the principle by which a pH meter works
- Discuss methods of chromosomal and plasmid DNA isolation, purification, and quantification
- Contrast agarose gel electrophoresis and polyacrylamide gel electrophoresis (PAGE)
- Understand how restriction enzymes are used
- Describe recombinant DNA and cloning techniques
- Discuss the transformation or transfection of model organisms
- Describe the mechanism of Polymerase Chain Reaction (PCR)
- Discuss protein expression in model organisms
- Discuss methods of molecule/protein isolation, purification, and quantification
- Understand Western blotting, ELISA, and other immunoassays
- Explain the principles of spectrophotometry
- Demonstrate knowledge of laboratory equipment calibration and validation
- Use scientific notation correctly
- Use significant digits correctly

BIOCHEMISTRY/CHEMISTRY

Knowledge Portion

- Compare and contrast types of chemical bonds
- Understand the chemistry of molecules and macromolecules
- Discuss the differences between aerobic and anaerobic respiration
- Demonstrate knowledge of enzymes and reaction rates
- Describe DNA structure and function
- Describe transcription
- Describe protein structure and function
- Describe translation and gene expression
- Differentiate between homogeneous and heterogeneous mixtures

BIOLOGICAL SYSTEMS

Knowledge Portion

- Explain cell theory
- Understand the general physiology of cells
- Explain the interaction between cells, and between cells and their environment
- Describe cell division (meiosis and mitosis)
- Discuss cell staining, and distinguish between Gram positive/negative cells
- Demonstrate an understanding of the immune system
- Understand the genetics of model organisms
- Describe the “central dogma of molecular biology”

WORKPLACE SAFETY & BEHAVIOR

Knowledge Portion

- Identify Safety Symbols
- Exercise proper laboratory safety protocols
- Describe proper handling of biological and hazardous waste
- Identify and properly use Personal Protective Equipment (PPE)
- Derive information from Safety Data Sheets (SDS)
- Follow practices associated with regulatory compliance
- Demonstrate good documentation practices, including following Standard Operating Procedures (SOPs)
- Properly label items including solutions, buffers, Petri plates, samples, and products
- Identify acceptable work habits

Practical Portion Categories

BIOTECHNOLOGY SKILLS

Practical Portion

- Accurately measure liquids using micropipettes and serological pipets
- Accurately measure mass using electronic balances
- Demonstrate proper aseptic/sterile technique
- Demonstrate proper culturing of microorganisms
- Demonstrate proper use of electrophoresis equipment
- Properly measure and adjust the pH of a solution with a pH meter
- Properly prepare solutions, buffers, and media
- Properly perform a serial dilution
- Describe the applications and proper use of a spectrophotometer
- Describe the proper use of a centrifuge
- Use 24-hour time correctly

APPLIED MATHEMATICS IN BIOTECHNOLOGY

Practical Portion

- Use scientific notation correctly
- Use significant digits correctly
- Perform calculations for serial dilutions

- Perform calculations using dilution ratios
- Make conversions within the metric system, and use metric measurements
- Solution preparation:
 - Solve Volume/Volume (V/V) solution calculations
 - Solve Weight/Volume (W/V) solution calculations
 - Solve Molarity solution calculations
 - Solve Dilution Factor calculations
- Generate a graph using collected data:
 - Apply Beer's Law
 - Generate a standard curve
 - Properly plot data
 - Interpret data

LABORATORY EQUIPMENT

Practical Portion

- Identify laboratory glassware and equipment
- Demonstrate proper and safe use of equipment (including, but not limited to):

| | | |
|-----------------------------|--------------------------------------|--------------------|
| ○ Fume hoods | ○ Micropipettes & serological pipets | ○ Water baths |
| ○ Biosafety cabinets | ○ Electronic balances | ○ Stirrers/shakers |
| ○ Microscopes | ○ pH meters | ○ Vortexers |
| ○ Electrophoresis equipment | ○ Incubators | ○ Autoclaves |
| ○ Spectrophotometers | ○ Centrifuges | |

RESEARCH & SCIENTIFIC METHOD

Practical Portion

- Discuss good experimental design, including the proper use of controls
- Explain the scientific method
- Analyze and interpret data, including the use of statistical analysis
- Explain how to maintain a laboratory notebook
- Discuss various ways of communicating scientific research, including peer-reviewed journals, and presenting posters or talks at meetings
- Read, interpret, and draw conclusions from technical material

Studying for the BACE

Recommended Study References

There are multiple resources available to help you prepare for the examination. So that you are not overwhelmed, we encourage you to prepare a study plan with a bioscience educator. The suggested study references are listed below:

- Brown, J. Kirk. Biotechnology: A Laboratory Skills Course (Second Ed.). Hercules, CA: Bio-Rad Laboratories, Inc., 2018.
- Daugherty, Ellyn. Biotechnology: Laboratory Manual (Second Ed.). St. Paul, MN: Paradigm Publishing, Inc., 2017.
- Daugherty, Ellyn. Biotechnology: Science for the New Millennium (Second Ed.). St. Paul, MN: Paradigm Publishing, Inc., 2017.
- Seidman, Lisa. Basic Laboratory Methods for Biotechnology: Textbook and Laboratory Reference (Third Ed.). Boca Raton, FL: CRC Press, 2021.

Biotility's CGMP Review

Biotility's CGMP Review is an overview of the regulations involved when working in a controlled environment, such as Current Good Manufacturing Practices (CGMP) and Good Documentation Practices. There is also information on the organization of a typical biotech company and the types of jobs therein. All candidates should review this critical resource prior to testing. This document is available publicly at our [Candidate Resources](#) website and within the BACE Practice Exam Course.

BACE Practice Exam Course

We highly recommend taking both Practice Exams before your scheduled exam date. These practice exams closely mirror the content you will encounter in the actual exam, offering valuable preparation. You may take the practice exams multiple times, and at the end of each quiz, the correct answers will be provided for your review. **Enroll in this beneficial free study resource through the link available on your BACE Exam Home Page within UF e-Learning.** Once enrolled, you will see the BACE Practice Exam tile on your UF e-Learning dashboard.

Additional Practice for Applied Mathematics in Biotechnology

The category Applied Mathematics in Biotechnology covers some of the most rigorous content on the exam including scientific notation, significant digits, correct use of decimals, serial dilutions, solution ratios, conversions, solution calculations, and dilution factor calculations. Additional practice questions are available to help you prepare and build your confidence.

Additional Study Resources

Biotility has created or selected additional free study resources for your use. They are located in this course as a module but can also be found at our [Candidate Resources](#) website.

Biotility and ProctorU Contact Information

Biotility

Phone: [386.462.3181](tel:386.462.3181) Option #1

Email: BACE@research.ufl.edu

Hours: Monday – Friday, 8AM – 5PM EST

BACE Candidate Website: <http://biotility.research.ufl.edu/bace/candidate-resources>

UF e-Learning Login Page: <https://elearning.ufl.edu>

ProctorU

Phone: [855.772.8678](tel:855.772.8678)

Hours: Sunday – Saturday, 24hrs a day

ProctorU Candidate Support Website: <https://support.proctoru.com/hc/en-us>

Live Chat Support: <https://auto.proctoru.com/chat/>

Need help during an exam?



Look for the ProctorU Chat Icon to talk to a representative anytime.