TEXAS FORENSIC SCIENCE COMMISSION ANALYST AND TECHNICIAN LICENSING EXAMINATION
BASIC INFORMATION REGARDING EXAMINATION CONTENT, SCORING AND SYLLABUS

A. Forensic Analyst General Examination

The forensic analyst licensing exam is comprised of seven domains. These seven domains were chosen due to their general application across all disciplines. The domains are as follows:

1. **Evidence Handling**
2. **Brady/Michael Morton Act**
3. **Basic Statistics for Forensic Application and Related Concepts**
4. **Expert Testimony**
5. **Professional Responsibility**
6. **Human Factors**
7. **Root Cause Analysis**

The exam consists of 110 multiple choice questions. Only 100 of these questions are scored. The remaining 10 questions are pilot questions. Of the scored questions, 15 questions are drawn from Brady/Michael Morton Act and Professional Responsibility, while 14 questions are drawn from each of the remaining domains. Each applicant must answer at least 70 questions correctly to achieve a passing score.

B. Forensic Technician General Examination

The forensic technician licensing exam is comprised of five domains. These domains are as follows:

1. **Evidence Handling**
2. **Brady/Michael Morton Act**
3. **Professional Responsibility**
4. **Human Factors**
5. **Root Cause Analysis**

Technicians *are only required to review the readings listed under these five domains* within TopClass, though all technicians have access to and are welcome to read the other domain reading material if desired.

The technician exam consists of 50 questions, all of which count toward a minimum passing score of 35. There are no pilot questions on the technician exam at this time. Of the 50 questions, 14 are drawn from Brady/Michael Morton Act and Professional Responsibility, and 9 are drawn from each remaining domain.

C. Note on Reading Material Changes After Pilot Period

For examinees who accessed reading material during the pilot period, please note that certain material has been removed from TopClass. **Examinees will no longer be tested on the following**:

1. Chapters 5 thru 9 from *Forensic Testimony* by Bowers (readings form this book were reduced to chapters 3 and 4 only);
2. The article *Practical Solutions* by Itiel Dror; and
3. The article *Risk, Reward and Redemption*… by Max Houck.

D. Syllabus for Exam Preparation

The readings and videos listed in the Licensing Exam Bibliography are designed to prepare examinees for the exam and provide a broad knowledge base for the topics covered. All questions are either recall regarding concepts described in the materials, or application wherein factual scenarios are posed and application of knowledge gleaned from the materials must be applied to that scenario. Study of any materials outside those provided in TopClass is not required.

Exam questions assess examinees' ability to understand and apply the concepts described in the seven domains below. When studying the material in TopClass pay particular attention to the list and focus on the subject areas listed below.

1) **Domain I: Evidence Handling**
   a) Basic definitions and foundational principles in evidence handling and forensic science.
   b) Importance of and practices used for contamination prevention, both between evidence items and by the forensic analyst.
   c) Proper evidence procedures of handling biological and non-biological evidence to prevent or minimize the possible loss or deleterious change of all evidentiary items.
   d) Purpose of chemical hygiene plans and information included in these plans.
   e) Importance of safety in a laboratory setting and demonstration of knowledge of personal protective equipment (PPE) and basic laboratory safety practices.
   f) Purpose, importance, and key components of "chain of custody."
   g) Importance of proper evidence packaging and storage as it relates to the preservation of evidence (including knowledge of best practices for storing different types of evidence) and acceptable handling practices for evidence that is not properly packaged or stored.

2) **Domain II: Brady and the Michael Morton Act (MMA)**
   a) Disclosure obligations of analysts and laboratories to criminal justice stakeholders under 39.14 of the Texas Code of Criminal Procedure.
   b) Disclosure obligations of analysts and laboratories to criminal justice system stakeholders under the due process clause of the U.S. Constitution.
   c) State's role in the criminal justice system including obligations of disclosure.
   d) Implications of failure to disclose as it relates to a particular case, to scientist credibility, and to the forensic discipline at issue.
   e) Application of relevant provisions to both person-specific and quality process disclosures.
   f) Terminology related to disclosure requirements including, but not limited to, materiality, exculpatory, inculpatory, discovery, Michael Morton Act, exoneration, and good faith.
   g) Ability to answer questions regarding the main legal conclusions of key court cases involving disclosure that are discussed in the reading material.
   h) Ability to recall and apply examples of hypothetical disclosure scenarios.
   i) Ability to understand and recall the timing requirements for disclosure.

3) **Domain III: Basic Statistics in Forensic Applications and Related Concepts**
   a) Types of studies that produce valid and repeatable findings.
   b) Key measurement concepts including sources of measurement error and their impact on reliability and validity.
   c) Sampling theories to interpret and describe sample statistics and error.
   d) Statistical meanings of concepts such as validity, bias, and repeatability.

 e) Statistical concepts including, but not limited to: standard error, standard deviation, confidence interval, significance level, likelihood ratio, probability, conditional probability, Bayes' theorem, and odds.

 f) Basic concepts regarding uncertainty of measurement.

 g) Use of probability to explain the weight of evidence.

4) **Domain IV: Expert Testimony**

 a) Roles and responsibilities of courtroom participants.

 b) Expected demeanor and actions of an expert witness.

 c) Court rulings that impact admissibility of forensic evidence in legal proceedings, such as the main legal conclusions of key cases such as *Melendez Diaz* and *Daubert*.

 d) Terminology associated with legal proceedings and related concepts.

 e) How expert witnesses should maintain the limits of their expertise while on the witness stand and correct inaccurate portrayals of their testimony/evidence by others.

 f) How to manage questioning regarding prior mistakes.

 g) Direct and cross examination, and how to handle issues that arise after testimony.

5) **Domain V: Professional Responsibility**

 a) Key professional responsibilities of members of the forensic analyst profession.

 b) Potential pitfalls and professional responsibility issues that may arise in the laboratory.

 c) Potential pitfalls and professional responsibility issues that may arise when interacting with other criminal justice stakeholders.

 d) Importance of proper representation of qualifications.

 e) Impact of professional misconduct including basic understanding of key Texas cases covering professional misconduct by an analyst such as *Ex parte Coty.*

 f) Requirements under Texas law to report crime laboratory irregularities and to whom those responsibilities attach.

 g) Ability to recall key concepts in the Texas Code of Professional Conduct for Analysts and Crime Laboratories.

 h) Management's responsibilities to provide a quality culture that embraces transparency and disclosure.

6) **Domain VI: Human Factors**

 a) Types and importance of cognitive bias and how it relates to forensic science.

 b) Factors that can introduce cognitive bias into a system.

 c) Difference between task-relevant and task-irrelevant information.

 d) Methods a laboratory may use to safeguard against cognitive bias.

 e) How bias may impact experts when communicating in and out of court.

 f) Terminology including, but not limited to, the following: base-rate expectations, task-relevant, task-irrelevant, blinding, suspect-driven bias, adversarial system, inappropriate influence and linear sequential unmasking.

7) **Domain VII: Root Cause Analysis**

 a) The concept of "just culture" and its application to forensic laboratories.

 b) The concept of "continuous improvement" and its application to forensic laboratories.

 c) The value and core components of a quality management system.

 d) The purpose and importance of a root cause analysis.

e) The steps in and qualities of an acceptable root cause analysis protocol.
f) Various methods and tools for performing root cause analysis.
g) The purpose of corrective and preventative actions and the importance of evaluating their effectiveness.