



Forensic DNA Exam Blueprint

This blueprint and reference list serves as the study guide for this exam. The blueprint contains the main knowledge/skill domains the exam will cover. For each domain, a list of job tasks requiring the domain are included. The job tasks are organized by highest to lowest score of the combined frequency and importance of each task. The domains and associated tasks should serve as a guide when studying for the exam.

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Knowledge/Skill Domains	Tasks using domain knowledge & skills	Frequency & Importance Score Quartiles (Top to bottom, 1-4)
1 Science & Math		
1.1 Biology (e.g. molecular, cellular)	B10: Prepare samples for DNA processing	1
	F4: Provide testimony (e.g. depositions, court) D2: Assess quality of DNA typing samples D1: Assess quality of DNA typing controls D4: Eliminate DNA process artifacts D3: Troubleshoot DNA typing data (e.g. re-amplifications, re-injectic A1: Review case information E5: Communicate technically reviewed results (e.g. written, verbal) E2: Conduct technical review A2: Develop testing plan G5: Participate in proficiency testing D12: Address additional evidence testing H1: Review current literature	2
	F3: Participate in pre-trial conferences E1: Write draft report (e.g. serology and/or DNA) K2: Participate in laboratory meetings (e.g. staff, QA, unit) G12: Perform contamination prevention procedures E4: Address review issues (e.g. technical, administrative) H2: Complete continuing education activities B9: Collect samples from evidence	3
	D5: Determine number of DNA contributors C4: Interpret quantitation results G1: Prepare work area C3: Quantify DNA extracts C6: Perform DNA amplifications (e.g. autosomal/Y-STR, mito) C7: Perform DNA typing (e.g. CE run, data collection) C1: Perform non-differential extractions C2: Perform differential extractions D6: Deduce DNA contributors K4: Respond to daily inquiries (e.g. email, phone calls) G4: Verify reagent quality	4
1.2 Chemistry	C3: Quantify DNA extracts C6: Perform DNA amplifications (e.g. autosomal/Y-STR, mito) C7: Perform DNA typing (e.g. CE run, data collection) C1: Perform non-differential extractions C2: Perform differential extractions	1
	F4: Provide testimony (e.g. depositions, court) D2: Assess quality of DNA typing samples D1: Assess quality of DNA typing controls D4: Eliminate DNA process artifacts D3: Troubleshoot DNA typing data (e.g. re-amplifications, re-injectic E5: Communicate technically reviewed results (e.g. written, verbal) E2: Conduct technical review G3: Prepare laboratory reagents B10: Prepare samples for DNA processing G5: Participate in proficiency testing H1: Review current literature	2
	F3: Participate in pre-trial conferences E1: Write draft report (e.g. serology and/or DNA) K2: Participate in laboratory meetings (e.g. staff, QA, unit) C4: Interpret quantitation results E4: Address review issues (e.g. technical, administrative) H2: Complete continuing education activities	3
	G1: Prepare work area G12: Perform contamination prevention procedures A1: Review case information A2: Develop testing plan D12: Address additional evidence testing K4: Respond to daily inquiries (e.g. email, phone calls) G4: Verify reagent quality G2: Perform instrument maintenance	4



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Knowledge/Skill Domains	Tasks using domain knowledge & skills	Frequency & Importance Score Quartiles (Top to bottom, 1-4)	
1.3 Genetics	D5: Determine number of DNA contributors D7: Compare DNA contributors (e.g. knowns, evidentiary samples) D8: Calculate sample statistics (e.g. RMP, LR, counting method) D6: Deduce DNA contributors E5: Communicate technically reviewed results (e.g. written, verbal) E2: Conduct technical review G5: Participate in proficiency testing	1	
	F4: Provide testimony (e.g. depositions, court) D2: Assess quality of DNA typing samples D11: Evaluate CODIS matches F3: Participate in pre-trial conferences H1: Review current literature	2	
	D1: Assess quality of DNA typing controls D4: Eliminate DNA process artifacts E1: Write draft report (e.g. serology and/or DNA) K2: Participate in laboratory meetings (e.g. staff, QA, unit) D3: Troubleshoot DNA typing data (e.g. re-amplifications, re-injectic E4: Address review issues (e.g. technical, administrative) H2: Complete continuing education activities	3	
	K4: Respond to daily inquiries (e.g. email, phone calls)	4	
	D8: Calculate sample statistics (e.g. RMP, LR, counting method) E5: Communicate technically reviewed results (e.g. written, verbal) E2: Conduct technical review G5: Participate in proficiency testing	1	
	F4: Provide testimony (e.g. depositions, court) D11: Evaluate CODIS matches D6: Deduce DNA contributors F3: Participate in pre-trial conferences H1: Review current literature	2	
	E1: Write draft report (e.g. serology and/or DNA) K2: Participate in laboratory meetings (e.g. staff, QA, unit) E4: Address review issues (e.g. technical, administrative) H2: Complete continuing education activities K4: Respond to daily inquiries (e.g. email, phone calls)	3	
		4	
	1.4 Population Genetics	C4: Interpret quantitation results D8: Calculate sample statistics (e.g. RMP, LR, counting method) D6: Deduce DNA contributors E5: Communicate technically reviewed results (e.g. written, verbal) E2: Conduct technical review G5: Participate in proficiency testing	1
		F4: Provide testimony (e.g. depositions, court) D11: Evaluate CODIS matches F3: Participate in pre-trial conferences H1: Review current literature	2
E1: Write draft report (e.g. serology and/or DNA) D5: Determine number of DNA contributors K2: Participate in laboratory meetings (e.g. staff, QA, unit) E4: Address review issues (e.g. technical, administrative) H2: Complete continuing education activities K4: Respond to daily inquiries (e.g. email, phone calls)		3	
		4	
1.5 Statistics		C4: Interpret quantitation results D8: Calculate sample statistics (e.g. RMP, LR, counting method) D6: Deduce DNA contributors E5: Communicate technically reviewed results (e.g. written, verbal) E2: Conduct technical review G5: Participate in proficiency testing	1
		F4: Provide testimony (e.g. depositions, court) D11: Evaluate CODIS matches F3: Participate in pre-trial conferences H1: Review current literature	2
		E1: Write draft report (e.g. serology and/or DNA) D5: Determine number of DNA contributors K2: Participate in laboratory meetings (e.g. staff, QA, unit) E4: Address review issues (e.g. technical, administrative) H2: Complete continuing education activities K4: Respond to daily inquiries (e.g. email, phone calls)	3
			4



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Knowledge/Skill Domains	Tasks using domain knowledge & skills	Frequency & Importance Score Quartiles (Top to bottom, 1-4)
1.6 Math	C4: Interpret quantitation results D8: Calculate sample statistics (e.g. RMP, LR, counting method) C5: Normalize DNA samples (e.g. concentration, dilution) D6: Deduce DNA contributors E2: Conduct technical review G5: Participate in proficiency testing	1
	D4: Eliminate DNA process artifacts D5: Determine number of DNA contributors D11: Evaluate CODIS matches E5: Communicate technically reviewed results (e.g. written, verbal) G3: Prepare laboratory reagents F4: Provide testimony (e.g. depositions, court) H1: Review current literature	2
	D2: Assess quality of DNA typing samples D1: Assess quality of DNA typing controls F3: Participate in pre-trial conferences G2: Perform instrument maintenance K2: Participate in laboratory meetings (e.g. staff, QA, unit) C3: Quantify DNA extracts C6: Perform DNA amplifications (e.g. autosomal/Y-STR, mito) C7: Perform DNA typing (e.g. CE run, data collection) D9: Determine CODIS eligibility of profiles C1: Perform non-differential extractions D3: Troubleshoot DNA typing data (e.g. re-amplifications, re-injectic C2: Perform differential extractions H2: Complete continuing education activities	3
	E1: Write draft report (e.g. serology and/or DNA) E4: Address review issues (e.g. technical, administrative) B2: Inventory evidence items B10: Prepare samples for DNA processing A2: Develop testing plan K4: Respond to daily inquiries (e.g. email, phone calls) G4: Verify reagent quality B3: Address case discrepancies E3: Conduct administrative review B9: Collect samples from evidence	4
2 Quality Assurance/Quality Control		
2.1 ISO 17025 / ANAB	F4: Provide testimony (e.g. depositions, court) E6: Issue final report E2: Conduct technical review A2: Develop testing plan G5: Participate in proficiency testing G4: Verify reagent quality	2
	G2: Perform instrument maintenance	3
2.2 QAS	F4: Provide testimony (e.g. depositions, court) E6: Issue final report E2: Conduct technical review G5: Participate in proficiency testing G4: Verify reagent quality	2
	G2: Perform instrument maintenance	3
	D2: Assess quality of DNA typing samples D1: Assess quality of DNA typing controls D4: Eliminate DNA process artifacts D5: Determine number of DNA contributors C4: Interpret quantitation results C3: Quantify DNA extracts C6: Perform DNA amplifications (e.g. autosomal/Y-STR, mito) C7: Perform DNA typing (e.g. CE run, data collection) D7: Compare DNA contributors (e.g. knowns, evidentiary samples) D9: Determine CODIS eligibility of profiles D8: Calculate sample statistics (e.g. RMP, LR, counting method) C1: Perform non-differential extractions C5: Normalize DNA samples (e.g. concentration, dilution) D3: Troubleshoot DNA typing data (e.g. re-amplifications, re-injectic C2: Perform differential extractions D6: Deduce DNA contributors D10: Enter profiles into CODIS	4



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2.3 SWGDAM	D5: Determine number of DNA contributors D7: Compare DNA contributors (e.g. knowns, evidentiary samples) D8: Calculate sample statistics (e.g. RMP, LR, counting method) D6: Deduce DNA contributors	1	
	G12: Perform contamination prevention procedures	2	
	A2: Develop testing plan	3	
	D2: Assess quality of DNA typing samples D1: Assess quality of DNA typing controls D4: Eliminate DNA process artifacts D3: Troubleshoot DNA typing data (e.g. re-amplifications, re-injectic F4: Provide testimony (e.g. depositions, court)	4	
	3 Computer		
	3.1 Computer	B4: Document evidence	1
D4: Eliminate DNA process artifacts C4: Interpret quantitation results D8: Calculate sample statistics (e.g. RMP, LR, counting method)		2	
B1: Maintain chain of custody C3: Quantify DNA extracts C7: Perform DNA typing (e.g. CE run, data collection) D6: Deduce DNA contributors D10: Enter profiles into CODIS G5: Participate in proficiency testing		3	
D2: Assess quality of DNA typing samples D1: Assess quality of DNA typing controls E6: Issue final report E1: Write draft report (e.g. serology and/or DNA) D5: Determine number of DNA contributors C6: Perform DNA amplifications (e.g. autosomal/Y-STR, mito) C1: Perform non-differential extractions C5: Normalize DNA samples (e.g. concentration, dilution) C2: Perform differential extractions K4: Respond to daily inquiries (e.g. email, phone calls) H1: Review current literature D11: Evaluate CODIS matches H2: Complete continuing education activities		4	
3.2 LIMS			
3.2 LIMS		B4: Document evidence	1
	B1: Maintain chain of custody B2: Inventory evidence items	2	
	E6: Issue final report E1: Write draft report (e.g. serology and/or DNA) E2: Conduct technical review G5: Participate in proficiency testing G4: Verify reagent quality E3: Conduct administrative review G2: Perform instrument maintenance G3: Prepare laboratory reagents	3	
	C4: Interpret quantitation results C3: Quantify DNA extracts C7: Perform DNA typing (e.g. CE run, data collection) C6: Perform DNA amplifications (e.g. autosomal/Y-STR, mito) C1: Perform non-differential extractions C5: Normalize DNA samples (e.g. concentration, dilution) C2: Perform differential extractions A1: Review case information B10: Prepare samples for DNA processing H1: Review current literature H2: Complete continuing education activities F2: Address subpoenas	4	



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Knowledge/Skill Domains	Tasks using domain knowledge & skills	Frequency & Importance Score Quartiles (Top to bottom, 1-4)
3.3 CODIS	D9: Determine CODIS eligibility of profiles	1
	D11: Evaluate CODIS matches	
	E2: Conduct technical review	2
	D10: Enter profiles into CODIS	
	D2: Assess quality of DNA typing samples	
	D1: Assess quality of DNA typing controls	3
	A1: Review case information	
	E1: Write draft report (e.g. serology and/or DNA)	
	D7: Compare DNA contributors (e.g. knowns, evidentiary samples)	
	D8: Calculate sample statistics (e.g. RMP, LR, counting method)	
D6: Deduce DNA contributors		
E5: Communicate technically reviewed results (e.g. written, verbal)	4	
E4: Address review issues (e.g. technical, administrative)		
F4: Provide testimony (e.g. depositions, court)		
H2: Complete continuing education activities		
F3: Participate in pre-trial conferences		
4 Communication		
4.1 Communication (e.g. oral, written, presentation, listening, interpersonal)	E5: Communicate technically reviewed results (e.g. written, verbal)	1
	E4: Address review issues (e.g. technical, administrative)	
	F4: Provide testimony (e.g. depositions, court)	
	K4: Respond to daily inquiries (e.g. email, phone calls)	
	E1: Write draft report (e.g. serology and/or DNA)	2
	B4: Document evidence	
	F3: Participate in pre-trial conferences	
	K2: Participate in laboratory meetings (e.g. staff, QA, unit)	
	H2: Complete continuing education activities	
	D3: Troubleshoot DNA typing data (e.g. re-amplifications, re-injectic	
	A1: Review case information	
	E2: Conduct technical review	3
	G5: Participate in proficiency testing	
	D12: Address additional evidence testing	
B3: Address case discrepancies		
E3: Conduct administrative review		
B1: Maintain chain of custody		
E6: Issue final report		
D9: Determine CODIS eligibility of profiles	4	
H1: Review current literature		
F2: Address subpoenas		
5 Process (DNA)		
5.1 Organizational (e.g. Time Management, Multi-Tasking)	A2: Develop testing plan	1
	G5: Participate in proficiency testing	
	E4: Address review issues (e.g. technical, administrative)	2
	E2: Conduct technical review	
	E3: Conduct administrative review	
	D6: Deduce DNA contributors	3
	K4: Respond to daily inquiries (e.g. email, phone calls)	
K2: Participate in laboratory meetings (e.g. staff, QA, unit)		



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5.2 Critical Thinking (e.g. Analytical, Decision Making, Problem-solving)	D3: Troubleshoot DNA typing data (e.g. re-amplifications, re-injectic D6: Deduce DNA contributors E2: Conduct technical review	1
	D2: Assess quality of DNA typing samples C4: Interpret quantitation results D8: Calculate sample statistics (e.g. RMP, LR, counting method) E4: Address review issues (e.g. technical, administrative) A2: Develop testing plan G5: Participate in proficiency testing F4: Provide testimony (e.g. depositions, court) D12: Address additional evidence testing H1: Review current literature	2
	D1: Assess quality of DNA typing controls D4: Eliminate DNA process artifacts E1: Write draft report (e.g. serology and/or DNA) D5: Determine number of DNA contributors B9: Collect samples from evidence K2: Participate in laboratory meetings (e.g. staff, QA, unit) D9: Determine CODIS eligibility of profiles K4: Respond to daily inquiries (e.g. email, phone calls) B3: Address case discrepancies H2: Complete continuing education activities	3
	D7: Compare DNA contributors (e.g. knowns, evidentiary samples) B4: Document evidence A1: Review case information E5: Communicate technically reviewed results (e.g. written, verbal) G4: Verify reagent quality D11: Evaluate CODIS matches E3: Conduct administrative review F3: Participate in pre-trial conferences G2: Perform instrument maintenance	4
5.3 Scientific method	C4: Interpret quantitation results D7: Compare DNA contributors (e.g. knowns, evidentiary samples) D6: Deduce DNA contributors A1: Review case information E5: Communicate technically reviewed results (e.g. written, verbal) E2: Conduct technical review A2: Develop testing plan G5: Participate in proficiency testing	1
	F4: Provide testimony (e.g. depositions, court) D12: Address additional evidence testing H1: Review current literature D5: Determine number of DNA contributors D8: Calculate sample statistics (e.g. RMP, LR, counting method) F3: Participate in pre-trial conferences K2: Participate in laboratory meetings (e.g. staff, QA, unit)	2
	H2: Complete continuing education activities D4: Eliminate DNA process artifacts E1: Write draft report (e.g. serology and/or DNA) D9: Determine CODIS eligibility of profiles B4: Document evidence E4: Address review issues (e.g. technical, administrative) B3: Address case discrepancies B9: Collect samples from evidence	3
	D2: Assess quality of DNA typing samples D1: Assess quality of DNA typing controls D3: Troubleshoot DNA typing data (e.g. re-amplifications, re-injectic K4: Respond to daily inquiries (e.g. email, phone calls) G4: Verify reagent quality D11: Evaluate CODIS matches G2: Perform instrument maintenance	4



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Knowledge/Skill Domains	Tasks using domain knowledge & skills	Frequency & Importance Score Quartiles (Top to bottom, 1-4)
6 Laboratory		
6.1 Good laboratory practice (e.g. safety, PPE)	G12: Perform contamination prevention procedures B9: Collect samples from evidence G5: Participate in proficiency testing	2
	G1: Prepare work area C3: Quantify DNA extracts C7: Perform DNA typing (e.g. CE run, data collection) C1: Perform non-differential extractions B4: Document evidence C5: Normalize DNA samples (e.g. concentration, dilution) G3: Prepare laboratory reagents C2: Perform differential extractions B2: Inventory evidence items B10: Prepare samples for DNA processing	3
	C6: Perform DNA amplifications (e.g. autosomal/Y-STR, mito) G2: Perform instrument maintenance	4
	6.2 Laboratory Skills (e.g. pipetting, robotics)	
	C3: Quantify DNA extracts C7: Perform DNA typing (e.g. CE run, data collection) C6: Perform DNA amplifications (e.g. autosomal/Y-STR, mito) C1: Perform non-differential extractions C5: Normalize DNA samples (e.g. concentration, dilution) C2: Perform differential extractions G5: Participate in proficiency testing	1
	G12: Perform contamination prevention procedures G3: Prepare laboratory reagents B10: Prepare samples for DNA processing	2
	B9: Collect samples from evidence G2: Perform instrument maintenance	3
	7 Forensic Disciplines	
7.1 Other forensic disciplines	A2: Develop testing plan	1
	B4: Document evidence	2
	B9: Collect samples from evidence A1: Review case information K4: Respond to daily inquiries (e.g. email, phone calls) H1: Review current literature B3: Address case discrepancies H2: Complete continuing education activities F3: Participate in pre-trial conferences K2: Participate in laboratory meetings (e.g. staff, QA, unit)	3
	B1: Maintain chain of custody	4
8 Legal		
8.1 Legal system	B1: Maintain chain of custody E6: Issue final report B4: Document evidence	1
	F4: Provide testimony (e.g. depositions, court)	2
	D9: Determine CODIS eligibility of profiles A1: Review case information K4: Respond to daily inquiries (e.g. email, phone calls) F2: Address subpoenas F3: Participate in pre-trial conferences	3
	H1: Review current literature K2: Participate in laboratory meetings (e.g. staff, QA, unit)	4

General College Textbooks covering

Chemistry
 Biochemistry
 Molecular Biology
 Genetics
 Statistics

Forensic DNA Typing - Butler Series**Edition****Author**

	Edition	Author
Forensic DNA Typing	2nd	Butler, John M.
Fundamentals of Forensic DNA Typing	3rd	Butler, John M.
Advanced Topics in Forensic DNA Typing: Methodology	3rd	Butler, John M.
Advanced Topics in Forensic DNA Typing: Interpretation	3rd	Butler, John M.

Other Forensic Science Books**Edition****Author**

	Edition	Author
Criminalistics, An Introduction to Forensic Science	7th or higher	Saferstein, R.
Forensic DNA Evidence Interpretation	2nd	Buckleton, J., Bright, J., Taylor, D.

Guidance and Standards Documents (utilize most recent versions Edition**Author**

	Edition	Author
ISO/IEC 17025: General Requirements for the Competence of Testing and Calibration Laboratories		ANSI
ISO/IEC 17025: Forensic Science Testing and Calibration Laboratories Accreditation Requirements	AR 3125	ANAB
Quality Assurance Standards for Forensic DNA Testing Laboratories		FBI
Quality Assurance Standards for DNA Databasing Laboratories		FBI
Interpretation Guidelines for Autosomal STR Typing by Forensic DNA Testing Laboratories		SWGDM
National DNA Index System (NDIS) Operational Procedures Manual		FBI
CODIS and NDIS Fact Sheet		FBI (website)
Rules of Professional Conduct		American Board of Criminalistics