

**FORENSIC SCIENCE MASTERS OF SCIENCE PROGRAM
2010 PROGRAM ASSESSMENT**

I. Forensic Science M.S. Program Mission Statement

It is the mission of the Marshall University Forensic Science Center & Graduate Program to provide quality forensic science education and training in advanced forensic analysis, to promote, investigate, and validate innovative technologies which serve to improve the criminal justice system, and to strive to improve the interface between science and the law in the promotion of truth and justice in our community, state and nation.

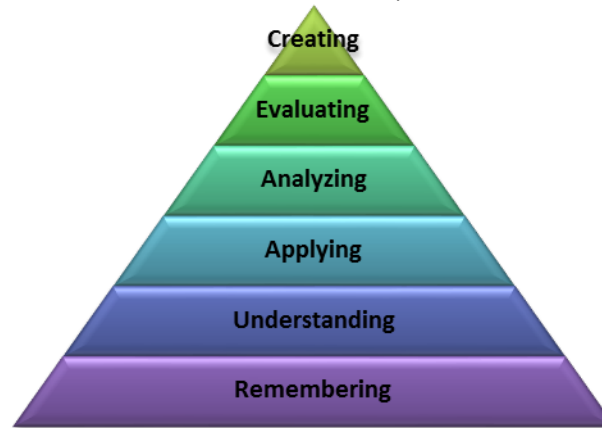
Forensic Science M.S. Program Vision Statement

The Marshall University Forensic Science Graduate Program will demonstrate leadership in forensic science in order to:

- Provide affordable, high quality forensic science graduate education appropriate for the nation, state and the region.
- Provide forensic science services and resources to promote student learning, retention, and academic success.
- Foster faculty, staff, and student outreach through forensic science service activities.
- Provide a safe and secure work environment.
- Provide instruction in forensic science using appropriate and innovative modes of delivery.
- Provide forensic science education, training, and community services that serve society and the forensic science community.
- Promote forensic science student involvement in economic development activities that involve research, collaboration, and technological innovations.
- Model and promote the Marshall University Creed and MU Statement of Ethics, AAFS Good Forensic Science Practices, AAFS Code of Ethics, ABC Rules of Professional Conduct, and ASCLD Code of Ethics.
- Remain current in the field of forensic science while incorporating enhanced knowledge, skills, and abilities into the educational process.
- Improve instruction through the use of innovative teaching methods that promotes students learning and the development of critical thinking skills fundamental to becoming life-long learners.
- Contribute to the expansion of the forensic science body of knowledge through education, training, research and other services.
- Actively engage and mentor students in scholarly and creative endeavors.
- Regularly review the forensic science curriculum, degree, and programs offered, and recommend necessary additions and deletions to meet changing needs of the forensic science profession.
- Develop a positive, just, and equitable workplace for forensic science students and staff.
- Encourage and enhance student ability to use their knowledge, creativity, and critical thinking skills to make their communities better places in which to live.
- Secure funding to support forensic science scholarship and creative endeavors, faculty and staff development, and state-of-the-art classrooms and laboratory facilities.
- Facilitate the Forensic Science Program and Center's achievement of its mission and vision; communicate the vision, mission, goals, achievements, and difficulties of the Forensic Science Center and Graduate Program in a clear, effective, and forthright manner to both internal and external constituencies.

II. Student Learning Outcomes and Definitions

Anderson & Krathwohl's Taxonomy 2000¹



STUDENT LEARNING OUTCOMES

DEFINITIONS

Remembering	Retrieving, recalling, or recognizing knowledge from memory. Remembering is when memory is used to produce definitions, facts, or lists, or recite or retrieve material.
Understanding	Constructing meaning from different types of functions be they written or graphic messages activities like interpreting, exemplifying, classifying, summarizing, inferring, comparing, and explaining.
Applying	Carrying out or using a procedure through executing, or implementing. Applying related and refers to situations where learned material is used through products like models, presentations, interviews or simulations.
Analyzing	Breaking material or concepts into parts, determining how the parts relate or interrelate to one another or to an overall structure or purpose. Mental actions included in this function are differentiating, organizing, and attributing, as well as being able to distinguish between the components or parts. When one is analyzing he/she can illustrate this mental function by creating spreadsheets, surveys, charts, or diagrams, or graphic representations.
Evaluating	Making judgments based on criteria and standards through checking and critiquing. Critiques, recommendations, and reports are some of the products that can be created to demonstrate the processes of evaluation. In the newer taxonomy evaluation comes before creating as it is often a necessary part of the precursory behavior before creating something.
Creating	Putting elements together to form a coherent or functional whole; reorganizing elements into a new pattern or structure through generating, planning, or producing. Creating requires users to put parts together in a new way or synthesize parts into something new and different a new form or product.

¹ Krathwohl, D. R, Anderson, L. W. (2001) Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives.

Student Learning Outcomes Mapping

Student Learning Outcomes	FSC 604	FSC 606	FSC 612	FSC 618	FSC 622	FSC 623	FSC 624	FSC 630	FSC 632	FSC 665	FSC 680	MTH 519
Remembering	X	X	X	X	X	X	X		X	X		X
Understanding	X			X			X					X
Applying		X	X	X		X	X	X		X	X	X
Analyzing	X	X	X	X	X		X					
Evaluating		X	X		X		X	X				
Creating		X	X				X	X				

III. ASSESSMENT ACTIVITIES

Student Learning Outcomes	Type	MEASUREMENTS		PLAN OF ACTION FOR IMPROVEMENT	
		Course	Frequency	Review Data	Implement Changes Effective
Remembering	Exams, Quizzes	FSC 604, FSC 606, FSC 612, FSC 618, FSC 622, FSC 623, FSC 624, FSC 632, FSC 665, MTH 519	1-3 times a semester	End of every semester	Continuous
Understanding	Exercises/Homework	FSC 604, FSC 618, FSC 624, MTH 519	Weekly	End of every semester	Continuous
Applying	Lab Reports, Presentations, Forensic lab work	FSC 606, FSC 612, FSC 618, FSC 623, FSC 624, FSC 630, FSC 665, FSC 680, MTH 519	Presentation – yearly Lab reports – varies per course	End of every semester	Continuous
Analyzing	Internship, Mock Crime Scene, Mock Trial, Forensic lab work	FSC 604, FSC 606, FSC 612, FSC 618, FSC 622, FSC 624	Internship – entire semester, Mock – Every semester, Lab work – multiple times a semester	End of every semester	Continuous
Evaluating	Internship, Mock Crime Scene, Mock Trial, Forensic lab work	FSC 606, FSC 612, FSC 622, FSC 624, FSC 630	Internship – entire semester, Mock – Every semester, Lab work – multiple times a semester	End of every semester	Continuous
Creating	Internship, Mock Crime Scene, Mock Trial, Forensic lab work	FSC 606, FSC 612, FSC 624, FSC 630	Internship – entire semester, Mock – Every semester, Lab work – multiple times a semester	End of every semester	Continuous

A. Assessment Measures (Tools) & Benchmarks

Program Student Learning Outcomes	FSC 604	FSC 606	FSC 612	FSC 618	FSC 622	FSC 623	FSC 624	FSC 630	FSC 632	FSC 665	FSC 680	MTH 519
Competency in Forensic Biology	X						X					X
Competency of Controlled Substances					X	X						
Competency of Trace Analysis			X		X	X						
Competency of Toxicology					X	X						
Competency of Latent Prints		X		X								
Competency of Questioned Documents				X								
Competency of Fire Debris					X	X						
Competency of Firearms & Toolmarks				X								
Competency of Crime Scene Investigation		X										
Competency of Digital Forensics									X			
Competency of Safety practices and guidelines	X	X				X		X			X	
Application of knowledge and skills learned in mock or real-world situations								X				
Ethics: Conflict of interest, Professional integrity, Objectivity, and Professional obligations					X	X		X			X	

RESEARCH PROJECT PRESENTATION RUBRIC

Course _____ Presenter _____ Date _____

Write the presenters last name in the Name box of the Scantron form (you don't need to bubble it in).

Please write the score and bubble it in on the Scantron form. Scantron Key: Based on the score achieved in each row, complete the Scantron form as follows: 1 = A; 2 = B; 3 = C; 4 = D

	Criteria	1 (A)	2 (B)	3 (C)	4 (D)	Score
	Nonverbal Skills					N/A
1	Eye Contact	Does not attempt to look at audience at all, reads notes the entire time	Only focuses attention to one particular part of the class, does not scan audience	Occasionally looks at someone or some groups during presentation	Constantly looks at someone or some groups at all times	
2	Facial Expressions	Has either a deadpan expression of shows a conflicting expression during entire presentation	Occasionally displays both a deadpan and conflicting expression during presentation	Occasionally demonstrates either a deadpan OR conflicting expression during presentation	Gives audience clues to what the content of speech is about; Appropriate expression, never notice a deadpan or conflicting expression	
3	Gestures: Examples of distractions: making audible sounds, heavy breathing, messing with hair, twisting and turning, pacing back and forth, or any other distracting gesture.	Gestures were very distracting	Gestures were somewhat distracting	Gestures were fairly effective.	Effective use of gestures were demonstrated	
4	Posture & Professional Appearance	Sits during presentation or slumps; and/or questionable appearance for a formal presentation	Body language suggests lack of confidence; leans or looks down more than not; and/or unprofessional appearance	Occasionally slums during presentation; body language suggests confidence; appearance appropriate for presentation	Stands up straight with both feet on the ground; body language suggests exceptional confidence; highly professional appearance	
	Vocal Skills					N/A
5	Enthusiasm & Volume	Showed absolutely no	Showed minimal	Somewhat enthusiastic	Demonstrated a strong positive feeling about	

		interest in topic presented OR volume low OR demonstrated no confidence	interest in the topic OR volume was average OR lack of confidence was detected	about subject; volume was appropriate; lack of confidence or over confidence was detected.	topic during entire presentation; vocal quality was good; the presenter exuded confidence.	
6	Vocalized Pauses (uh, well uh, um)	So many that they are very distracting	Enough that it becomes somewhat annoying and/or distracting	Could be reduced for greater effectiveness	No or very few vocalized pauses/distracters noted.	
	Content					N/A
7	Title	Audience has no idea what the presentation is on		Vaguely tells audience what presentation is over	Clearly describes what the presentation is covering	
8	Timing	Presentation was less than minimum time	Presentation was more than maximum time		Presentation fell within required time frame	
9	Graphics	Poor, distracted audience and hard to read	Added nothing to presentation	Thoughts were articulated clearly, but were not engaging	Graphics enhanced presentation, all thoughts articulated and kept my interest	
10	Completeness of Content	One or more points left out	Majority of points glossed over	Majority of points covered in depth, some points glossed over	Thoroughly explains all points; meticulously stepped the audience through the study, its findings and importance	
11	Professionalism & Presentation	Mumbles; audience has difficulty hearing, confusing	Thoughts did not flow, not clear, does not engage audience	Thoughts articulated clearly, though does not engage audience	Presentation was presented at a professional level; interest level of the receiver was maintained	
12	Introduction	Did not clearly address the purpose in	Vaguely addressed the purpose in opening	Most, but not all important purposes were addressed in	Clearly summarized the purpose in opening remarks	

		opening remarks	remarks	opening remarks		
13	Abstract	Abstract contained grammatical, spelling, or errors in scientific notation. Less than 50 or more than 120 words.	Major points within the abstract are missing such as the purpose, approach taken, major findings, conclusions and future directions.	Some, but not all, major points were addressed.	All major points were addressed to include the purpose, approach taken, major findings, conclusions, and future directions.	
14	References	Less than 3 references are listed from peer-reviewed journals or within the past 5 years; convention for references was inconsistent	3 references are listed from peer-reviewed journals or within the past 5 years; convention for references was predominately consistent	4 references are listed from peer-reviewed journals or within the past 5 years; essential elements were present but no standard convention was used	5 or more references are listed from peer-reviewed journals or within the past 5 years; an acceptable reference convention was used.	
15	Discussion & Conclusions	Discussion section missing or not discussed	Results not tied back to original hypothesis or question investigated	Minimal linkage to original hypothesis or question or new questions or direction not presented	Results are clearly tied back to original hypothesis or question with new questions or directions presented	
16	Acknowledgements	None present	Present but incomplete		Supervisor(s) and faculty are acknowledged	

Evaluator (Print) _____ Evaluator (Signature) _____

Overall Interpretation

A = Excellent performance; 57.6-64 points B = Average to good performance; 51.2-57.5 points

C = Needs improvement; requires documented improvement to receive a B or better; 44.8-51.1 points

D = Unacceptable; repeat performance required until a grade of B or better is achieved; < 44.8 points

Course _____ Presenter _____ Date _____

Comments & Recommendations, Action Plan, Follow-up:

FORENSIC SCIENCE RESEARCH PAPER RUBRIC

Student Name _____ Course _____ Term _____

Evaluator _____ Date _____

Abstract					
5	4	3	2	1	Score
Clearly summarizes the problem addressed; the approach and major findings and conclusions. No more than 120 words. Includes future directions.	Clearly summarizes the problem addressed; the approach and major findings and conclusions. Includes future directions. Less than 50 or more than 120 words.	Clearly summarizes the problem addressed; the approach and major findings and conclusions. Within word count restrictions. Does not include future directions.	Major points within the summary sections are missing such as within the problem addressed; the approach and major findings and conclusions . May not meet word count requirements.	Abstract is missing.	
Title					
5	4	3	2	1	Score
Concise, descriptive, logical title with no SSF style, grammatical, or spelling errors	Wordy, but logical title with no SSF style, grammatical, or spelling errors	Wordy or non-descriptive title with one SSF style, grammatical, or spelling error	Misleading or illogical title with one SSF style, grammatical, or spelling error	Title misleads or is illogical with a couple misspellings, typos or SSF style errors	
Authorship					
5	4	3	2	1	Score
Primary investigators are listed accurately by full name, title, and agency.	Primary investigator (student), faculty topic advisor, and agency supervisor are listed appropriately.	Primary investigator and one, but not the other, investigator is listed.	Only the primary investigator (student) is listed.		

Introduction: Literature Review					
5	4	3	2	1	Score
<p>Articles reviewed are relevant to the problem being investigated; coverage of previous empirical and theoretical studies is thorough; issues are clearly explained; issues related to the problem are discussed in a logical progression; the number of articles cited is fully sufficient for the task. Full citations for any reference cited in the report using the Scientific Style and Format or other assigned style manual. Minimum of 3 references are within the last 5 years and from peer-reviewed journals.</p>	<p>Articles reviewed are relevant to the problem; coverage of previous empirical and theoretical studies may not be complete; some confusion over concepts or issues may be present; issues related to the problem may not be presented in a logical order; the number of articles is adequate for the task. Full citations using the Scientific Style and Format or other assigned style manual. Minimum of 3 references are within the last 5 years and from peer-reviewed journals.</p>	<p>Some articles reviewed are irrelevant to the problem, or relevant articles from the literature are not reviewed; important information about articles being reviewed may be left out, and/or irrelevant information may be included; confusion about some concepts or issues being discussed; issues related to the problem are not organized in a way which effectively supports the argument, are arranged chronologically, or are arranged article by article; the number of articles is fewer than necessary for the task. Minimum of 3 references are within the last 5 years and from peer-reviewed journals.</p>	<p>Articles reviewed are not directly related to the problem, though they may be in the same general conceptual area; important information from articles is ignored, and irrelevant information is included; lack of understanding of concepts or issues being discussed; presentation of previous research and theory not organized in a logical manner; inadequate number of articles reviewed. Minimum of 3</p>	<p>Research and theory related to current problem is not reviewed or discussed.</p>	

			references are within the last 5 years and from peer-reviewed journals.		
Introduction: Research Question					
5	4	3	2	1	Score
Clearly defined variables: independent, dependent, (or if a non-experimental study, variables to be examined); specific statement as to how variables are to be manipulated and/or measured. "Who cares" statement: why the study was done (relevance); Brief summary of relevant background facts with references; Background clearly leads to the problem or question being addressed; clearly stated hypothesis with predictions.	Clearly defined variables: independent, dependent, (or if a non-experimental study, variables to be examined); general statement as to how variables are to be manipulated and/or measured. Stated in the form of a question. "Who cares" statement is present. Summary of relevant facts with references is present and leads to the problem or question being addressed.	Clearly defined variables: independent, dependent, (or if a non-experimental study, variables to be examined); no statement as to how variables are to be manipulated and/or measured and/or not stated in the form of a question.	Clearly defined variables: independent, dependent, (or if a non-experimental study, variables to be examined); no statement as to how variables are to be manipulated and/or measured and not stated in the form of a question.	Variables are not clearly defined; no statement as to how variables are to be manipulated and/or measured and not stated in the form of a question.	
Research Design					
5	4	3	2	1	Score
Clearly defined variables: independent (levels specified), dependent	Variables identified, but one of the following missing: independent	Variables identified, but two of the following missing:	One variable identified.	No variables clearly identified and/or statement of research design	

(specifies how this variable will be measured), or if a non-experimental study, variables to be examined are clearly explained in terms of levels or measurement.	(levels specified), dependent (specifies how this variable will be measured), or if a non-experimental study, variables to be examined are clearly explained in terms of levels or measurement.	independent (levels specified), dependent (specifies how this variable will be measured), or if a non-experimental study, variables to be examined are clearly explained in terms of levels or measurement.		missing.	
Materials & Methods					
5	4	3	2	1	Score
Contains effective, quantifiable, concisely organized information that allows the experiment (or study) to be replicated; is written so that all information inherent to the document can be related back to this section; identifies sources of all data to be collected; identifies sequential information in an appropriate chronology; contains through, but not redundant, descriptions of procedures.	As in 5, but contains unnecessary or superfluous information or wordy descriptions within the section. Equipment and supplies list are incomplete; description of actual experimental methods accurate.	Presents a study that is definitely replicable; all information in document may be related to this section, but fails to identify some sources of data of presents sequential information in a disorganized, difficult way; may contain unnecessary or superfluous information. Equipment and supplies list absent; procedure could be replicated as described; description of actual experimental methods accurate.	Presents a study that is marginally replicable; parts of the basic design must be inferred by the reader; procedures not quantitatively described.	Describes the study so poorly or in such a nonscientific way that it cannot be replicated.	

Equipment and supplies are listed; procedure could be replicated by someone else with similar skills in the art; report of actual experimental methods are accurate.					
References					
5	4	3	2	1	Score
List of reference citations is complete; all works cited in the body of the paper are listed, but only those works; references are listed in alphabetical order; minimum of 3 are from peer-reviewed, scientific journals.	As in 5, but references are listed that were not cited in the paper;	As in 5, but less than 3 peer-reviewed, scientific journals were cited.	Student has failed to include all references cited in body of the paper; information in the references is incorrect or incomplete .	Reference list is wholly inadequate, incomplete, or missing.	
SSF Format					
5	4	3	2	1	Score
Student has followed all conventions for proper format of a research report as described in the <i>SSF Manual</i> .	Student has made minor deviations in SSF format: e.g., incorrect form of page headers, improper section headings, or incorrect citation format of references.	As in 4, but more serious and consistent errors in SSF format: e.g., subsections are omitted, absence of page headers or numbers, non-SSF-style citation format, improper tense or voice for the paper, figures/tables inserted in	Major errors in SSF format: e.g., major sections of paper omitted, absence of title page, information presented in incorrect sections, critical information omitted, figures or	Paper does not follow SSF format.	

		incorrect location of paper, incorrect information included on title page or critical information omitted, incorrect references to figures and/or tables.	tables left out.		
Writing Quality					
5	4	3	2	1	Score
Student has written elegantly and cogently, using proper grammar, syntax, punctuation, and spelling; the paper has a neat appearance and is free of typographical errors; wording is appropriate to the context; paragraphs are well constructed; paper exhibits a logical “flow” from section to section; student used proper voice for the paper.	As in 5, but with occasional uncorrected typographical errors, or a very few minor errors in spelling, grammar, syntax, or punctuation; however, errors do not detract from the overall ability to convey meaning; the paper is not as elegant as in 5	The paper exhibits numerous typographical errors and repeated errors in basic elements of writing; the student has not expressed ideas with clarity and precision; transitions between paragraphs are awkward; wording of sentences tends to be simplistic in style and content.	The student has displayed serious and consistent problems in basic writing skill; the ability to express ideas is compromised by the poor writing quality.	The paper is seriously deficient in quality of writing.	
Results					
5	4	3	2	1	Score
Presents major findings of the study; Presents data and summarizes observations using graphs and tables; Any trends noticed are	Data presented clearly and with appropriate graph, table or illustration; trends are identified.	Data presented in an unclear fashion; format for data may not be the best.	Results section missing or plagiarized.		

clearly indicated; Data should not be interpreted in this section.					
Discussion & Conclusions					
How do the results relate to the hypothesis or goals of the study? What new questions does the study raise? What new hypotheses might now be formulated? What are the future directions of the work?	Results are clearly tied back to original hypothesis. New questions/hypotheses presented and future work is presented.	Missing either linkage to original hypothesis/question or new questions/future work not presented.	Results not tied back to original hypothesis or question investigated.	Future questions/directions not discussed.	Discussion section missing or plagiarized.
Scientific Accuracy					
5	4	3	2	1	Score
Scientific concepts are presented clearly and explained accurately.	Jargon clearly defined and defined correctly; background correctly describes previous work; no scientific gaffes or inaccuracies.	Some problems with interpreting primary literature cited in report; science mostly correct and accurate.	Inaccuracies in interpreting previous work; scientific concepts inaccurate; materials and methods inaccurate.		
Intellectual Property					
5	4	3	2	1	Score
Trademarks and registrations are consistently noted. Unique reagents and equipment are identified by manufacturer (Name, City,	Trademarks and registrations are mostly noted. Most unique reagents and equipment are identified by manufacturer (Name, City,	Trademarks and registrations are inconsistently noted. Unique reagents and equipment are inconsistently identified by manufacturer	Trademarks and registrations are minimally noted. Unique reagents and	Trademarks and registrations are not noted. Unique reagents and equipment are not identified by manufacturer (Name, City,	

State) upon initial citation.	State) upon initial citation.	(Name, City, State) upon initial citation.	equipment are minimally identified by manufacturer (Name, City, State) upon initial citation.	State) upon initial citation.	
Acknowledgements					
5	4	3	2	1	Score
Acknowledgements are present				Acknowledgements are absent.	
Length					
5	4	3	2	1	Score
Narrative is a minimum of 10 pages, double-spaced. Font is 12. Margins are 1 inch. Pages are numbered.				Narrative is less than 10 pages, double-spaced. Font is more or less than 12. Pages are not numbered.	

Rubric Adapted from: Herdegen, R. T. III (2004) in P. L. Maki, *Assessing for learning*. Sterling, VA: Stylus Publishing, LLC.

Courtesy of Dr. Mary Beth Reynolds, Marshall University.

Promega Corporation, 2800 Woods Hollow Road, Madison, WI. *Grading Rubric for Reporting Experimental Results*.

Huth, Edward J. *Scientific Style and Format: The CBE Manual for Authors, Editors, and Publishers*. 6th Ed. Press Syndicate of the University of Cambridge Publishers. ISBN 0-521-47154-0.

Score Sheet

Category	Weight	Rating	Score
Abstract	4	5	
Title	1	5	
Authorship	1	5	
Introduction: Literature Review	4	5	
Introduction: Research Question	2	5	
Research Design	4	5	
Materials & Methods	4	5	
References	1	5	
Scientific Style & Format SSF	1	5	
Writing Quality	4	5	
Results	4	5	

Discussion & Conclusions	4	5	
Scientific Accuracy	4	5	
Intellectual Property	1	5	
Acknowledgements	1	5	
Length	4	5	

Total points possible = 1100

Points Achieved	Letter Grade
990-1100	A
880 - 989	B
770-879	C
660-769	D
659 or below	F

Comments & Recommendations, Action Plan, Follow-up:

POSTER PRESENTATION EVALUATION RUBRIC

Presenter's Name _____ Date _____ Location: _____

1	Title - Appearance	Scale	Points
	<ul style="list-style-type: none"> Printed across the top of the poster in an easily readable font at 4 ft. distance 	<ul style="list-style-type: none"> 5 points = met all criteria 	
2	Title - Content		
	<ul style="list-style-type: none"> Title conveys succinctly what the study accomplished Title is easy to comprehend by someone in the field of similar skill Title is concise and descriptive title; 	<ul style="list-style-type: none"> 5 points = met all criteria 4 points = met 2 criteria 0 points = met 0 – 1 criteria 	
3	Acknowledgements – Appearance & Content		
	<ul style="list-style-type: none"> Primary author is the student: Name, Degree, Institution or Agency Representing Secondary author is the Internship Supervisor: Name, Degree, Institution or Agency Representing Last author is the MU Topic Advisor: Name, Degree, Institution or Agency Representing Large enough to be read easily from at least 4 feet away; Font was easy to read without being distracting; Consistent font used; Used boldface, underlining, or color to add emphasis; Avoided use of all caps 	<ul style="list-style-type: none"> 5 points = met 6 criteria 4 points = met 5 criteria 3 points = met 4 criteria 2 points = met 3 criteria 0 points = met 0-2 or criteria 	
4	Abstract - Appearance		
	<ul style="list-style-type: none"> Font was large enough to be read easily from at least 4 feet away; Font was easy to read without being distracting; Consistent font used; Used boldface, underlining, or color to add emphasis; avoided use of all caps; Used short sentences, simple words, and bullets to illustrate discrete points; Written material was accurate & concise; Avoided using jargon, acronyms, or unusual abbreviations; 50 – 100 words is the ideal with no more than 120 words 	<ul style="list-style-type: none"> 5 points = met all criteria 4 points = met 7 criteria 3 points = met 6 criteria 2 points = met 5 criteria; 0 points = met 4 or fewer criteria 	
5	Abstract - Content		
	<ul style="list-style-type: none"> One paragraph of proper size 1-2 sentences conveys relevance 1-2 sentences conveys what was tested and why (approach) 1-2 sentences provides summary of results (major findings), 	<ul style="list-style-type: none"> 5 points = met all criteria; 4 points = met 6 criteria 3 points = met 5 criteria 2 points = met 4 criteria; 0 points = met 3 or fewer criteria 	

	<ul style="list-style-type: none"> • 1-2 sentences states conclusions; • 1-2 sentences states significance of results • Tells a brief story with a beginning, middle, and ending; includes the reason (relevance), approach, major findings, and conclusions. 		
6	Introduction - Appearance		
	<ul style="list-style-type: none"> • Font was large enough to be read easily from at least 4 feet away; • Font was easy to read without being distracting; • Consistent font used; • Used boldface, underlining, or color to add emphasis; • Avoided use of all caps; • Used short sentences, simple words, and bullets to illustrate discrete points; • Written material was accurate & concise; avoided using jargon, acronyms, or unusual abbreviations; 	<ul style="list-style-type: none"> • 5 points = met all criteria; • 4 points = met 6 criteria; • 3 points = met 5 criteria; • 2 points = met 4 criteria • 0 points = met 3 criteria 	
7	Introduction – Content	Scale	Points
	<ul style="list-style-type: none"> • Summary and conclusions were clearly stated; • “Who Cares” statement: why the study was done (relevance) • Background clearly leads to the problem or question being addressed • Clearly stated predictions • Introduction has adequate background information and clearly states the question being investigated or the hypothesis being tested. • Hypothesis or question being investigated is clearly articulated and relevance described 	<ul style="list-style-type: none"> • 5 points = met all criteria; • 4 points = met 6 criteria; • 3 points = met 5 criteria; • 2 points = met 4 criteria; • 0 points = met 3 criteria 	
8	Materials & Methods - Appearance		
	<ul style="list-style-type: none"> • Materials & Methods were neat and to the point • Font was large enough to be read easily from at least 4 feet away; • Font was easy to read without being distracting; • Single font used; • Used boldface, underlining, or color to add emphasis; • Avoided use of all caps; • Avoided using jargon, acronyms, or unusual abbreviations; 	<ul style="list-style-type: none"> • 5 points = met all criteria; • 4 points = met 6 criteria; • 3 points = met 5 criteria; • 2 points = met 4 criteria; • 0 points = met 3 criteria or less 	
9	Materials & Methods - Content		
	<ul style="list-style-type: none"> • Equipment and supply information was provided • Describes what the scientist ACTUALLY did • Standard laboratory procedures are mentioned but not explained in detail, • Special steps and methods are explained thoroughly; • Detailed enough that someone with the similar knowledge and experience could repeat the experiment 	<ul style="list-style-type: none"> • 5 points = met all criteria; • 4 points = met 6 criteria; • 3 points = met 5 criteria; • 0 points = met 4 or fewer criteria 	

	<ul style="list-style-type: none"> • Used short sentences, simple words, and bullets to illustrate discrete points; • Section was accurate & concise; • Written in passive voice 		
10	Summary & Conclusions - Appearance		
	<ul style="list-style-type: none"> • Font was large enough to be read easily from at least 4 feet away; • Font was easy to read without being distracting; • Consistent font used; • Used boldface, underlining, or color to add emphasis; • Avoided use of all caps; 	<ul style="list-style-type: none"> • 5 points = met all criteria; • 4 points = met 5 criteria; • 3 points = met 4 criteria; • 2 points = met 3 criteria; • 0 points = met 0-2 or fewer criteria 	
	Summary & Conclusions - Content		
11	<ul style="list-style-type: none"> • Were clearly stated; • Were accurate & concise; • Used short sentences, simple words, and bullets to illustrate discrete points; • Avoided using jargon, acronyms, or unusual abbreviations; • Reported interpretation of results in this section; • Answered the original question or hypothesis • Provided recommendations for future studies 	<ul style="list-style-type: none"> • 5 points = met all criteria; • 4 points = met 5 criteria; • 3 points = met 4 criteria; • 2 points = met 3 criteria; • 0 points = met 3 or fewer criteria 	
12	Results - Appearance		
	<ul style="list-style-type: none"> • Font was large enough to be read easily from at least 4 feet away; • Font was easy to read without being distracting; single font used; • Used boldface, underlining, or color to add emphasis; avoided use of all caps; • Used short sentences, simple words, and bullets to illustrate discrete points; • Written material was accurate & concise; • Avoided using jargon, acronyms, or unusual abbreviations; 	<ul style="list-style-type: none"> • 5 points = met all criteria; • 4 points = met 5 criteria; • 3 points = met 4 criteria; • 2 points = met 3 criteria; • 0 points = met 2 or fewer criteria 	
13	Results – Content	Scale	Points
	<ul style="list-style-type: none"> • Were clearly stated; Were accurate & concise; • Each chart, graph, or figure has a legend • Each graph’s axes are labeled • Used short sentences, simple words, and bullets to illustrate discrete points; • Avoided using jargon, acronyms, or unusual abbreviations; • Report interpretation of results in this section; • Answer your original question or hypothesis 	<ul style="list-style-type: none"> • 5 points = met all criteria; • 4 points = met 5 criteria; • 3 points = met 4 criteria; • 2 points = met 3 criteria; • 0 points = met 2 or fewer criteria 	
14	Images (graphs, charts, photos, etc.)		
	<ul style="list-style-type: none"> • At least 50% of the poster consisted of graphics; • Captions were brief yet self-explanatory; minimal 	<ul style="list-style-type: none"> • 5 points = met all criteria; • 4 points = met 5 criteria; 	

	<ul style="list-style-type: none"> amount of text was used in captions; Graphic materials were visible from a distance of 4 feet; Only essential information was used in graphs and tables; Data lines in graphs labeled directly using large fonts and color; used color to distinguish different data groups in graphs; graphics were emphasized; Information on the poster flowed from left to right and from top to bottom arranged in 3-4 vertical columns 	<ul style="list-style-type: none"> 3 points = met 4 criteria; 2 points = met 3 criteria; 0 points = met 2 or fewer criteria 	
15	References - Appearance		
	<ul style="list-style-type: none"> References were large enough to be read easily from at least 4 feet away; Consistent font was used 	<ul style="list-style-type: none"> 5 points = met all criteria 4 points = met 1 criteria 0 points = met 0 criteria 	
16	References - Content		
	<ul style="list-style-type: none"> Full citations for any reference cited in the report using the Scientific Style and Format or other assigned style. At least 3 references from peer-reviewed scientific literature within the past 5 years No more than 7 references cited 	<ul style="list-style-type: none"> 5 points = met all criteria 4 points = met 2 criteria 3 points = met 1 criteria 0 points = met 0 criteria 	
17	Presenter – Appearance		
	<ul style="list-style-type: none"> Hair was neatly groomed Clothing was clean and neatly pressed Clothing was business attire Shoes were clean Shoes were business attire Nails were clean and neat 	<ul style="list-style-type: none"> 5 points = met all criteria 4 points = met 5 criteria 3 points = met 4 criteria 2 points = met 3 criteria 1 point = met 2 criteria 0 points = met 0-1 criteria 	
18	Overall Presenter - Delivery		
	<ul style="list-style-type: none"> Posture was good ; Gestures were not distracting Presentation was engaging; audience asked questions or made comments Told a brief story with a beginning, middle, and ending; included the reason (relevance), approach, major findings, and conclusions. Made good use of items on the poster Explained graphs and charts Gave good responses to questions Made good eye contact Correct pronunciation was used Speaking rate was effective; Timing was correct A paper handout of the poster was made available Presentation was clear and easy to understand Appeared well prepared 	<ul style="list-style-type: none"> 20 points = Excellent Delivery 15 points = Average Delivery 0 points = Below Average Delivery 	

Comments & Recommendations, Action Plan, Follow-up:

LAY AUDIENCE PRESENTATION RUBRIC

Course _____ Presenter _____ Date _____

Scantron Key: Based on the score achieved, complete the Scantron form as follows:

1 = D 2 = C 3 = B 4 = A

	Criteria	1	2	3	4	Score
	Nonverbal Skills					N/A
1	Eye Contact	Does not attempt to look at audience at all, reads notes the entire time	Only focuses attention to one particular part of the class, does not scan audience	Occasionally looks at someone or some groups during presentation	Constantly looks at someone or some groups at all times	
2	Facial Expressions	Has either a deadpan expression or shows a conflicting expression during entire presentation	Occasionally displays both a deadpan and conflicting expression during presentation	Occasionally demonstrates either a deadpan OR conflicting expression during presentation	Gives audience clues to what the content of speech is about; Appropriate expression, never notice a deadpan or conflicting expression	
3	Gestures	No gestures are noticed			Natural hand gestures are demonstrated	
4	Posture	Sits during presentation or slumps		Occasionally slumps during presentation	Stands up straight with both feet on the ground.	
	Vocal Skills					N/A
5	Enthusiasm	Shows absolutely no interest in topic presented	Shows some negativity toward topic presented	Occasionally shows positive feelings about topic	Demonstrates a strong positive feeling about topic during entire presentation	
6	Vocalized Pauses (uh, well uh, um)	10 or more are noticed	6-9 are noticed	1-5 are noticed	No vocalized pauses noticed	
	Content					N/A
7	Title	Audience has no idea what the presentation is on		Vaguely tells audience what presentation is over	Clearly describes what the presentation is covering	
8	Time frame	Presentation is less	Presentation is more		Presentation falls	

		than minimum time	than maximum time		within required time frame	
9	Graphics	Poor, distracts audience and is hard to read	Adds nothing to presentation	Thoughts articulated clearly, but not engaging	Graphics enhances presentation, all thoughts articulated and keeps interest	
10	Completeness of Content	One or more points left out	Several points glossed over	Majority of points covered in depth, some points glossed over	Thoroughly explains all points	
11	Professionalism of Presentation	Mumbles, audience has difficulty hearing, confusing	Thoughts don't flow, not clear, does not engage audience	Thoughts articulated clearly, though does not engage audience	Presentation is organized and the interest level of the audience is maintained	
	Appearance					
12	Hair	Disheveled appearance; not neat or clean	Somewhat clean, neat, and conservatively styled	Clean and neat; not conservatively styled	Clean; neatly and conservatively styled	
13	Clothing	Wrinkled, stained or too casual	Male: jacket and tie are missing; Female: blouse or top is revealing and/or does not provide full coverage.	Male: Jacket or tie is missing. Female: Blouse or top is neat, clean, and professional.	Male: Jacket, shirt, and tie provide a professional appearance. Female: Top or blouse provides a distinguished or professional appearance.	
14	Shoes	Shoes are open-toed; scuffed; and/or dirty. Tennis, jogging, or open-toed shoes are worn.	Tennis shoes are worn but are neat and clean. Sandals are worn.	Shoes are casual but neat and clean; go well with attire.	Shoes appropriate for a suite are worn.	

Evaluator (Print) _____ Evaluator (Signature) _____

Presentation Evaluation Grading:

A = Excellent: 50-56 pts.

B = Acceptable: 45-49 pts.

C = Below Average; must demonstrate improvement; requires meeting with instructor; 39-44 pts.

D = Unacceptable; must repeat presentation within the term; requires meeting with instructor: 34-39 pts.

F = Failing Grade; Course must be repeated in a subsequent term; requires meeting with instructor; less than 34 pts.

Comments & Recommendations, Action Plan, Follow-up:

IN-HOUSE COMPREHENSIVE EXAMINATION

Forensic Science students are required to pass a comprehensive written examination to be eligible for graduation. No more than two assessments are permitted. Failure to pass the comprehensive examination will result in the student being placed on probation during which time they must meet with their examining committee to discuss their deficiencies and identify strategies to correct them. Re-testing must be scheduled for a subsequent term. When students fail the second reassessment, the department will recommend their dismissal by the Graduate College.

The Comprehensive Examination is a day-long examination covering seven areas:

- Crime Scene and Death Investigation
- Forensic Analytical Chemistry
- Forensic Comparative Sciences
- Forensic Microscopy and Trace Analysis
- Foundations and Fundamentals of Digital Evidence
- Genetics and DNA Technologies
- Legal Issues in Forensic Science

Four weeks prior to the Examination, students are permitted to review their previous exams. These exams are on reserve in the Forensic Science Program Office. A designated area will be made available for exam review. Under no circumstances should these exams be copied nor should these exams be removed from the premises. Possession of current or past exams outside the Forensic Science Center is prohibited.

ACCESS AND USE OF PAST-EXAMS

Past exams will be available for review Monday through Friday from 8 AM to 4 PM during the month of March. Exams are the property of the Forensic Science Program and cannot be copied. Notes may be taken during this time for study purposes only. Notes created from these exams must be returned to the Program on the day of the comprehensive examination and should not, under any circumstances, be viewed by anyone other than you. Exams cannot be taken off premises and must be checked-out and returned daily to a program official. We ask for your compliance in this matter so we can continue this activity in the future.

COMPREHENSIVE EXAM GRADING POLICY

The Instructor is responsible for exam content, submission of raw and scaled scores, pass/fail calls, and a statement of grading policy. The Instructor is also responsible for responding to any grievance filed regarding their section of the examination.

The Program Office assumes no responsibility for individual scores, calls, or grading policies but is available to administer and grade exam sections under the written guidance of the Instructor.

When all scores, interpretations, and standardized grading policies are received by the Program Office from the Instructor, the Comprehensive Examination Subcommittee made up of regular faculty will determine the Overall Pass/Fail designation for each student based on the following:

The student will fail the overall exam if:

- Any single section is below 70%
- Two or more sections are in the 70-79% range.

Students will be notified by the Program Office in writing based on the Comprehensive Exam Subcommittee's recommendations. The report will state Pass or Fail for each section and the class rank for each subject area. The retake policy will also be provided if the student fails the exam.

RETAKE POLICY

Students are permitted one opportunity to retake the exam consisting of all sections failed which will consist of one sitting. The retake exam cannot be scheduled during the term in which the initial exam was failed. The student may schedule this exam anytime within the subsequent term or thereafter but must be passed within the Graduate College 7 year restriction for completion of an MS degree. Should the student receive a failing grade on the second exam, the Forensic Science Program will recommend his/her dismissal from the Forensic Science Program.

The Comprehensive Examination Subcommittee is responsible for reviewing all individual calls, raw scores versus scaled scores, and approval of methods used for deriving the final scores and calls. The Comprehensive Examination Subcommittee will also make recommendations, if need be, for improving this policy, procedure, and exam content to improve consistency across all sections and item analysis for reliability.

ASSESSMENT OF THE GRADUATE STUDENT'S KNOWLEDGE, SKILLS, ATTITUDES & BEHAVIORS RUBRIC

Student Full Name _____

Evaluator _____ Evaluator E-mail _____

Phone _____ Department: _____

Semester: _____ Year: _____

Area of Assignment: Arson & Explosives Crime Scene Digital Forensics DNA
 Drug Evidence Handling Fire Arms & Toolmarks
 Microscopy Toxicology Other (List) _____

INSTRUCTIONS:

When completing this evaluation form, rate the degree of effectiveness which best describes the student's terminal level of performance. When rating the student, assessors are asked to base their evaluation on the amount of education and experience that the student has at the time of assessment.

RATING SCALE:

Points	Grade	Description of Student Performance
5	A	<ul style="list-style-type: none"> • Demonstrates excellent performance for a student with no previous work experience. • Performs above those with similar education and experience. • Rarely requires assistance in evaluation of situations and solutions. • Student shows exceptional attention to detail.
4	B	<ul style="list-style-type: none"> • Demonstrates good performance for a student with no previous work experience. • Performs equal to those with similar education and experience. • Sometimes requires assistance in evaluation of situations and solutions.
3	C	<ul style="list-style-type: none"> • Demonstrates moderately consistent performance. • Performs above and below those with similar education and experience. • Often requires assistance in evaluation of situations and solutions.
0	D	<ul style="list-style-type: none"> • Demonstrates moderately inconsistent performance. • Performs below, more than above, as compared to other interns with similar education and experience.
0	F	<ul style="list-style-type: none"> • Demonstrate difficulty grasping important concepts. • This person may make errors that they may, or may, not reveal.

Note: Individuals receiving grades of D or F receive zero (0) points. The reason for such a grade should be well documented.

I. SKILLS AND COMPETENCY IN PERFORMANCE OF TESTS	Points/Grade	Comments
A. Manual Dexterity – Learns techniques quickly and rarely has accidents or makes mistakes. Repeats resulting from technical error are rare.		
B. Precision & Accuracy – Consistently performs tests and follows procedures with precision and accuracy.		
C. Handling Instruments – Operates instruments skillfully and makes adjustments as appropriate and alerts the appropriate person when repairs are needed.		

II. UNDERSTANDING AND APPLICATION OF KNOWLEDGE	Points/Grade	Comments
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A. Application of Knowledge – Excellent grasp of theory; applies what was instructed well.		
B. Case Correlation – Correlates test results with other evidence data; notes are thorough and legible; performs confirmatory tests where appropriate and calls unusual findings to supervisor’s attention immediately.		

III. CAREFULNESS AND CONCERN FOR ORDER AND CLARITY	Points/Grade	Comments
A. Evidence and Reagent Identification – Confirms identity of evidence; follows accepted labeling procedures.		
B. Adherence to Established Protocol – Adheres strictly; does not take shortcuts; always adheres to safety procedures.		
C. Reporting of Case Findings – Accurate and legible. Appropriate for court testimony. An individual with similar skill could read and interpret written case findings without ambiguity.		
D. Maintenance of Laboratory – Leaves equipment and working area clean and in good order; replenishes supplies; places orders as needed to avoid disruption in workflow.		

IV. EFFICIENCY AND ORGANIZATION	Points/Grade	Comments
A. Judgment of Priorities and Organization – Organizes for priority and efficiency; can perform multiple procedures simultaneously without making errors; works efficiently; anticipates future needs and plans accordingly; meets timeline expectations of superiors. Remains on task while avoiding distractions.		
B. Time Element – Works under time and volume pressure without the loss of accuracy or composure. Makes good use of time. Handles interruptions skillfully.		

V. INTERPERSONAL RELATIONSHIPS	Points/Grade	Comments
A. With Clients – Demonstrates awareness of feelings; reassures if frightened; treats considerately. Always professional.		
B. With Colleagues – Helps others willingly. Able to associate well with different personality types.		
C. With Supervisor – Receptive to constructive criticism; asks questions concerning improvement and indicates appreciation for guidance.		

VI. DEPENDABILITY AND INTEGRITY	Points/Grade	Comments
A. Attendance and Punctuality – Arrives on time, begins work promptly. Notifies well in advance of expected absence.		
B. Ethics – Treats evidentiary information as confidential unless a need to know can be justified and documented. Performs work to the best of his/her ability. Maintains a neutral, unbiased position		

regarding evidence testing and reporting.		
C. Work Performance – Conscientious. Always prepared and seeking new knowledge. Remains on task until the work is completed.		
D. Mistakes – Admits readily and takes immediate steps to correct.		
E. Perseverance – Good concentration and undertaking in spite of difficulties.		

VII. COMMUNICATION	Points/Grade	Comments
A. With Public, Juries, Officers of the Court, Attorneys, or other Non-scientists – Demonstrates the appropriate communication skills and confidence to provide and document explicit information using easy-to-understand analogies and appropriate terminology to understanding appropriate for the specific circumstance.		
B. With Law Enforcement Officers or Agencies – Able to communicate consumption needs, need to test additional items, quarantined items, etc. to facilitate the desired outcome.		
C. With Supervisors and Colleagues - Listens carefully and repeats to check for accurate comprehension.		
D. Oral Communication Skills - Has good personal and professional interpersonal skills; is an effective communicator.		
E. Written Communication Skills – Provides clear and concise laboratory reports. All elements of the research paper score in the upper 25% on all rubric components.		

VIII. PERSONAL APPEARANCE AND GROOMING	Points/Grade	Comments
A. Grooming – Demonstrates good personal hygiene for a professional appearance.		
B. Dresses for the Occasion – Interprets the dress code with demonstrated skill. Skillfully distinguishes between what is, and is not, appropriate usual attire.		
C. Prepares for the Unexpected – Appearance is appropriate for changing circumstances.		
D. Representing the Organization – Recognizes, by dressing appropriately, that he/she represents their supervisor, employer, organization, city, and state. By dressing appropriately, understands the concept of “first impressions”.		

IX. PROFESSIONAL VALUES AND ETHICS	Points/Grade	Comments
A. Respect & Gratitude - Recognizes their responsibility to show respect and gratitude for the help, guidance, and constructive criticism provided by other individuals.		
B. Nonmaleficence - Recognizes their responsibility for nonmaleficence (refraining from harming one’s self or another).		
C. Beneficence - Recognizes their responsibility for beneficence		

(doing good work or bringing about good).		
D. Fidelity - Recognizes their responsibility for fidelity (keeping one's word).		
E. Veracity - Recognizes their responsibility for veracity (to tell the truth and not to deceive someone).		
F. Reparation - Recognizes their responsibility for reparation (to apologize if or admit mistakes).		

GREATEST STRENGTH:

AREA(S) THAT NEED IMPROVEMENT:

ADDITIONAL COMMENTS:

ASSESSMENT GRADING SCALE:

Total each column and add together the points to derive a total point value (TPV). Divide the TPV by the number of applicable assessment items to determine the evaluation score.

#A's: _____ x 5 = _____

#B's _____ x 4 = _____

#C's _____ x 3 = _____

#D's _____ x 0 = _____

#F's _____ x 0 = _____

Total - _____ divided by total applicable items = _____

(Assessment Score)

Average	Interpretation	Percentage
3.00 – 3.32	C	75
3.33 – 3.66	C+	79
3.67 – 3.99	B-	82
4.00 – 4.32	B	85
4.33 – 4.66	B+	89
4.67 – 4.99	A	95
5.00	A+	100

INTERN'S ASSESSMENT OF INTERSHIP EXPERIENCE

Intern Name: _____ Internship Sponsor: _____

Internship Address: _____

Date of Internship: _____ Internship Supervisor: _____

Intern: Please respond with your general or overall perceptions to the following statements in reference to your internship experience. All information will remain anonymous. Due date is August 13.

A = Strongly Agree B = Agree C = No Opinion or Not Applicable D = Disagree E = Strongly Disagree

1.	The internship experience was an important aspect of my graduate education.	A	B	C	D	E
2.	My internship was relevant to my field of study.	A	B	C	D	E
3.	My internship improved my self-confidence.	A	B	C	D	E
4.	My internship improved my professional skills.	A	B	C	D	E
5.	I made valuable contacts through my internship.	A	B	C	D	E
6.	My internship will be important to my job search.	A	B	C	D	E
7.	My internship improved my laboratory skills.	A	B	C	D	E
8.	I knew what was expected for my internship.	A	B	C	D	E
9.	My internship helped narrow my career choices.	A	B	C	D	E
10.	I would recommend this internship to others.	A	B	C	D	E

Discuss strengths of this internship:

Discuss any weaknesses of this internship.

Please provide suggestions that the Forensic Science Program could incorporate to improve the internship experience.

FIBER UNKNOWN EXERCISE RUBRIC

FSC 612: Microscopy

NAME: _____

GRADE: _____ / 100 PTS

FORMAT AND SUBMISSION (15pts)

Is the paper on time? (5pt)

Is the paper in the proper format? (2pt)

Are all the prescribed sections included? (2pt)

Was the paper submitted via email as a Word document? (2pt)

Are the tables and figures integrated in the body of the text/paper? (2pt)

Do all tables and figures have captions that briefly explain the table or figure without having to read the body of the paper? (2pt)

INTRODUCTION (7pts)

Is there a scenario of what crime is being investigated? (3pt)

Is there an explanation as to why the evidence is being collected? (2pt)

Is there an explanation as to how the evidence will be analyzed? (2pt)

MATERIALS AND METHODS (29 pts.)

Are all characteristics used to analyze the material defined making sure to include what type of information is gathered and how it is applied? (Characteristics are color, pleochroism, diameter, parallel refractive index, perpendicular refractive index, relief, extinction, isotropic, anisotropic, interference color, birefringence, and sign of elongation.) (12pt)

Is the relationship between interference color, birefringence, and thickness explained? (3pt)

Is the relationship between refractive index and velocity of light explained? (3pt)

How does refractive index relate to isotropic and anisotropic? (2pt)

What does relief tell about refractive index? (2pt)

How is refractive index determined? (2pt)

What is the Becke line and how is it formed? (2pt)

How does the overlapping of two anisotropic materials effect light vibration? (3pt)

RESULTS (18 pts.)

Are all characteristics determined for each unknown? (Characteristics are color, pleochroism, diameter, parallel refractive index, perpendicular refractive index, relief, extinction, isotropic/anisotropic, interference color, birefringence, and sign of elongation.) (18pt)

DISCUSSION AND CONCLUSIONS (31 pts.)

All characteristics summarized for each unknown? (3pt)

Are differentiations logically thought out for identifying each unknown? (9pt)

Is each fiber identified correctly? (15pt)

How was the crime scenario "solved"? (2pt)

What other techniques could have been utilized to assist in the identification of the unknown? (2pt)

CRITERIA FOR GRADING LAB REPORTS

All important items present:

Your name, date, title of experiment (cover sheet should not be used) at the top of the first page. List of other members in group first and last names under your name at top of page.

Some reports will be “group projects” where one report is submitted for the lab section. All names in group should be listed in alphabetical order. This aids me in putting grades in the grade book.

All pages and supporting documentation should be stapled together BEFORE coming to class.

An introduction or abstract is not necessary.

Experimental method section gives all relevant instrumental conditions. The experimental text will be a narrative description of what you actually did (all groups) written in past tense, passive voice. Instrumental parameters are frequently tabulated. See almost any article in a chemistry or forensic journal for an example of format. A simple table of the key variables (volume injected, split ratio, injection temp, column parameters, column temp program, etc.) A print out of the entire GC method would not be acceptable.

Knowns and Unknowns properly identified.

“Sample 1, 2, 3” not sufficient. Use the designation on the vial for unknowns. Improperly identifying a case sample will get the evidence thrown out of court and may allow the perpetrator to walk.

Results and discussion section with supporting documentation (tables, figures, etc.). Some experiments may have a “report form” which is simply filled in with data attached.

Conclusions section is a summary of what you found. See below.

References included where appropriate and in a consistent style.

I prefer *J. Forensic Science* style guide as it is the leading journal in our field. You can check any copy of a JFS article to see what constitutes the proper style. The Forensic library has back issues of JFS.

Conclusions:

Correct ID of unknowns, proper quantity if appropriate, etc.

Statistical conclusions correct. Mean and confidence interval for quantitative data (assuming more than one measurement of unknown). T-tests or other tests properly applied where applicable.

Data presentation:

Tables and figures readable with proper placement of table and figure titles -- Table title at top, Figure title at bottom.

It is best not to imbed tables or figures in the text; but include them following the references (if any). Each table should have its title and number at the top; figure number and title at the bottom. Numbering of tables and figures is sequential in the order that they are referred to in the text. Do not include any tables or figures you do not discuss in some way. Titles for tables and figures should be informative; simply 'Table 1 Data' or 'Figure 2 Calibration Curve' is insufficient. Your title should be sufficient so that if it were separated from the rest of the report the reader understand it. Graphs are figures and numbered as such. Axes on graphs should be clear and show units. Figures and tables should print well in black and white, not requiring color to be understood.

Table and figure titles should be informative enough so that reader does not have to look back at text to understand what is presented. ("Table 1" is not sufficient)

Handwritten titles are permitted for chromatograms, spectra, etc. that are generated by the instrument. Tables or figures imbedded in document should have

Proper number of significant figures used for all data tables and in figures. Just because Excel displays to 8 or 9 decimal places does not mean your data should be presented that way. In general only 3 or at most 4 significant figures should be used.

All numbers in text, tables and figures should have leading zeros if between 0-1; units should be separated from number by a single space throughout. You may use "u" for "μ" if your word processor does not have a symbol function. Word (all versions) does. Likewise the degree symbol should be used for all temperatures. "20 °C" is the proper way to designate a temperature.



TERM PAPER GUIDELINES & CHECKLIST

TERM PAPER GUIDELINES

Purpose: In writing your term paper, you should become familiar with the current literature in some area related to forensic science and develop the ability to synthesize material from several sources into a single critical review of the material. These skills will be needed throughout your career as a forensic scientist regardless of your specialty. Also this will give me additional evidence of your ability to communicate in written form when writing letters of recommendation.

General:

The term paper will be on a topic related to the course material taken from the recent literature (published after 2000). It should be about 5 pages (typed, double spaced) not including tables, figures or references. Although the internet can be useful in locating information, the bulk of the information should be from peer-reviewed, scientific literature. The Marshall Library will electronically get articles for you via interlibrary loan generally within one week (see <http://mulibids.marshall.edu/illiad/logon.html>). I have an extensive collection of forensic papers from journals we do not subscribe to. You should check with me before requesting interlibrary loan. You will be expected to submit your topic and a list of at least three relevant references for approval (see syllabus for due date). A draft of your paper (typed with all figures, tables and references in the final format) will be submitted before the end of the semester (see syllabus). I will review your draft making comments where appropriate for improving your paper. You will have at least a week to make the recommended changes before the final draft is due. When submitting the final paper, attach the draft with my comments to the back.

Format:

The general format of the paper should be a review of the topic with a critical comparison of the information presented in the sources, rather than simply reporting experimental results. See Liu, 1981, *Approaches to Drug Sample Differentiation. I: A Conceptual Review*. JFS 26 (4): 651-655 for a general review format (available in the Forensic library). As with your lab reports, do not use the fancy formatting (italics, lines, etc.) that appear in JFS, however, you should follow JFS (see "Instructions for Authors" handout) for citation of references used with tables and figures following your references rather than embedded in the text. You need not include a list of keywords or your „affiliation“. Table title should be above the table and numbered in the order it is referenced in the text. Figure title should be below the figure and likewise numbered in order cited. For both figures and tables taken from published sources, you should include the reference in the title (i.e. "Taken from Ref. 3").

TERM PAPER CHECKLIST

(Check mark means “meets requirements”; X means “does not meet requirements”)

___ Name on top of first page

___ Title is professional and represents subject of paper

___ General format of paper correct (Introduction, Experimental, Discussion, Conclusion, and References)

___ References cited and in J. Forensic Science format.

___ Tables and Figures (if used) are in J. Forensic Science format and properly referenced as to source.

___ Paper is substantially free of grammatical and spelling errors.

___ Paper is a critical review of methodology used in drug analysis. Adequate data is included to compare two or more studies or methods for the title drug.

___ Two or more current (last 5 yrs.) references from peer-reviewed journals.

___ Substantial portion of material based on these references.



STUDENT SPECIAL ACTIVITIES REPORT

Name: _____

Event: _____

Sponsoring Organization/Agency: _____

Topic/Title: _____

Type (circle): Meeting Workshop Seminar

Presented (circle): Poster Slide Paper Did Not Present

Topic/Title: _____

LOCATION: City, State: _____

Dates Attended: ____ / ____ / ____ through ____ / ____ / ____

If published, what date? _____ Page Number _____

Description of Event: _____

EVALUATION CRITERIA AND ALLOCATION OF WEIGHT FOR THE FORENSIC SEM PROJECT PAPER

FSC 612: Microscopy SEM Section

1. Statements of the problem and/or crime scene scenario: **25%**

2. Methods and Materials (including the collection and preparation of micro evidences) :**10%**

3. Results: **50%**
 - A. Pictorial presentation of photographic evidences: **(35%)**
 - Quality of pictures **(15%)**

 - Quantity of pictures (sufficiency to the solution of the case): **(10%)**

 - Editorial efforts **(10%)**

 - B. Description of pictorial contents: **(15%)**
 - Accuracy **(5%)**

 - Informative and Conciseness **(5%)**

 - Relevance of the Evidences Presented **(5%)**

4. Discussion/Conclusion: **15%**
 - A. Soundness of Logical Arguments based on the evidences presented **(5%)**
 - B. Remarks of the accountability and/or the short-sight of evidences leading to the conclusion **(5%)**
 - C. Implication/application, citation and /or references of this study **(5%)**

FORENSIC SCIENCE PROGRAM EXIT SURVEY

The Forensic Science Program values the opinions and judgments of our students and graduates. Your feedback is important to us as it may serve to influence design, services, and overall quality of the program in years to come. While your response will remain anonymous, compilations of such reports will be used in state, university, and national accreditation reviews.

- (A) Strongly Agree**
- (B) Agree**
- (C) Disagree**
- (D) Strongly Disagree**
- (E) No Opinion or not applicable**

1. Courses were appropriate for my field of study.
2. Instruction was appropriate for my field of study.
3. My advisor was accessible and helpful.
4. When requested, program faculty provided letters of recommendation.
5. Classroom and other physical facilities were adequate.
6. Laboratory exercises and facilities were appropriate.
7. Program computer facilities were appropriate.
8. University library services were appropriate.
9. Program library services were appropriate.
10. Laboratory equipment was adequate for instruction.
11. Student tuition and fees were appropriate.
12. The Program promoted professional activism through memberships and meetings
13. Financial aid, i.e., graduate assistantships, tuition waivers, work-study assignments were appropriate for my needs.
14. My internship experience was an important component of my graduate education.
15. Seminar helped improved my presentation skills.
16. I'm optimistic that my degree will benefit me along a forensic science or related career path.
17. I would recommend this Program to other.

What do you believe are the STRENGTHS of the Forensic Science Program?

What do you believe are the WEAKNESSES of the Forensic Science Program?

Provide any other comments you want to share about your graduate experience.

INSTRUCTOR/COURSE EVALUATIONS

INSTRUCTOR: _____ COURSE: FSC _____ TERM: _____ YEAR _____

1. How have past course/instructor evaluations been used to modify or improve this course?
2. What does this instructor/course evaluation show about the quality and thoroughness of this course?
3. What does this instructor/course evaluation show about the instructor's strengths and weaknesses?
4. What does this instructor/course evaluation show about the course's strengths and weaknesses?
5. Based on this instructor/course evaluation, is there any evidence that strides have been made to improve this course?
6. List and discuss any proposed improvements for the next offering of this course.

Director's Comments and Suggestions:

Instructor Signature: _____ Date: _____

Director Signature: _____ Date: _____

FORENSIC SCIENCE M.S. PROGRAM GRADUATE SATISFACTION SURVEY

Marshall University Forensic Science Program values the opinions and judgments of students who have completed graduate programs or earned degrees. Sharing your views about Marshall will assist faculty in reviewing and revising programs. This survey should take approximately 15 minutes to complete. All replies are anonymous and Marshall University Forensic Science Center will compile and analyze the results.

What was the date of the completion of MSFS degree?

Summer Fall Spring Year _____

Roughly, what percentages of your courses were taught via each of the methods below?

Satellite Internet (WebCT) Traditional classroom with instructor
 Audio or Video Teleconference Computer (Other)
 Videotape with access to instructor Other (Please indicate) _____

What was your average distance you traveled (round-trip) to class?

Less than 20 miles
 21-40 miles
 Over 40 miles

How many semesters did it take you to complete your degree? (Include time to complete thesis or dissertation: summer should be counted as one semester)

_____ Semesters

When you were a student, did you attend classes?

Part-time
 Full-time (at least 9 hours per semester)
 Both

When you were a student, were you employed?

Part-time
 Full-time
 Unemployed
 A Combination of these situations

In terms of financial assistance, please check all that apply:

I did not receive financial assistance.
 Information about financial assistance was available.
 Financial assistance enabled me to pursue graduate degree.

IF YOU EARNED DEGREE IN FORENSIC SCIENCE, PLEASE SELECT THE AREA IN WHICH YOU EMPHASIZED IN: _____

DNA Analysis Forensic Chemistry Computer Forensics Crime Scene N/A

PLEASE RESPOND WITH YOUR GENERAL PERCEPTIONS TO THE FOLLOWING STATEMENTS WITH REFERENCE TO THE PARTICULAR DEGREE OR PROGRAM WHICH YOU COMPLETED. CHECK THE BOX WHICH BEST DESCRIBES YOUR OPINION.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Insufficient Information
1. My coursework was valuable in pursuing my chosen career.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Classroom and other physical facilities provided a comfortable learning environment.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Adequate research resources were available.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Adequate computer facilities were available.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Library services were accessible.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Overall, university services and support systems facilitated my graduate education.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. The faculty stimulated productive student-faculty interaction.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. I was satisfied with the teaching abilities of the full-time faculty.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. I was satisfied with the teaching abilities of the part-time faculty.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. All factors considered, I was satisfied with my graduate program.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Questions 11-13 are specific to students who earned a degree in or completed a professional education program which included a clinical experience, a field-based experience or internship. All other respondents should skip to question 14.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Insufficient Information
11. The experience was clearly defined and structured.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. The experience requirements were valuable in preparation for job functioning.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. My supervisor for this experience was aware of my professional strengths and weaknesses and helped me to improve my professional skills.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

14. What three things do you think should be kept as they were in your graduate program?

15. What three things do you think should be changed in your graduate program?

16. Add any other comments you want to share about your graduate experience.

FORENSIC SCIENCE GRADUATE EMPLOYER SURVEY

Dear Employer: One of our graduates has asked you to complete this survey. The results of these surveys will be compiled in such a way that the anonymity of the evaluator will be ensured. Please complete this form and return it to staton1@marshall.edu. Thank you!

MU Graduate: _____ Year of MU Graduation _____
Agency: _____ Date of Evaluation: _____
Address: _____ Evaluator: _____

May we contact you?

(A) Strongly Agree (B) Agree (C) Disagree (D) Strongly Disagree (E) Not Observed

UNDERLINE the letter that best describes this employee.

- | | | | | | |
|---|---|---|---|---|---|
| 1. Organizational skills are appropriate for the position | A | B | C | D | F |
| 2. Laboratory ability is appropriate for the position | A | B | C | D | F |
| 3. Writing ability is appropriate for the position | A | B | C | D | F |
| 4. Ability to apply new knowledge is appropriate for the position | A | B | C | D | F |
| 5. Interpersonal skills are appropriate for the position | A | B | C | D | F |
| 6. Communication, including presentation, skills are appropriate for the position | A | B | C | D | F |

OVERALL PERFORMANCE OF THE GRADUATE as an EMPLOYEE:

UNDERLINE one of the following statements that you would use to best describe this employee.

- A Achievement of distinction
- B Competent work performance
- C Marginal performance
- D Patently substandard work
- F Other:

Additional Comments regarding this employee and/or Marshall University's Forensic Science Program:

FORENSIC SCIENCE APTITUDE TEST (FSAT)

The FSAT study guide consists of a Job Description, a list of Knowledge, Skills, and Abilities (KSAs), References, and 50 Sample Question primer for the examination.

- The **Job Description** describes the education and background for student candidates.
- The **KSAs** have ten major sections. Sections I-IX covers the core knowledge and skills expected of student candidates. Section X, consisting of the specific, discipline related, in-depth, upper level knowledge, skills, and abilities. Please note that the sub-categories listed under the capital letters in the KSAs are examples and are not meant to be all-inclusive, or to indicate that there will necessarily be a question on the examination from every sub-category.
- The **References** are broken into core references and discipline-related references. The core references are identical for all the ABC examinations. The discipline-related references are specific to each discipline.
- There are fifty **Sample Questions** to give you an idea of the range of content and difficulty that will appear on the examination. For further information, please see “Introduction to ABC Certification Examinations.”

Job Description

The student must be enrolled in a forensic science educational program. This examination is designed for graduating seniors and graduate students.

A qualified student candidate must be able to:

- Understand the major scientific principles behind forensic science analysis.
- Understand how to recognize, collect, secure, and preserve physical evidence.
- Understand how to perform physical, chemical, and/or biological analyses to locate and identify items having evidential value.
- Understand how to interpret and compare analytical data generated from the analyses of physical/chemical evidence and known exemplars.
- Understand how to recognize the potential for forensic examinations in areas outside an area of specialization, prioritize the sequence of examinations, and handle evidence accordingly.
- Evaluate the appropriateness and/or the appropriate method of securing samples.
- Understand the use of laboratory instrumentation.
- Observe safe practices to ensure the safety of analysts.
- Understand legal processes including courtroom testimony, relevant legal decisions and concepts.
- Recognize and employ quality assurance measures to ensure the integrity of the analyses.
- Understand the importance of impartial and ethical work practices.

Study Guide for the FSAT Examination

Knowledge, Skills, and Abilities (KSA)

I. History

- A. Evolution of practice (past practices)
- B. Significant historical figures (e.g., Locard, Gross, Orfila, Kirk)

II. Crime Scene

Preservation

- A. Securing
- B. Isolating
- C. Recording
- D. Searching
- E. Recognition of evidentiary value
- F. Safety

III. Crime Laboratory

Operations – Overview

A. Laboratory

Disciplines

- 1. Forensic biology
- 2. Controlled substances
- 3. Trace analysis
- 4. Toxicology
- 5. Latent fingerprints
- 6. Questioned documents
- 7. Fire debris
- 8. Firearms/Tools
- 9. Digital evidence

IV. QA/QC

A. Accreditation, Certification, Standardization

- 1. Laboratory accreditation
- 2. Personnel certification
- 3. Standardization

B. QA/QC Application

- 1. Definitions
- 2. Validation and verification
- 3. Controls and standard reference materials
- 4. Proficiency Testing

C. Document/Data Management

- 1. Databases
- 2. Case document preservation/integrity

V. Safety

A. Chemical Hygiene

- 1. Safety labeling (MSDS)

B. Universal Precautions

- 1. Blood born pathogens
- 2. Personal protective equipment

C. Hazardous Waste/Biohazardous Waste Handling

- 1. Spill control

VI. Legal

A. Decisions/laws

- 1. *Frye*
- 2. *Daubert* and related decisions

B. Legal terminology

- 1. Subpoena, deposition

C. Court Testimony

- 1. Voir dire/qualification
- 2. Expert witness

D. Procedural Law

- 1. Search and seizure (4th Amendment)
- 2. Discovery

VII. Ethics

A. Professional Ethics

- 1. Conflict of interest
- 2. Professional integrity
- 3. Objectivity
- 4. Professional obligations

VIII. Evidence Handling

A. Evidence

Recognition and Collection

- 1. Prioritization based on circumstance
- 2. Sampling

B. Evidence

Characteristics (Class/Individual)

- 1. Identification
- 2. Primary, secondary transfers
- 3. Visible vs. latent evidence

C. Evidence

Preservation and Integrity

- 1. Chain of custody
- 2. Alteration/degradation

D. Evidence Packaging

- 1. Proper sealing
- 2. Types of packaging

IX. General Science Terms and Principles

A. Definitions and applications

- 1. Scientific Method
- 2. Microscopy
- 3. Instrumentation
- B. General Chemistry Concepts
 - 1. Nomenclature (IUPAC)
 - 2. Type of molecules (e.g., aromatics, isoalkanes)
 - 3. Atomic, molecular weights
 - 4. Acids/bases
 - 5. Periodic Table
 - 6. Elemental Composition
 - 7. Bonding
- C. General Biology Concepts
 - 1. Cell structure
 - 2. Genetics
 - 3. Characteristics of body fluids
- D. General Physics Concepts
 - 1. Energy
 - 2. Electromagnetic spectrum
 - 3. Force
- E. General Physiology and Anatomy Concepts
- F. General Statistics
 - 1. Central tendency
 - 2. Variation
 - 3. Population characteristics
- G. Stoichiometry
- H. Logic
- I. Metric System
 - 1. Metric to metric conversion
 - 2. Metric to English conversion
- X. Theory and Application
 - A. Forensic biology
 - 1. Analytical Techniques
 - 2. Instrumentation
 - 3. Data Interpretation
 - B. Controlled substances
 - 1. Analytical Techniques
 - 2. Instrumentation
- 3. Data Interpretation
- C. Trace analysis
 - 1. Analytical Techniques
 - 2. Instrumentation
 - 3. Data Interpretation
- D. Toxicology
 - 1. Analytical Techniques
 - 2. Instrumentation
 - 3. Data Interpretation
- E. Latent fingerprints
 - 1. Analytical Techniques
 - 2. Instrumentation
 - 3. Data Interpretation
- F. Questioned documents
 - 1. Analytical Techniques
 - 2. Instrumentation
 - 3. Data Interpretation
- G. Fire debris
 - 1. Analytical Techniques
 - 2. Instrumentation
 - 3. Data Interpretation
- H. Firearms/Toolmarks
 - 1. Analytical Techniques
 - 2. Instrumentation
 - 3. Data Interpretation
- I. Pattern evidence
 - 1. Analytical Techniques
 - 2. Instrumentation
 - 3. Data Interpretation

References

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Fundamentals of Forensic Science, by Houck, M., Siegel, J. (Burlington, MA: Elsevier Academic Press, 2006) 0-12-356762-9.

Forensic Chemistry, by Bell, S., (Upper Saddle River, NJ: Pearson Prentice Hall, 2006) ISBN 0-13-147835-4.
"The Rule of Professional Conduct" supplied by the American Board of Criminalistics.

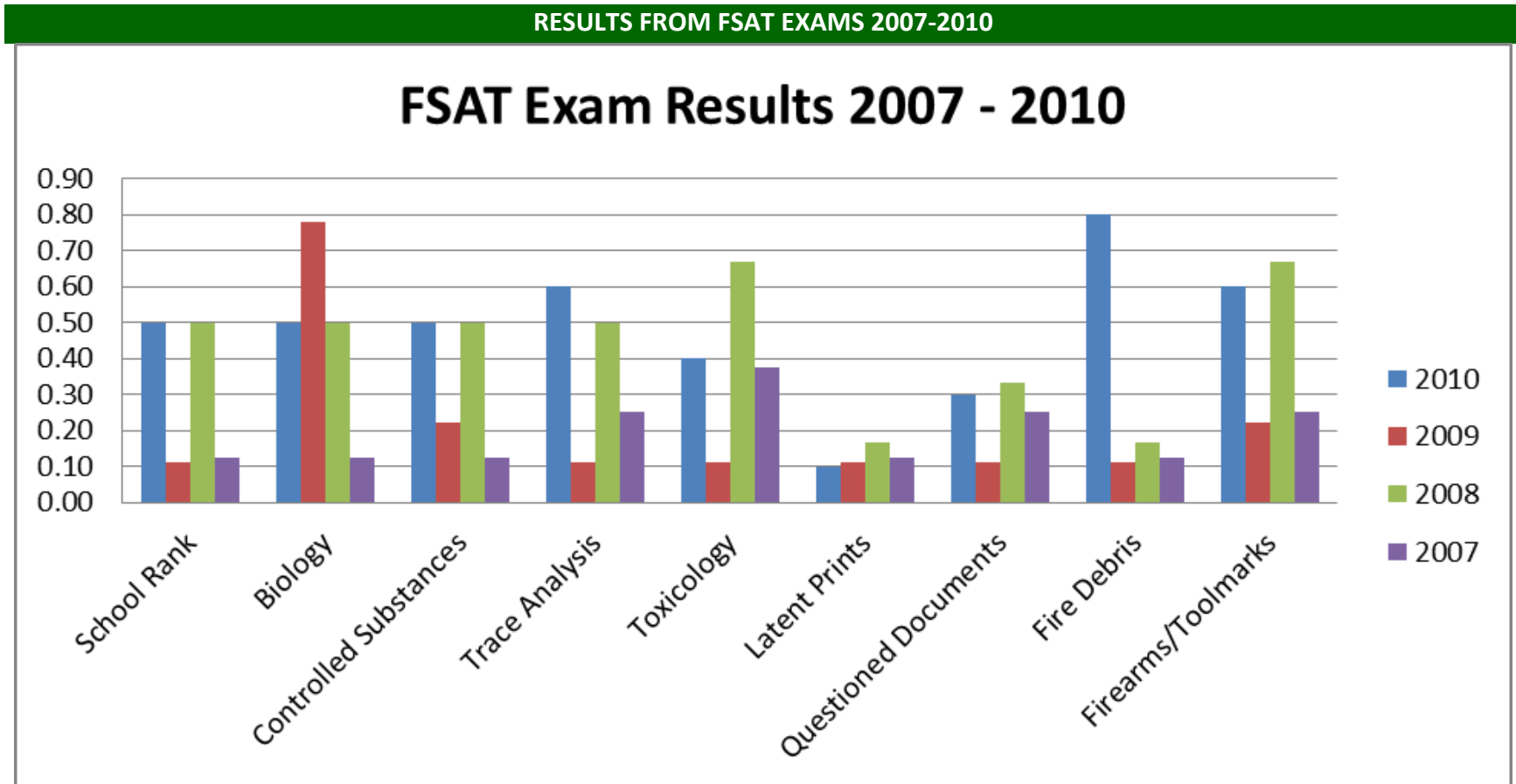
Forensic DNA Typing, by Butler, J. (San Diego, CA: Academic Press, 2001) ISBN 0-12-147951-X

FSC 612: MICROSCOPY PLM EXAM 09 CONSTRUCTIVE CRITICISM

- 1 Would like a day between classes
- 3 Would like notes to follow order of PowerPoint presentation better
- 3 Would like one day of lecture followed by one day of lab
- 1 Use simpler terms during first lecture when reviewing the parts and then give more complex terms during more applicable lectures
- 1 More current forensic related case studies involving microscopy
- 1 Review parts, refraction, reflection, and resolution more

Above is a compilation of the comments made by the students at the end of the exam last year. Based on those comments I changed the class schedule to allow time between classes for the students to better process the information. (Instead of Tuesdays and Wednesdays, the class is now Mondays and Wednesday s.) Also, the students felt there were numerous new terms at the beginning of the lectures that were not fully explained and therefore made comprehension of other material difficult. I have since incorporated brief definitions of new terms into the beginning lectures or waited to introduce some material until later courses. In an effort to introduce current case studies, I searched the last 5 years of Journal of Forensic Science for published case studies and found none that were relevant to the topics presented in the course. Since most Forensic Science Programs do not teach polarized light microscopy and many states do not utilize polarized light microscopy, I did not expect the literature to have any articles. The lack of use by state labs does not reflect the uselessness of the analysis method but rather the lack of trained individuals capable of performing the analyses. Since I handout detailed notes pages rather than a copy of the PowerPoint slides, there is some difficulty in synching the two documents accurately. This year's class has been enlisted to point out the specific discrepancies during the lectures so adjustments can be made.

C. RESULTS/ ANALYSIS/ PLANNED ACTION



The y axis represents the ranking of our program based on the results of individual test takers in our program divided by the total number of schools participating in this test. Our benchmark is to achieve a ranking of 0.5 or lower. For example, our program ranked #1 (or 0.1) in 2007 and 2009 as compared to all universities participating in this exam. The program ranked #1 in Forensic Biology (2007), Controlled Substances

(2007), Trace Analysis (2009), Toxicology (2009), Latent Prints (2010, 2009, 2008, 2007), Questioned Documents (2009), and Fire Debris (2009, 2008, 2007). The program performed in the bottom 50% of schools in Forensic Biology (2009), Trace Analysis (2010), Toxicology (2008), Fire Debris (2010) and Firearms/Toolmarks (2010, 2008). Of these, 4 of 5 of these courses represent electives for non-forensic-chemistry-emphasis students in our program so that some students taking this examination may not have had sufficient coursework in a particular area of the test. Herein, lies what appears to be a disconnect between the accrediting agency for academic forensic science programs (Forensic Science Education Programs Accreditation Commission) and the national assessment agency (American Board of Criminalistics). We believe we may be able to overcome this obstacle by supplementing student instruction in creative ways without changing our curriculum. Based on these results, we are focusing our attention on Trace Analysis, Fire Debris, and Firearms/Toolmarks by incorporating more of these topics in to our seminar program which all students attend. For example, this term we have a guest firearms expert speaker presenting a firearms/ballistics lecture on one day and taking students to the firing range on the next as an “extracurricular” event to supplement all student’s firearms/toolmarks instruction. We are also building up library resources in these specific subject areas.

IN-HOUSE COMPREHENSIVE EXAM RESULTS - CLASS OF 2010

Student	DIGITAL	MICROSCOPY	COMPARATIVE	DNA	LEGAL	CHEMISTRY	CSI	TOTAL
1	102	86	88	90	88	80	80	88
2	102	90	90	88	80	86	94	90
3	92	92	90	92	92	86	80	89
4	100	92	82	90	78	84	92	88
5	102	92	94	90	84	96	80	91
6	106	92	94	92	92	84	90	93
7	104	90	86	84	92	76	86	88
8	104	88	90	96	86	88	92	92
9	86	90	90	100	84	82	88	
Mean	99.778	90.222	89.333	91.333	86.222	84.667	86.889	
Std Dev	6.515	2.108	3.7417	4.583	5.239	5.568	5.667	

Different test from rest of students

80-100% = Pass (P)

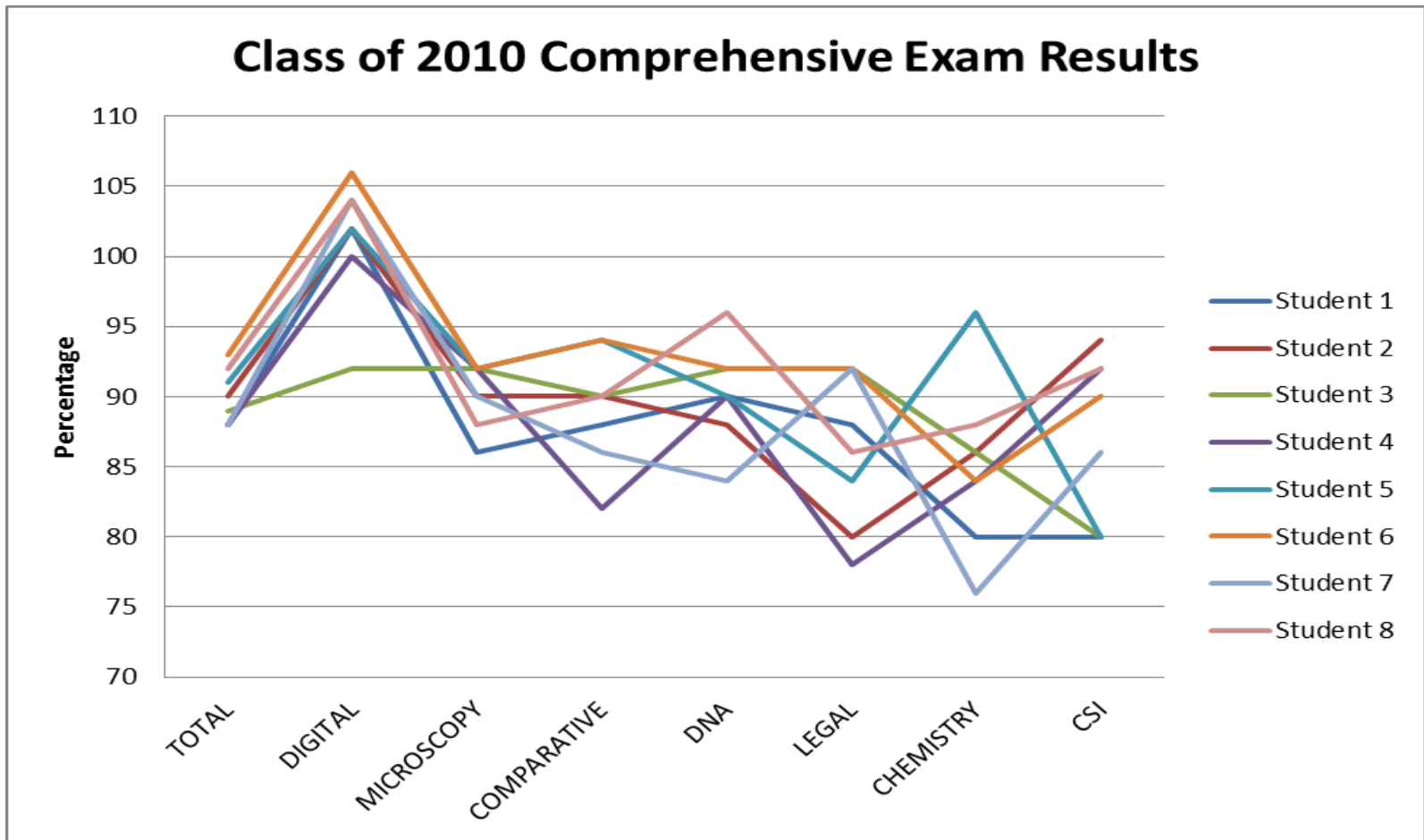
70-79% = Conditional (C)

69% or lower = Fail (F)

The student will fail the overall exam if:

Any single section is below 70%

Two or more sections are in the 70-79% range



**Student 9 not included because of different exams taken.*

All Students performed in the passing range of the examination. The benchmark for the comprehensive examination is that the student achieve 80% or higher in each subject area. As seen in the chart above, student 4 and 7 performed below the benchmark in legal and chemistry, respectively while all others performed at the benchmark or above. We also noted that scores exceeding 100% in a section (Digital) skewed the results in total scores for all but one student. This was resolved by notifying instructors that no single component of the examination can exceed 100 points.

CLASS OF 2010 EXIT SURVEY RESULTS

Number	Question	Students					
		1	2	3	4	5	6
1	Courses were appropriate for my field of study	A	B	B	A	A	B
2	Instruction was appropriate for my field of study	B	B	B	A	A	B
3	My advisor was accessible and helpful	B	B	B	A	B	A
4	When requested, program faculty provided letters of recommendation	E	E	B	E	A	A
5	Classroom and other physical facilities were adequate	B	B	B	A	A	B
6	Laboratory exercises and facilities were appropriate	B	B	B	A	A	B
7	Program computer facilities were appropriate	B	E	B	A	C	C
8	University library services were appropriate	B	E	B	E	E	B
9	Program Library services were appropriate	E	E	B	A	A	B
10	Laboratory equipment was adequate for instruction	A	B	B	A	B	B
11	Student tuition and fees were appropriate	B	E	B	B	D	B
12	The program promoted professional activism through membership, meeting	A	B	B	A	B	B
13	Financial aid, i.e., graduate assistantships, tuition waivers, work-study assignments, were appropriate for my needs	B	B	B	A	A	B
14	My internship experience was an important component of my graduate education	A	B	B	A	A	A
15	Seminar helped improve my presentation skills	A	B	B	A	B	A
16	I'm optimistic that my degree will benefit me along a forensic science or related career path	A	B	B	A	A	A
17	I would recommend this program to others	A	B	B	A	A	B

- (A) Strongly Agree
- (B) Agree
- (C) Disagree
- (D) Strongly Disagree

(E) No Opinion or not applicable

The Exit Survey is administered to the graduating class in their last semester in the program. Of 102 possible responses, only 2 or 1.96% responded “disagree” to positive statements about the program. All said, they would recommend this program to others. No action is planned at this time. A form was created for students to request a Letter of Recommendation which we posted to our website for easy access.

INTERN SUPERVISOR EVALUATION OF THE INTERN - SUMMER 2010/ CLASS OF 2011

Rating Scale:		
Points	Equivalent Grade	Description of Student Performance
5	A	<p>Demonstrates excellent performance for a student with no previous work experience.</p> <p>Performs above those with similar education and experience.</p> <p>Rarely requires assistance in evaluation of situations and solutions.</p> <p>Student shows exceptional attention to detail.</p>
4	B	<p>Demonstrates good performance for a student with no previous work experience. Performs equal to those with similar education and experience.</p> <p>Sometimes requires assistance in evaluation of situations and solutions.</p>
3	C	<p>Demonstrates moderately consistent performance. Performs above and below those with similar education and experience. Often requires assistance in evaluation of situations and solutions.</p>
0	D	<p>Demonstrates moderately inconsistent performance. Performs below, more than above, as compared to other interns with similar education and experience.</p>
0	F	<p>Demonstrate difficulty grasping important concepts. More likely, than not, that this person will make errors that they may, or may, not reveal.</p>
N/A	N/A	<p>Not Applicable</p>

Student	1	2	3	4	5	6	7	8	9	10	11	AVERAGE	STD DEV
I. Skills and Competency in Performance of Tests													
A. Manual Dexterity	5	5	5	4	4	4.5	4	5	5	5	N/A	4.650	0.450
B. Precision & Accuracy	5	5	5	5	4	4.5	5	5	5	5	5	4.864	0.308
C. Handling Instruments	4.5	4	5	4	4	5	5	5	5	5	N/A	4.650	0.450
II. Understanding and Application of Knowledge													
A. Application of Knowledge	5	5	5	5	5	4.3	5	5	5	5	5	4.936	0.201
B. Case Correlation	4	5	5	5	4	N/A	5	5	5	5		4.778	0.416
III. Carefulness and Concern for Order and Clarity													
A. Evidence and Reagent Identification	5	5	5	4	4	5	5	5	5	4	N/A	4.700	0.458
B. Adherence to Established Protocol	4	5	5	5	4	5	5	5	5	5	5	4.818	0.386
C. Reporting of Case Findings	3	5	n/a	5	4	N/A	5	5	N/A	5	N/A	4.571	0.728
D. Maintenance of Laboratory	4.5	5	5	5	4	5	5	5	5	5	5	4.864	0.308
IV. Efficiency and Organization													
A. Judgment of Priorities and Organization	4	5	5	5	4	4	5	5	5	5	5	4.727	0.445
B. Time Element	4.5	5	5	4	4	N/A	5	5	5	5	5	4.750	0.403
V. Interpersonal Relationships													
A. With Clients	5	N/A	5	N/A	N/A	N/A	5	5	N/A	N/A	N/A	5.000	0.000
B. With Colleagues	5	5	5	5	3	4.5	5	5	5	5	5	4.773	0.579
C. With Supervisor	5	5	5	5	4	4	5	5	5	5	5	4.818	0.386
VI. Dependability and Integrity													
A. Attendance and Punctuality	5	5	5	5	5	5	5	5	5	5	5	5.000	0.000
B. Ethics	5	5	5	5	4	N/A	5	5	N/A	5	5	4.889	0.314
C. Work Performance	5	5	5	5	5	3	5	5	5	5	5	4.818	0.575

D. Mistakes	5	5	5	5	4	N/A	5	5	5	5	N/A	4.889	0.314
E. Perseverance	5	5	5	5	4	N/A	5	5	5	5	5	4.900	0.300
VII. Communication													
A. With Public, Juries, Officers of the Court, Attorneys, or Other Non-Scientists	n/a	N/A	N/A	N/A	N/A	N/A	N/A	5	N/A	N/A	N/A	5.000	0.000
B. With Law Enforcement Officers or Agencies	5	N/A	5	5	N/A	N/A	N/A	5	N/A	N/A	N/A	5.000	0.000
C. With Supervisors and Colleagues	5	5	5	4	4	4	5	5	5	5	5	4.727	0.445
D. Oral Communication Skills	5	5	5	5	4	4.5	5	5	5	4	5	4.773	0.391
E. Written Communication Skills	n/a	4	N/A	5	4	4.5	5	5	5	5	5	4.722	0.416
VIII. Personal Appearance and Grooming													
A. Grooming	5	5	5	5	4	4.5	5	5	5	5	5	4.864	0.308
B. Dress for the Occasion	5	5	5	5	4	3	5	5	5	5	5	4.727	0.617
C. Prepares for the Unexpected	5	5	5	5	4	3	5	5	5	5	5	4.727	0.617
D. Representing the Organization	5	5	5	5	4	3	5	5	5	5	5	4.727	0.617
IX. Professional Values and Ethics													
A. Recognizes their responsibility to show respect and gratitude	5	5	5	5	4		5	5		5	5	4.889	0.314
B. Recognizes their responsibility for nonmaleficence	5	5	5	5	4		5	5		5	5	4.889	0.314
C. Recognizes their responsibility for beneficence	5	5	5	5	4		5	5		5	5	4.889	0.314
D. Recognizes their responsibility for fidelity	5	5	5	5	4		5	5		5	5	4.889	0.314
E. Recognizes their responsibility for veracity	5	5	5	5	4		5	5		5	5	4.889	0.314
F. Recognizes their responsibility for reparation	5	5	5	5	4		5	5		5	N/A	4.875	0.331
TOTAL AVERAGE SCORE	4.80	4.94	5.00	4.84	4.06	4.23	4.97	5.00	5.00	4.94	5.00		

**Results from 11 of 16 students (awaiting receipt of evaluation)*

Intern's Assessment of the Internship Experience Summer 2010 / Class of 2011

Question	Student													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. The internship Experience was an important aspect of my graduate Education	A	A	A	A	A	A	A	A	A	A	A	A	A	A
2. My internship was relevant to my field of study	A	A	A	B	A	A	A	A	A	B	A	A	A	B
3. My internship improved my self-confidence	B	A	A	B	A	B	B	A	A	A	A	A	B	A
4. My internship improved my professional skills	C	A	A	A	A	B	B	A	A	A	A	A	B	B
5. I made valuable contacts through my internship	B	C	A	B	A	B	A	A	A	A	A	A	B	A
6. My internship will be important to my job search	A	A	A	B	A	A	A	A	A	A	A	A	A	A
7. My internship improved my laboratory skills	A	A	A	B	A	B	B	A	A	A	A	A	B	C
8. I knew what was expected for my internship	B	A	A	B	A	B	C	A	A	B	A	B	B	C
9. My internship helped narrow my career choices	B	A	A	B	A	C	B	A	B	A	A	B	B	B
10. I would recommend this internship to others	A	A	A	B	A	B	B	A	A	B	A	A	A	A

A= strongly agree

B= Agree

C= No Opinion or Not Applicable

D= Disagree

E= Strongly Disagree

**Results from 14 of 16 students (awaiting receipt of evaluation)*

All student passed their background checks to intern for 10-12 weeks at the following locations: Marshall University Forensic Science Center (4), Washoe County (Nevada) Sheriff's Department (1), Kentucky State Police Crime Laboratory (2), Austin (TX) Police Department (1), Las Vegas (Nevada) Metropolitan Police Department (1), Wyoming State Crime Laboratory (1), Huntington Police Department Crime Laboratory (2), and Minnesota Bureau of Criminal Apprehension (1). The benchmark for this assessment is to receive no "D" (disagree) or "E" (strongly disagree) results. This benchmark was achieved during this period. Spending 3 months in a working crime laboratory on a full-time basis, it would be helpful to know what may have prompted students to respond "C" (No opinion or Not Applicable). In the future, any responses of "C", "D", or "E" will trigger follow-up with a request for additional information.

2009-2010 FACULTY AND COURSE EVALUATIONS

The Faculty and Course Evaluations table shows the results of the students' evaluation of course and instructor quality. These data are derived from the post-course surveys, in which students use a four-point scale to rate the courses and instructors over 17 dimensions.

Rating Scale 4 = Strongly Agree 3 = Agree 2 = Disagree 1 = Strongly Disagree

Item Descriptor	Past 5 Academic Years				
	F05-S06	F06-S07	F07-S08	F08-S09	F09-S10
1. The course was well organized	3.12	3.07	3.04	3.32	3.32
2. The learning objectives were stated clearly in the syllabus	3.33	3.31	3.38	3.52	3.50
3. This course encouraged the application of basic science knowledge to clinical problems	3.30	3.28	3.34	3.45	3.46
4. Grades were fairly assigned	3.42	3.37	3.28	3.55	3.60
5. Examination questions were reflective of course material	3.17	3.23	3.23	3.40	3.46
6. The handouts and other study materials were useful	3.31	3.30	3.38	3.51	3.52
7. The required or recommended textbook(s) was (were) useful	*	1.64	3.01	3.48	3.34
8. The atmosphere of the class was conducive to learning	3.25	3.27	3.34	3.42	3.43
9. I would rate this class as: 1=poor, 2=average, 3=good, 4=excellent	2.84	2.91	3.02	3.24	3.26
10. The instructor conveyed a sense of commitment to helping students learn	3.30	3.31	3.44	3.51	3.58
11. The instructor was knowledgeable about his/her subject matter	3.44	3.53	3.59	3.60	3.70
12. The instructor provided well-organized handouts and study materials	3.36	3.32	3.31	3.45	3.44
13. The instructor clearly presented the course material	3.15	3.17	3.26	3.40	3.35
14. The instructor was an effective teacher.	3.10	3.17	3.34	3.39	3.40
15. The instructor was a positive role model	3.36	3.44	3.40	3.51	3.56
16. The instructor treated the students with respect	3.47	3.56	3.53	3.58	3.61
17. I would rate this instructor as :1=poor, 2=average, 3=good, 4=excellent	3.06	3.14	3.28	3.37	3.33

** Question 7 was left off of the evaluations for this year.*

Several items, 13 of 17, received improved scores since last year. Only 3 items of 17 slightly decreased on average. These included:

1. Organization of study materials
2. Clear presentation of material

3. Overall rating of the class.

The benchmark for this component is to achieve ≥ 3.0 for each item. This was achieved overall with individual items recognized for improvement. Faculty will focus on improving the organization of study materials and presentation.

IV. OVERVIEW OF CHANGES IMPLEMENTED

Last year we were advised to disaggregate data to better show the extent to which an individual or the program fell below the benchmark. I believe we have improved in this area this year on the FSAT Examination and Comprehensive Examination, Internship Supervisor Evaluation of Intern, etc. By doing so, we were better able to identify more action items for improvement.

V. CHANGES BASED ON ASSESSMENT DAY ACTIVITIES

The assessment day activity was our in-house comprehensive examination. Two findings resulted in the analysis of the results: 1) Skewing of total scores was observed when one component instructor scored exams above 100; 2) the degree of difficulty in at least one component of the examination should be addressed to achieve a more normal distribution of scores.

VI. ASSISTANCE NEEDED WITH ASSESSMENT

It would be helpful if someone from the assessment office would provide faculty with an overview of the process and provide guidance regarding data collection, reporting, and utilization. Assistance with acquisition of university generated data would also be helpful.