PLUGGEDINVA

A Curriculum Guide for Contextualized Instruction in Workforce Readiness

Crime Scene Technician

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October, 2013

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Appendices

- Information about the PluggedInVA project, including resources for planning and implementation, are available on the PluggedInVA website.

I. Introduction

PluggedInVA is a career pathways program that prepares adult learners with the knowledge and skills they need to succeed in postsecondary education, training, and high-demand, high-wage careers in the 21st century.

The goal of PluggedInVA (PIVA) is to provide low-skilled adults with a career pathways program that incorporates 21st century skills into a traditional GED® curriculum to help them quickly develop the technology and workplace skills they need to succeed in a fast-paced, global economy.

Central to the PIVA curriculum is the development of digital literacy skills, 21st century skills, and professional soft skills to prepare learners for employment in a variety of industries as they complete their GED® credential, Career Readiness Certificate (CRC), and industry-recognized certificates.

Project Rationale

Although a certain degree of flexibility is necessary in the design of PluggedInVA projects to address a range of specific industries, fidelity to the core curriculum and to the essential elements of PIVA is critically important. The essential elements of any PluggedInVA project are

- industry-specific integrated and contextualized curriculum;
- GED® test preparation and basic skills instruction;
- Career Readiness Certificate preparation;
- instruction and certification in digital literacy skills;
- instruction in and demonstration of professional soft skills;
- integrated 21st century skills instruction;
- and a formal capstone project using the knowledge, skills, and experiences from the course.

Additionally, co-enrollment in a post-secondary institution, career coaching, and active business participation are required components of the model.

As PluggedInVA is implemented across the commonwealth, it is imperative that PIVA projects demonstrate fidelity to the model in order to ensure effective evaluation across sponsoring programs. As a part of this effort, the Virginia Adult Learning Resource Center (VALRC) at Virginia Commonwealth University (VCU), as the creator of the PIVA model, will oversee the development of the contextualized curriculum, train adult education teachers and community college instructors, and

ensure that integrated and facilitative instructional approaches are carried out in the classroom. The PIVA Implementation Guide, written by VALRC, is the basis of this work.

PluggedInVA Implementation Guide, Parts I and II:

Overarching Goal for Adult Educators in PluggedInVA

The goal for the adult education instructors and their staff in a PluggedInVA program is to create a bridge for lower-skilled adults to successfully complete coursework and training that will prepare them to succeed in life-sustaining careers. To do this the adult education team works to make postsecondary coursework relevant to their students' experiences; incorporates workplace and postsecondary expectations into class; consistently solicits learners' input to identify academic areas that need additional strengthening; and structures class activities in ways that develop critical thinking skills, problem-solving skills, teamwork, leadership, and, above all, confidence.

Overarching Objectives for the Forensic Technician Cohort

Workforce Readiness Goal: Demonstrate personal qualities and people skills, professional knowledge and skills, and technology skills necessary for success in high-demand, life-sustaining careers.

Learners who successfully complete the PluggedInVA program will have achieved the following certifications and credentials and have demonstrated proficiency in the following skills.

Overarching Objectives		
CST	Crime Scene/ Forensic Technician	Develop the knowledge and expertise needed to pass required certification exams, succeed in entry-level employment, pursue further training in this or a related field, and understand the career opportunities available for croem scene/forensic technicians.
GED®	GED®& Academic Skills	Earn a GED® Credential
PSS	Professional Soft Skills	Speak with confidence; defuse emotionally charged situations; serve a range of customers; help the team work effectively; work well with different generations in the workplace.
DL	Digital Literacy	Earn the Microsoft Digital Literacy Certificate Demonstrate proficient keyboarding skills, internet security awareness, file management techniques, and industry-specific technology skills.
VPT	Virginia Placement Test (VPT)	Earn scores on the English and Math Virginia Placement Tests to bypass developmental education classes at the community college
CRC	Career Readiness Certificate (CRC)	Earn a Career Readiness Certificate or improve score on CRC
JR	Job Readiness	Develop employability skills that include resume-writing, written correspondence, oral communication and listening skills, interviewing skills, self-representation, organization, and time management skills
21C	21st Century Skills & Postsecondary	Demonstrate critical thinking skills, innovation and creativity, flexibility with new situations and concepts, teamwork and collaboration, diversity awareness and clear communication skills

Success Skills	Develop awareness of personal learning preferences and styles, develop study habits that work well with personal abilities and preferences, manage a work-life balance

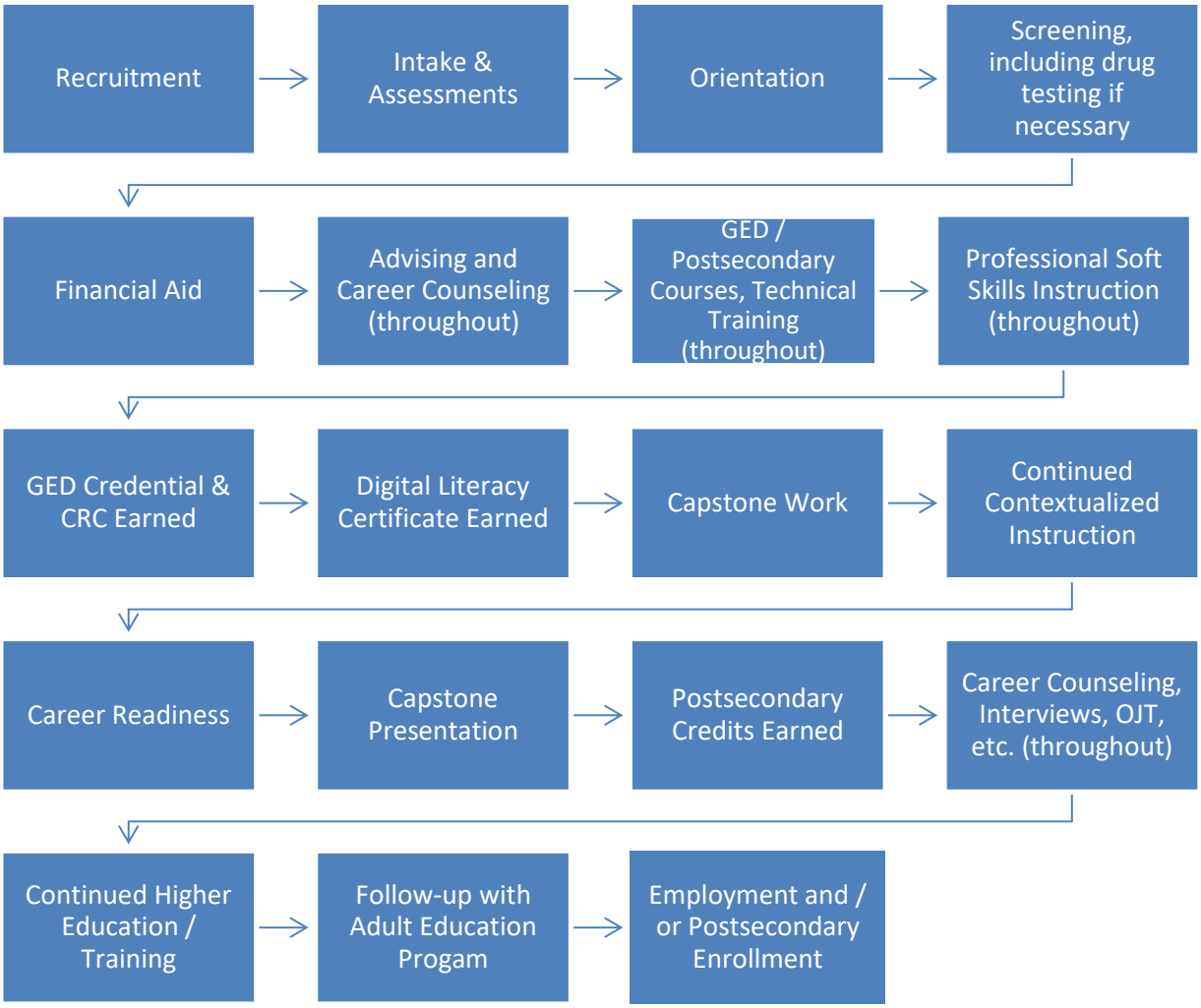
III. Curriculum Framework

PluggedInVA: Overview of the Curriculum Framework

Core	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6
	PHASE 1			**PHASE 2**		
Phase	Orientation Period	Tour Businesses	Job Shadow	None	Mock Interviews	Job Fair
I. GED®	**GED® Preparation and Career Readiness Certificate** As learners successfully complete the GED® credential and earn their CRC, they will focus on digital literacy certifications until all learners pass the GED® test and obtain the CRC at Bronze, Silver, or Gold level.					
II. PSS	**Professional Soft Skills and Business Etiquette** As GED® instruction is completed and all learners successfully pass the GED® test, soft skills will become the emphasis of this block.					
III. DL	**Digital Literacy** Microsoft Digital Literacy (MSDL)	Microsoft Digital Literacy (MSDL) Or Internet and Computing Core (IC3) Certificates		Integrated Technology Instruction as part of core content and the capstone project.		
CC	**Contextualized Content**	Industry-specific content and skills development	*Breaking Through*: Allied Health (Medical Assisting/Phlebotomy) *Breaking Through*: Energy/Mining (Electrical/Welding) Construction/Weatherization			
IV. 21C	**21st Century Skills** Introduction to the 21st Century Skills	Development of 21st Century skills; participation in collaborative activities		Development and application of 21st century skills; selection of team members for capstone projects	Capstone Teams Application of GED®, CRC, PSS, DL,CC, and 21C	
INT APP	**Integrated Application with Collaborative Learning Activities**	Digital portfolio; information challenges; mini capstone		Digital portfolio; information challenges; capstone project		Digital portfolio; information challenges; capstone project presentations

III. Instructional Schedules

Learners will go through all of the steps in this timeline throughout their time in PluggedInVA. Most instructional elements last throughout the 6-month program, and others are emphasized near the end of the program but are still incorporated throughout its entirety.



Following are both monthly and weekly instructional schedule planning templates. Adult education instructors will collaborate with postsecondary instructors to align instructional topics throughout the six months. The design is flexible to give instructors the opportunity to focus more on areas that need strengthening and shorten areas that learners may have already mastered.
Download fillable versions of the following templates on the PIVA website.

Appendix iii illustrates an online tool that may be used for adult education and postsecondary instructors to plan units of instruction to ensure alignment throughout the six month program.

Monthly Objectives Instructional Template

Phlebotomy Technician Cohort, Month 1			
	Skills Practiced	**Assignments & Resources**	[redacted]
Weekly objectives: phlebotomy technician content knowledge and skills			
Math			
Language (reading, writing, vocabulary)			
Workplace and professional soft skills			
	Activity Steps	**Outcomes**	**Resources & Marerials**
Integrated activity 1: (Title of activity)*			
Integrated activity 2: (Title of activity)*			

** Monthly activities emphasize the development of 21st century skills essential for the workplace and integrate the core components of the curriculum: industry-related knowledge and skills, basic math and language skills, digital literacy, professional soft skills, and 21st century skills (e.g., teamwork, critical thinking, problem-solving, research, innovation). These activities will be done in teams and will form the backbone of the integrated curriculum. In the first half of the six-month cohort, these activities may be information challenges or mini-capstone projects that will prepare the learners to design and complete their culminating capstone project. Activities for the last three months should be primarily devoted to capstone project work, which will be determined by each cohort with the help of their instructors.*

Weekly Instructional Schedule Template

Phlebotomy Technician Cohort: Weekly Instructional Goals			
Content covered in postsecondary coursework			
Scheduled assessments or presentations:			
Core Content Area		Objectives	Activities & Resources
GED Test Preparation	Language Arts		
	Applied Mathematics		
	Digital Literacy		
	Workplace Readiness & Professional Soft Skills (including 7 habits of 21st Century Skills)		
	College Survival Skills (21st Century Skills)		
Integrated Activity or Capstone Work (Activity steps/Objectives)			
Instructor Notes:			

IV. Capstone Project

The Capstone Project offers each PluggedInVA student the opportunity to demonstrate mastery of the 21st century skills, professional soft skills, technology skills, and work readiness skills practiced during the cohort. The objectives of the capstone project are

- to demonstrate knowledge and skills gained during the six-month PIVA program,
- to provide an opportunity for students to deliver a formal presentation to members of the community,
- to develop a project that learners may add to their resume to demonstrate otherwise immeasurable skills, such as professional soft skills and 21st century skills (i.e., teamwork, collaboration, problem-solving, critical thinking, and innovation),
- and to serve as a culminating event for the PIVA cohort that encapsulates the rigor, dedication, and skills mastery of the entire class of learners.

The capstone project may take any form within these guidelines:

- Projects are approved by the instructor(s). Instructors assist in the development and selection of capstone projects.
- Projects must be rigorous enough to challenge students to develop essential professional soft skills and 21st century skills. Capstone projects generally take three months to complete.
- Projects are completed in teams where each team member has an explicit and collaborative role.
- Projects must incorporate technology skills and 21st century skills and demonstrate mastery of both academic and workplace skills relevant to the cohort.
- Team projects should address a perceived or expressed need of the community.
- Project presentations are formal with invited guests from the community.

The following Capstone Project Plan is an example of a tool that the can be used to organize each team's project. The project ideas may be brainstormed as a class, or the instructor may choose the project theme. Additionally, ideas to help learners stay motivated may be developed as a whole-group exercise. All capstone plans should be approved by an instructor. Teams may want to present their plans to the whole group as a practice presentation activity and as a way to increase accountability and motivation.

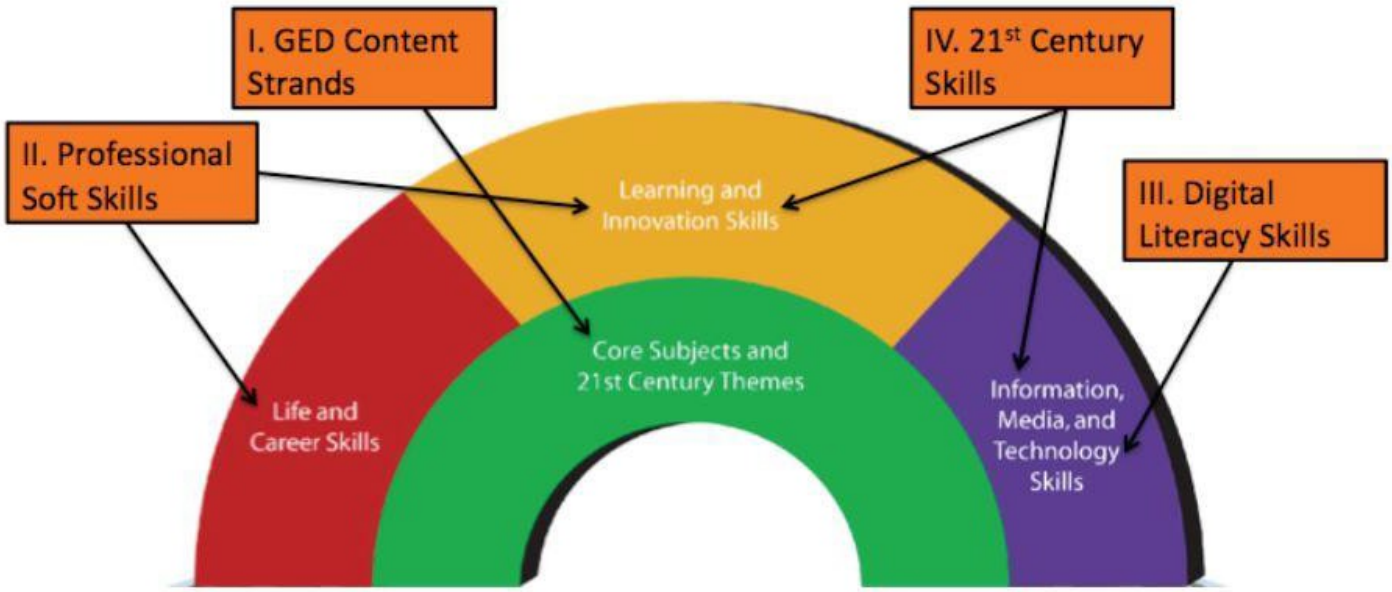
Download the Capstone Project Plan on the PIVA website.

Capstone Project Plan	
Project Presentation Date:	Final Project Due Date:
Team Members and Contact Information (Phone & email)	
Project Ideas (community needs)	
Project Mission/Objective (approved by instructor)	

Project Action Steps (Add as needed)			
Activity	Person(s) Responsible	Resources Needed	Due Date
Project Planning Questions			
How will team members communicate?			
How often will team members meet?			
How will team members report completed activities?			
How will backup plans be develop in case of missed deadlines?			
What are some strategies your team can use to stay motivated?			

V. Instructional Approaches & Strategies

Framework for 21st Century Learning with the PluggedInVA Core Content Overlay



Adapted from the Framework for 21st Century Learning: September 2013.

Instructional Approaches

The PluggedInVA model combines a contextualized and integrated curriculum with project-based learning done in teams. Below is more information on the instructional approaches utilized in the PIVA model.

Rationale: Project-based learning provides a sense of accomplishment with the completion of each project; promotes teamwork and collaboration; develops problem-solving, critical thinking, and creativity; prepares learners for the final capstone project; and engages learners with industry-specific content in an authentic way.

► Inquiry learning

Here "inquiry learning" is used as an umbrella term for the project-based, contextualized group instruction that the PluggedInVA model utilizes.

Inquiry Learning 5-step process

1. Identify an issue
2. Locate information
3. Critically evaluate information
4. Synthesize information
5. Communicate

Bell, T.; Urhahne, D.;, Schanze, S.; & Ploetzner, R. Collaborative inquiry learning: models, tools, and challenges. *International Journal of Science Education* . Vol. 32, Iss. 3, 2010.

► Contextualized and Integrated Instruction

- Instructors can think of contextualization as simply
  - the examples they use to illustrate concepts in class,
  - the topic used for a single lesson,
  - or the theme around which all instruction will revolve for several weeks.
- Learners should be involved in the planning process – their needs and interests point the way to the appropriate contexts for teaching and learning.
- Integrated instruction
  - Focuses on basic skills, content and higher level thinking;
  - Structures learning around themes, big ideas and meaningful concepts;
  - Provides connections among various curricular disciplines;
  - Provides learners opportunities to apply skills they have learned;
  - Encourages active participation in relevant real-life experiences;
  - Offers opportunities for more small group and industrialized instruction; and
  - Accommodates a variety of learning styles

II. Project-based learning in PluggedInVA

Mini-capstone projects may be completed in a week or two; they are done in teams; and they involve finding a solution to an identified problem.

Examples of Phlebotomy Technician problem-solving activities. Other Pharmacy Technician supplemental resources

Information challenges involve research and presentation of a solution (either oral or written); these challenges may be completed in a single class.

Example of an inquiry process project:

Large numbers of unemployed or low-skilled individuals reside in the southwestern region of Virginia. What might be one solution for this problem?

As a team research possible causes and develop a solution. Use research and your own critical thinking to explain why your solution might work. Present your findings and your solution to the class using a PowerPoint presentation. Also, submit a short written summary of your findings to your instructor. In the summary, describe what role each team member played in the completion of the task.

► Cooperative learning in small groups

"In small groups, students can share strengths and also develop their weaker skills. They develop their interpersonal skills. They learn to deal with conflict. When cooperative groups are guided by clear objectives, students engage in numerous activities that improve their understanding of subjects explored.

In order to create an environment in which cooperative learning can take place, three things are necessary. First, students need to feel safe, but also challenged. Second, groups need to be small enough that everyone can contribute. Third, the task students work together on must be clearly defined."

Educational Broadcasting Cooperation,
May 2013.

Small groups provide a learning mechanism through which:

- learners actively participate;
- teachers become learners at times, and learners sometimes teach;
- respect is given to every member;
- projects and questions interest and challenge students;
- diversity is celebrated, and all contributions are valued;
- students learn skills for resolving conflicts when they arise;
- members draw upon their past experience and knowledge;
- goals are clearly identified and used as a guide;
- research tools such as Internet access are made available;
- students are invested in their own learning.

Educational Broadcasting Cooperation,
May 2013.

Instructional strategies

Following are examples of instructional strategies to encourage the development of effective study skills and critical thinking skills.

► Available as fillable documents at

K-W-L-Q Chart

The K-W-L-Q chart may be used for just about any topic, including potential employers or businesses, a training program, a new topic in students' courses, an historical event or cultural icon, a news event, a local organization, etc.

The K and W columns are filled in by students either individually or in groups before they dive into a new topic; the L and Q columns are completed after learners have completed some learning about the topic.

	K	W	L	Q
[Topic]	We Know	We Want to know	We learned	Questions we still have

Information Synthesis Chart

Source(s)	Main Idea	Thoughts and Questions
Example: CBS Evening News (December 18, 2009, 6:00 p.m.) U.S.Department of Labor Website	*Example:* Jobs decline nationwide for third straight quarter bringing unemployment rates to 10.0%. Unemployment in VA is 7.6% for March 2010.	Example: Is there data for unemployment rate in the southwestern region of VA? How does it compare to the state and national rates of unemployment? What are possible causes for differences in the rates?

Group projects: as team members conduct their own research on their project topics, ask them to jot down notes in the "My Information" column. Team members should meet frequently to share information and create a group summary of research conducted. The template below is a tool to facilitate that process.

Project Research Information Synthesis Chart			
My Information	Information from:	Information from:	Information from:

How does my information compare to my teammates'? Circle or highlight any new or contradictory information. Cross out any information that is the same. Summarize the team's information here.

Adapted from Henry & Zawilinski. *HOT Blogs: Using online writing spaces to develop higher order thinking skills*. 2008.

Skills Checklists: Learners may use this computer basics and inquiry process checklist as both a guide that outlines the expectations of the program and as a review of what skills they have practiced.

PluggedInVA Skills Checklist	
Computer Basics	**Date skill demonstrated**
Turn computer on/off	
Use the mouse/track pad	
Follow computer lab rules for computer use	
Open programs and files using icons and/or the Start Menu	
Create/open a new folder/file	
Launch a word processor	
Type a short entry in a word processing file	
Copy text	
Cut text	
Paste text	
Delete text	
Name a word processing file and save it	
Open a new window	
Open a new tab	
Web Searching Basics	
Locate and open a search engine	
Type key words in the correct location of the search engine	
Type addresses in the address window	
Use the refresh button	
Use the “Back” and “Forward” buttons	
Use a search engine for simple keyword searches (e.g., Google or Bing)	
General Navigation Basics	
Maximize/minimize windows	
Open and quit applications	
Toggle between windows	
Email Basics	

□ Locate and open en email program	
□ Compose, edit, and send email messages	
□ Receive and reply to messages	
□ Attach documents or files to email messages	
Inquiry Process Skill Set	
Understand and Develop Questions	
□ Use strategies to ensure initial understanding of the question orinformation challenge, such as o Rereading the question to ensure understanding o Paraphrasing the question o Taking notes about the question o Thinking about the needs of the person who asked the question	
□ Use strategies to monitor an understanding of the question, such as o Knowing when to review the question o Checking an answer in relation to the question to ensure it is complete	
□ Determine what a useful initial question is, based on a variety of factors that include interest, audience, purpose, and the nature of the inquiry activity	
□ Determine a clear topic/focus for questions to guide the search for information	
□ Modify questions, when appropriate, using strategies as follows: o Narrowing or expanding the focus of the question o Developing a new or revised question that is more appropriate after gathering information	
Locate Information	
□ Locate at least one search engine	
□ Use key words in a search window within a browser or using a search engine	
□ Use the following general search engine strategies during keyword entry: o Topic and focus o Single and multiple keyword entries	
□ Use several of the following more specialized search engine strategies during a keyword search: o Quotation marks o Synonyms o Advanced search features (vary with each search engine)	
□ Use specialized search engines for images, videos, and other media sources	
□ Select from a variety of search engine strategies to locate useful resources when an initial search is unsuccessful: o Knows the function of the "Did you mean….?" feature in Google o Adjusts keywords according to the results of a search o Narrows or expands the search o Reads search engine results to discover the correct vocabulary and then uses that vocabulary in a new search	
□ Read search engine results effectively to determine the most useful resource for a task using strategies such as	

○ Knowing which portions of a search results page are sponsored, containing commercially places links, and which are not ○ Skimming the main results before reading more closely ○ Understanding the meaning of bold face terms in the results ○ Understanding the meaning of URLs (.com, .org., .edu, .net, .gov) ○ Reading summaries carefully and inferring meaning in the search engine results page to determine the best possible site to visit ○ Knowing when the first item is not the best item for a question ○ Monitoring the extent to which a search results page matches the information needed	
Reading to Locate Information on a Webpage	
□ Skim information to determine if it is useful and worth more careful reading	
□ Read more carefully at a site to determine if the required information is there	
□ Predict/infer the information housed behind a link to make efficient choices	
□ Use structural knowledge of web pages to help locate information, including the use of directories	
□ Know when you have left a site and how to return to it using the history	
□ Know how to use multiple browser windows or tabs to compare information	
□ Know how to use an internal search feature to locate information on site (e.g., control F)	
□ Monitor the reading of a webpage and know when it contains useful information and recognize when it does not	
Critical Evaluation of Information	
□ Identify, evaluate, and recognize that all websites have an agenda, purpose, perspective, or bias	
□ Identify and evaluate the author and/or sponsorship of a website	
□ Use author/sponsor information to identify and evaluate biases	
□ Investigate multiple sources to compare and contrast reliability and accuracy of information	
□ Identify several markers that may affect reliability of a site, such as: ○ Is it a commercial website? ○ Is the author an authority on the topic (e.g., professor, scientist, etc.)? ○ Does the website have links that are broken? ○ Does the information make sense? ○ Does the website include links to other reliable/reputable websites? ○ Does the website contain numerous typos? ○ Does the URL provide any clues regarding the reliability? ○ Do the images or videos appear to be altered?	
□ Understand that Wikipedia is a reasonable but imperfect information source	
□ Identify the main purpose of a website (educational, commercial, social, etc.)	
□ Identify the basic form of a website (blog, wiki, forum, informational, governmental, etc.) and use this information to consider reliability	
□ Evaluate information based on the degree to which it is likely to be accurate by verifying and consulting alternative and/or reputable sources	

Synthesize Information	
□ Synthesize/combine information from multiple media sources including written-audio, visual, video, and presented in tables, graphs, or charts	
□ Separate relevant from irrelevant information	
□ Organize information from multiple sources effectively	
□ Manage multiple sources of information both online and offline, including o Choose tools to meet the needs of managing information (file folders, electronic file folders, bookmarking websites, notebooks, etc.) o Keep reference lists of all sources referenced o Take notes with paper/pen or word processor document	
Communicate Information	
□ Understand that messages can elicit both positive and negative reactions	
□ Use a variety of writing/editing tools, such as a word processor, spell checker, dictionary, thesaurus, etc.	
□ Copy/paste text and/or a URL to include in a message or document	
□ Know how to use email efficiently to communicate information, including the ability to attach and download files	
□ Know how to use multiple forms of online communication tools including blogs, instant messaging, forums, discussion boards, wikis, Google Docs, etc.	
□ Awareness of audience and the relationship between audience, purpose, medium, and message	
□ Know how to include multiple-media sources within messages	
□ Use formatting techniques, such as headings and subheadings or bolded and underlined text, to organize information for effective communication	
□ Prepare and present information orally to an audience	
□ Prepare and present information visually to an audience	

VI. Materials and Resources

Professional Soft Skills

- Stephen R Covey, The Community
- Peggy Post & Peter Post, *The Etiquette Advantage in Business*
- SPOKES Curriculum, West Virginia Department of Education, Customer Service and Job Readiness Skills

21st Century Skills & College Survival

- Partnership for 21st Century Skills
- Concept to Classroom, Inquiry-based Learning

English

- Read Write Think, International Reading Association
- Thinkfinity Resources
- Goodwill Community Foundation
- TV411, videos and web activities designed to reach learning goals
- BBC Skills wise, English and Math for Adults

Math

- Khan Academy
- Goodwill Community Foundation
- TV411, videos and web activities designed to reach learning goals
- BBC Skills wise, English and Math for Adults

Technology

- Goodwill Community Foundation, free online classes
- Typing Web, free typing lessons and typing certifications
- Sense-Lang, typing tutor and games
- Macmillan McGraw-Hill Computer Literacy Lessons

Capstone Project Design and Implementation • Master of Public Administration: Capstone Project
PluggedInVA Resources • PluggedInVA Instructors' Manual • PluggedInVA Implementation Guide

Appendices

i. Sample Instructional Activities

ii. College Survival Resources

iv. Online Collaboration Tools

v. Forensic Technician Learning Activities and Tasks

A. Career Assessment

B. Ethics and Justice

C. Mythbusting in Forensic Science

D. What is Leadership? And What is its Value?

i. Sample Activities

*See **PIVA website** **for additional activities**

Study Skills & Postsecondary Readiness

- Learning styles and preferences survey: take a survey and design a learning plan with study habits and techniques outlined
  - Learning Styles Inventory
  - Lesson: What's Your Learning Style?
  - Career Garden, Study Skills Module
- K-W-L-Q: The job of a phlebotomy technician / team research project
- Graphic organizers: job comparisons: community versus hospital pharmacies

Professional Soft Skills and Job Readiness

- Self-representation: create personal mission statement, goal-setting, resume writing
- Conflict resolution: role plays and how-to videos (made by learners)
- Interview role plays: create a how-to and how-not-to guide (inc. sample questions); have students research job openings and, based on what they find there, prepare an interview with answers and follow-up questions (practice on each other and/or perform as role play for class)
- Workplace role-plays:
  - Phlebotomy technician registering donor
  - Phlebotomy technician preparing donors / patients for blood donation or sample
  - Phlebotomist with difficult or especially nervous patient
- Job readiness: develop job search plan (how to search, resume, cover letter, interview preparation)
- Job openings search: identify most common qualifications listed on job openings for pharmacy technicians

Industry-related Skills and Knowledge

- Filling out patient registration forms
- Identifying safety and/or sanitation violations and developing solutions
- As a group, develop customer service plans for a range of potentially challenging scenarios

- Donor who is not qualified to give blood
- Nervous donor
- Mislabeled or damaged samples

Applied Math

- Measurements and calculations
- Inventory (familiarity with databases)
- Games: matching parts of body to "routes of administration"; matching abbreviations with full words
- Practice exams, quizzes, and workbook assignments
- Small- and large-group discussions (using critical thinking and discussion prompts)
- Small group projects and research
- Multimedia (YouTube videos) with pre- and post-work
- Designing an exam review guide (small-group or individual work; guides may be shared with class)

ii. College Survival Resources

Time Management: Planning your 168-hour week	
Each week has 168 hours. Estimate the number of yours per week that you will dedicate to each of the activities below; then add them together to get a total. Will you be able to fit everything in and maintain a healthy lifestyle?	
Your Time Commitments	**Hours**
Sleep (____hours per night x7)	
Meals (=___hours per day x7)	
Class(es) (including commute to class)	
Studying and homework (expect 2-3 hours/week per credit hour)	
Work (including commute)	
Family and friends	
Activities (hobbies, exercise, volunteer work, spiritual practices, etc.)	
Extra responsibilities (chores, obligations, etc.)	
Personal care (grooming, appointments)	
Free time	
Other: _____	
TOTAL=	
168-Total=_____Hours Remaining	
What now? If your total is more than 168, you will have to cut back. Reassess the time you have set aside.	

decide what you can reasonably reduce.

If your total is between 165 and 168, you have a very busy schedule and may not be able to manage unpredictable events. Consider cutting back.

If your total is below 165, Congratulations! You have designed what should be manageable commitments of your time. The next step is to plan when you will accomplish your responsibilities.

Adapted from University of Redlands,
September 2013.

Test Preparation Tips

enough to focus during the test).

Put the main ideas/information/formulas onto a sheet that can be quickly reviewed many times, this makes it easier to retain the key concepts that will be on the test.

Try to show up at least 5 minutes before the test will start.

Set your alarm and have a backup alarm set as well.

Go to the bathroom before walking into the exam room. You don't want to waste anytime worrying about your bodily needs during the test.

Test-taking Tips

Bring at least two pens/pencils with good erasers, a calculator with enough batteries and any other resources that your instructor allows you to.

Bring a watch to the test so that you can better pace yourself.

Keep a positive attitude throughout the whole test and try to stay relaxed. If you start to feel nervous take a few deep breaths to relax.

Keep your eyes on your own paper, you don't want to appear to be cheating and cause unnecessary trouble for yourself.

When you first receive your test, do a quick survey of the entire test so that you know how to efficiently budget your time.

Do the easiest problems first. Don't stay on a problem that you are stuck on, especially when time is a factor.

Do the problems that have the greatest point values first.

Pace yourself, don't rush . Read the entire question and pay attention to the details.

Ask the instructor for clarification if you don't understand what they are asking for on the test.

Write legibly. If the grader can't read what you wrote, they'll most likely mark it wrong.

Always read the whole question carefully. Don't make assumptions about what the question might be.

If you don't know an answer, skip it. Go on with the rest of the test and come back to it later. Other parts of the test may have some information that will help you out with that question.

✓ Don't worry if others finish before you. Focus on the test in front of you.

✓ If you have time left when you are finished, look over your test. Make sure that you have answered all the questions. Only change an answer if you misread or misinterpreted the question because the first answer that you put is usually the correct one. Watch out for careless mistakes and proofread your essay and/or short answer questions.

✓ Double check to make sure that you put your first and last name on the test.

iii. Collaboration tools

Critical to the success of a PIVA cohort is the collaboration of all involved partners, especially those involved in direct instruction, including the adult education team and the postsecondary instructors. Instructors can keep track of attendance across all classes, keep each other up to date with at-risk students, ensure that what they are teaching aligns to what the students are learning in their other classes, and create a more cohesive program for the learners by communicating with each other.

Instructors and other PIVA staff may regularly update a collaborative document to ensure consistent alignment of the curriculum across class and to keep all PIVA program staff updated on any challenging situations or concerns about students or the curriculum.

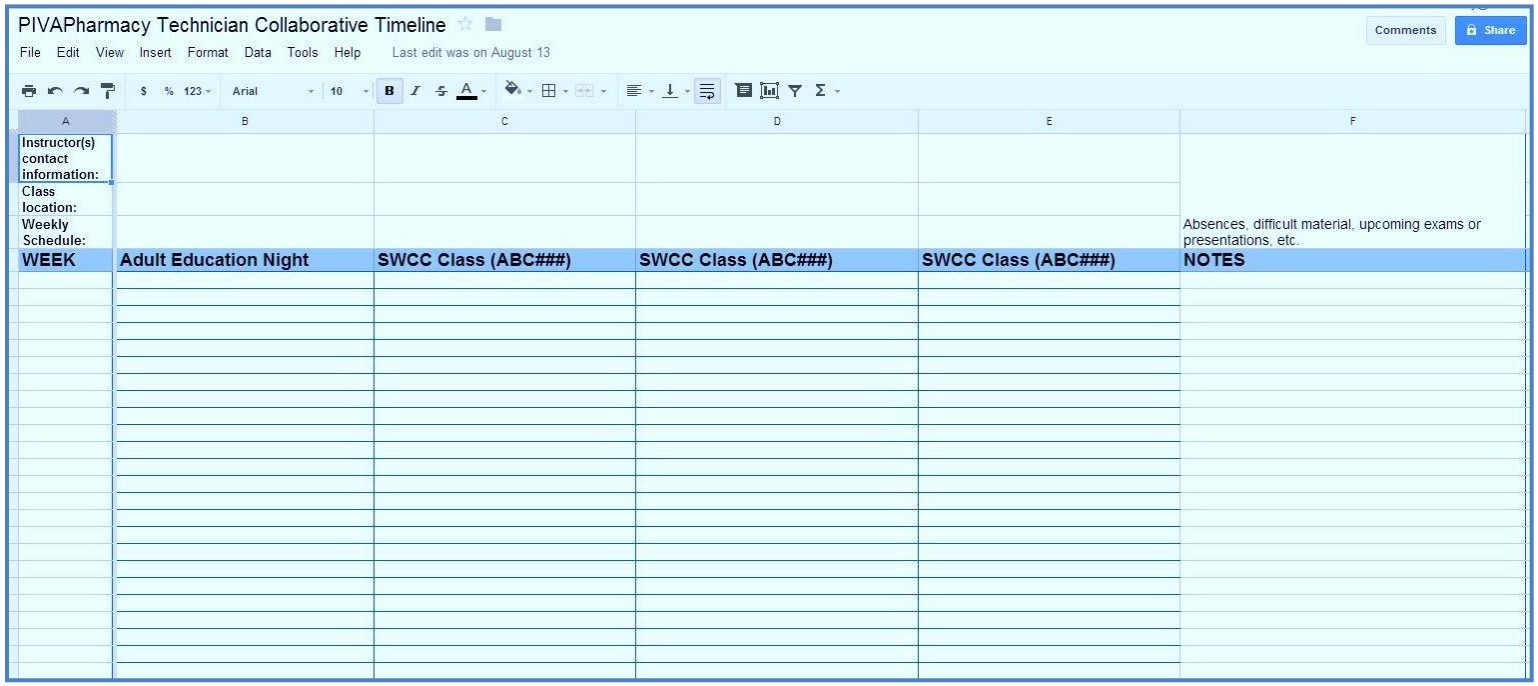
Google Apps for Education:

Other online collaboration resources:

PBWorks: Online Team Collaboration

Teaching with Online Collaboration Tools: University of Michigan Faculty Examples
Center for Research on Learning and Teaching
This page features innovative uses of online collaboration tools (OCTs) for teaching and course management.

On the following page is a screen shot of a Google Excel file. In addition to regular face to face meetings, a living document similar to this will help ensure that course content is aligned throughout all sections of the PIVA project.



PIVAPharmacy Technician Collaborative Timeline

File Edit View Insert Format Data Tools Help Last edit was on August 13

Comments Share

	A	B	C	D	E	F
	Instructor(s) contact information:					
	Class location:					
	Weekly Schedule:					Absences, difficult material, upcoming exams or presentations, etc.
	WEEK	**Adult Education Night**	**SWCC Class (ABC###)**	**SWCC Class (ABC###)**	**SWCC Class (ABC###)**	**NOTES**

iv. Forensics Classroom Resources and Activities

A. Career Assessment

B. Ethics and Justice

C. Mythbusting in Forensic Science

D. What is Leadership? And What is its Value?

A. CAREER ASSESSMENT

Objectives

1. Students will be able to identify personal attributes that should be explored, enhanced, or invested in to move into a general career path.

2. Students will be able to identify and articulate goals and aspirations that motivate them toward a particular career area.

3. Students will be able to evaluate career aspirations against goals and motivators to synthesize "best options" for their educational pursuits.

4. Students will discover the basic requirements for a career in forensic science/investigations.

5. Students will evaluate the requirements for forensic science careers in terms of their career aspirations and interests to assess "best fit" for a career.

How to get started?

1. Personal Assessment

What short term and long term goals do you have?

i. Do you want to be a manager/supervisor/leader?

ii. How much money would you like to make in the short term and long term?

iii. Are you willing to move? If yes, how far away?

iv. Do you plan on having or do you have a spouse/significant other?

Identify interests that include things you have done and would like to continue to do and aspirational interests

i. If money was no issue, what would you like to do?

ii. Have you done anything that you were particularly proud of the outcome?

iii. What is your "go to" in your free time that is constructive?

iv. What do you discuss with your friends to learn more about or improve upon?

What skills do you have?

i. Do you like to plan activities for your family and friends?

ii. If someone else had to pick 3 words to describe you, what would they pick?

iii. Do you have any previous training or unique skills?

iv. Do you have exceptional attention to detail?

Which of these goals, interests, and skills are most important to you (realistically)?

i. Which interest or skill would you like to develop more?

2. How do you turn your interests into a career aspiration? (Links to Personality and Career Assessment tools below)

Know your personality type

Take the Holland Code Assessment:

i. Many tools exist, but the iSeek tool combines personality with career options and then layers educational levels on those career options

3. Interested in a career in forensic science or investigations?

i. Why? What appeals to you about the career path? What would you like about it?
ii. What challenges might you face?
iii. Do you have any negative biases that may be motivating you?
iv. Do you have a strong ethical constitution?
v. How much education are you able or willing to obtain?
vi. Do you prefer to work outdoors or indoors?
vii. Do you want to be a scientist or a law enforcement officer?
viii. Are you willing to move to another region?

4. If you invest in an education to have a career in forensic science or investigations and you are not successful in getting one, what other options are available to you?

Career Assessments

- What Career is Right for Me
- Rasmussen
- Humanmetrics
- Iseek
- Personality Testing
- Utah jobs
- My Next Move

INSTRUCTOR Lead Discussion

1. Personal Assessment vs Career Opportunities

a. A career path should reflect personal motivations, ethical values, interests, and natural aptitudes. Even though skill sets can be learned, natural inclinations will help drive an individual to success.

b. Before an investment is made in learning a trade or pursuing an education, an individual should know what the job market is for the selected career path. Oftentimes, in order to be gainfully employed after the schooling, one must be willing and able to move some distance from "home".

In crime scene investigative (CSI) or forensic science (FRSC) jobs, it is not uncommon for people to have to move to population centers (larger cities) in which more opportunities for these career paths exist. Competition for CSI or FRSC jobs is typically very high (a large number of applicants) with very high expectations (successful candidates oftentimes have BS degrees in chemistry, biology, or forensic science or an MS degree in the same).

Small rural jurisdictions may have less competition. However, those jurisdictions are much less likely to have an accredited laboratory within a reasonable commute or they may not have a formal position at all for CSI or only 1 position. As a result, one must seriously consider their ability and interest in moving in order to pursue of career in CSI or FRSC.

i. If someone does not want to move to a more densely populated area, one should consider if the local population is expanding or shrinking. As a population grows, the demand for law enforcement and forensic science services increases.

ii. Careers in CSI in a police agency may require that the candidate become a sworn police officer. Approximately 50% of agencies nationwide have civilian CSI.

iii. Important Skills and Characteristics for CSI/FRSC careers:

- Written & presentation skills
- Understanding societies' reaction to crimes
- Considerations of gender & race
- Quantitative skills
- Skills in research and scientific methodology
- Critical thinking
- Understanding nature of crimes
- Decision-making
- Research strategies
- Ethics & moral values
- Interviewing skills
- Strong background in humanities, social science, & natural science
- Broad understanding of criminal law the criminal justice system
- Computer literacy
- Ability to identify and analyze social problems and develop solutions
- Knowledge of legal structure

2. Ethical Obligations

a. Strong ethical character is a must for a career in CSI/FRSC. (Ethics are slightly different than morals.) Full background investigations and personality assessments are performed for those entering the career. Background investigations may include items such as, but not limited to:

i. Number of parking tickets (whether or not they are paid)

ii. Convictions for misdemeanors or felonies

iii. Amount of personal debt one carries (how many credit cards, loans, etc)

iv. Gambling addiction and/or debt

v. Credit history

vi. Drug usage that would be considered illegal. This includes using prescription medicine for recreational purposes AND illegal substances.

1. Some agencies may have a grace period in which they will forgive illegal usage. For example, an agency may say that they will not hire anyone that has used marijuana in the last 2 years.

b. Some agencies will also consider the types of direct acquaintances with whom a potential candidate keeps company. Therefore, it is best to be sure that the company you keep has the same ethical values as yourself.

c. One must be very careful about personal biases that may influence one's ability to perform the duties of their job with absolute objectivity. Therefore, if one develops a negative bias about law enforcement or the criminal justice system, and they want to develop a career in the field, it could significantly influence your ability to objectively perform some aspects of the job.

3. Job Titles and Functions

a. When considering a career, one should look beyond the title of the job to the function of the job. In FRSC and criminal justice, job titles have become quite confusing. Job functions for a CSI and a FRSC practitioner/analyst/technician are quite different.

CSI identify, collect, and preserve evidence at the scene.

Practitioners analyze evidence in laboratory. Rarely does a practitioner go to the scene and rarely does a CSI analyze evidence such that it is "court-ready".

Some jurisdictions may have a position that performs some of each. BUT, globally speaking, job functions are typically split between those that collect/preserve and those that analyze.

i. In the Commonwealth of Virginia, most analyses of evidence are performed at 1 of the 4 regional crime labs of the Department of Forensic Science. These analysts typically have at least a BS degree in a natural science and oftentimes a Masters degree.

ii. Crime scene investigator positions within law enforcement agencies in Virginia may be called anything from CSI to forensic technician.

4. What do I do if I invest in an education in CSI/FRSC, but I do not find a job?

a. The skill sets and knowledge that you learn while studying for a career in forensic science or law enforcement is translatable to other careers!

b. The US Bureau of Labor Statistics projects slow growth for police officers for the next few years.

i. Probation officers are expected to grow by 18% by 2020.

ii. Private detective positions are expected to grow by 21% by 2020.

iii. Paralegal positions are projected to grow by 18% by 2020.

c. Careers in forensic science are projected to increase by 2020, as determined by professionals within the community. The forensic science community has identified significant need to hire more qualified (educated) scientists, which is supported by a federal initiative that will increase funding.

i. The funding will be linked to an agency or laboratory being recognized by appropriate accrediting agencies. So, a career plan must consider whether or not an accredited agency is within an appropriate commute.

Careers in Forensic Science

Criminal Justice Careers
Criminal Justice Careers
Law Enforcement Professional Qualities
Criminal Justice Degree
Criminal Justice Schools
Criminal Justice Programs

Cop Careers

Criminal Justice Jobs

Government Jobs

Police Employment

Law Enforcement

Federal Bureau of Investigation

Federal Jobs

Federal Judiciary Employment

Careers in General Science
Forensic Science Technician
Explore Careers

Student Careers
Science Careers
Cool Science Careers

Careers in Chemistry

Chemists and Material Science

Careers in Biology

Physical and Social Science and Microbiologists

B. ETHICS AND JUSTICE

Objectives

1. Students will be able to identify the difference between ethics and morals.

2. Students will be able to articulate the necessity and role for strong ethical valuesin the criminal

justice system.

3. Students will be able to articulate elements of a code of ethics in forensic science.

Ethics

Morals are influenced by society, culture, media, family, friends, religion. A single universally accepted set of moral values does not exist. Even if a moral code is accepted by a group, ethical issues will still arise. Therefore, a professional community must develop a code of ethics to establish reasonable expectations for the community and those it serves.

Exercise: Students should first list elements of a moral code and how and why that code was developed. Students should stretch to elements that may be less obvious or elements that may vary, depending on the culture. Once the students have listed these, they should then define what they believe ethics are.

Existing Code of Ethics

The first ethical code developed by forensic scientists was by the California Association of Criminalists (CAC) in 1950. It was created to help define the profession and has served as a model of a very specific code of ethics. Some codes are very specific in terms of behaviors and policies that must be followed, and other codes generally define expectations.

Ethical codes are also important because they help to define the expectations that a customer or consumer should have for the community. A code signifies that a profession has considered its obligation to society and that it must responsibly carry out its service. The consumer must have confidence that the forensic scientist and CSI are performing work necessary to resolve issues relevant to the investigation. This means that the forensic scientist and CSI must perform a comprehensive evaluation with competence.

Exercise: Students should find the CAC code of ethics and decide whether they think it is a specific code or a general code. The student should then find current discipline specific codes of ethics and define what those would be for each. The student should finally find the Code of Ethics for the American Academy of Forensic Sciences (AAFS), which is the umbrella organization for all forensic scientists.

Students should then be able to articulate the difference between the AAFS

Code of Ethics vs a discipline's Code of Ethics vs the CAC Code of Ethics.

Hint: Every discipline in forensic science has had a Scientific Working Group (SWG) develop standards and codes. While these SWGs will soon become obsolete with the formation of the Organization of Scientific Area Committees (OSAC), the SWG documents will become part of the new OSACs. It should still be easy to find SWGs for any discipline.

Some examples:

SWGTOX = Forensic Toxicology

SWGGUN = Firearms and Toolmarks

SWGDAM = DNA Analysis Methods

Exercise: Students should list who the consumers of the criminal justice system would be.

Students should begin by listing the services of an analyst or a CSI (what do these jobs do?). Once the jobs are defined, then who may ultimately rely on those job functions and why? Does each consumer have a different set of expectations for the job role? How would a forensic scientist or CSI explain their job or results to different consumers?

Hint: The responsibilities of each job role are different and the "consumers" or those who rely on the work of those jobs are quite broad: victims, suspects, families, friends, tax payers, law enforcement, lawyers, judges, juries. Each set of people may have a different set of expectations based on their (limited) knowledge of the role. (Student should name what they think the difference consumers would expect from a forensic scientist or CSI) Each consumer should have the same expectations for a job, which would potentially require educating different people as to what they should expect. The difference in expectation should be in the way that the CSI or forensic scientist communicates with each consumer. Every consumer does not need and should not expect the same kind of information.

Competence and Credibility

Consumers must have confidence that the forensic scientist and CSI perform their job functions with technical competence so that results are valid and reliable.

While competence does not mean that no errors are ever made, it does inherently mean that a scientist (i) performs a comprehensive analysis and (ii) minimizes error. If one is to perform a comprehensive analysis with competence, (s)he must know the scientific theory at the foundation of every test, know how to perform with little to no error, and know the current state of that discipline in terms of new research and findings.

Wherever he steps, whatever he touches, whatever he leaves, even unconsciously, will serve as silent evidence against him. Not only his fingerprints or his footprints, but his hair, the fibers from his clothes, the glass he breaks, the tool mark he leaves, the paint he scratches, the blood or semen he deposits or collects - all these and more bear mute witness against him. This is evidence that does not forget. It is not confused by the excitement of the moment. It is not absent because human witnesses are. It is factual evidence. Physical evidence cannot be wrong; it cannot perjure itself; it cannot be wholly absent. Only its interpretation can err. Only human failure to find it, study and understand it, can diminish its value.

Kirk, Paul,

Crime investigation,

John Wiley & Sons Canada, Limited, 1953

C. Mythbusting in Forensic Science

Ten Common Myths

Research the facts that resolve each of these myths about forensic science.

1. Length of time it takes for a case to be resolved.

2. On TV, it shows 1 person who follows the evidence from the scene to the laboratory for testing

3. DNA will solve all of the cases

4. The computer software/database exactly identifies unknown people from DNA or fingerprints

5. It is possible to leave no trace of oneself at a scene

6. An investigator can taste a powdery substance and know what it is

7. It is possible to match hair samples to identify someone

8. Fibers found at a scene can be matched back to fibers from someone's clothes

9. All labs are equipped with the same high tech equipment

10. It is possible to tell the exact time of death. Talk about it really being an estimate, that entomology does not give TOD but is TOC, talk about rigor, livor, algor

11. Traceability of poisons – poisoning looks like disease

    a. http://drmyhill.co.uk/wiki/Chemical_poisoning_-

    _general_principles_of_diagnosis_and_treatment

12. There is one federal agency that oversees all crime labs and police agencies in the US

Mission of the FBI

The FBI's national security mission is to lead and coordinate intelligence efforts that drive actions to protect the United States. Our goal is to develop a comprehensive understanding of the threats and penetrate national and transnational networks that have a desire and capability to harm us. Such networks include: terrorist organizations, foreign intelligence services, those that seek to proliferate weapons of mass destruction, and criminal enterprises.

In order to be successful, we must understand the threat, continue to integrate our intelligence and law enforcement capabilities in every FBI operational program, and continue to expand our contribution to the Intelligence Community knowledge base.

Because national security and criminal threats are often intertwined, our ability to integrate intelligence and investigations makes us uniquely situated to address our nation's threats and vulnerabilities.

Mission of the DOJ

The United States Attorneys serve as the nation's principal litigators under the direction of the Attorney General. There are 93 United States Attorneys stationed throughout the United States, Puerto Rico, the Virgin Islands, Guam, and the Northern Mariana Islands. United States Attorneys are appointed by, and serve at the discretion of, the President of the United States, with the advice and consent of the United States Senate. One United States Attorney is assigned to each of the 94 judicial districts, with the exception of Guam and the Northern Mariana Islands where a single United States Attorney serves in both districts. Each United States Attorney is the chief federal law enforcement officer of the United States within his or her particular jurisdiction.

United States Attorneys conduct most of the trial work in which the United States is a party. The United

States Attorneys have three statutory responsibilities under Title 28, Section 547 of the United States

Code:

- the prosecution of criminal cases brought by the Federal Government;
- the prosecution and defense of civil cases in which the United States is a party; and
- the collection of debts owed the Federal Government which are administratively uncollectible.

Although the distribution of caseload varies between districts, each U.S. Attorney's Office deals with every category of cases and handles a mixture of simple and complex litigation. Each United States Attorney exercises wide discretion in the use of his/her resources to further the priorities of the local jurisdictions and needs of their communities.

D. What is Leadership and What is its Value?

In order to understand the value of leadership and appreciate the role it plays in our lives, it is important for students to understand the story of their life. Any one of us may consider that our life has been a series of opportunities to take advantage, or a series of events that lead us to do certain things, or a series of things that has just happened that have been out of our control.

For those who want to lead an intentional life that is proactive and filled with short term and long term goals that have been accomplished, the first step is to understand our life to the present moment. When we understand our life to the present moment, we give thought to the people who have influenced us, we build perspective that negative events can lead to positive outcomes, and we recognize that our life has a theme.

When we recognize these moments, stages, people, events in our life, then we can make more proactive and thoughtful decisions in the future to fulfill our goals. And when we develop goals, we begin to think about obtaining the resources to fulfill our goals.

Timeline Exercise: Have students use one of the online tools below to develop a timeline of their life, beginning at birth. This may also be done with poster board & pens. Their timeline should be both pictures and text to explain each event. An important strategy while writing their timeline is to write it from someone else's perspective to give it an objective quality.

Questions to answer in the timeline:

- What people, events, and experiences had the greatest impact on your life? Articulate why or how.
- What experiences helped to define specific things in your life (what you wanted to study or be when you grew up?)
- Were there any experiences that made you more or less of anything? If a negative event occurred, identify a positive outcome that occurred?
- Are there any episodes on your path that impact you on a daily basis today?

Timeline Exercise : Once their timeline is completed, have them identify instances and/or opportunities they may have had to lead.

- What did you do really well?
- What could you have done better?
- One thing you could try next time (if there could be a next time)

Leadership Exercise: Have the students define what they believe "leadership" means. After a discussion about leadership, have the student name 4-5 people who have been leaders in their lives. If a parent or family member is on the list, they must list at least 3 other people. The intention is to identify people who have gone "over and above" OR chosen to invest in their life.

Leadership Public Speaking exercise: From the list, have students chose one person from their list and share with the class why the person was an inspiration or motivation.

BLOG CONNECTION: Students should interview a police officer, investigator, etc who is in a supervisory position and ask them about their goals, ambitions, and what motivates them.

Exercise: Have the students take a sheet of paper and write at the top "The qualities that I find inspirational or motivational in other people are:" and give them a few minutes to write down 4-5 items that fulfill this. Have the students talk about why these characteristics are important to them.

Once the discussion is complete, have the students strike through "The qualities that I find inspirational or motivational in other people are:" and replace it with "I am empowered when I:"

The instructor should lead the class in a discussion regarding setting personal goals that are in line with things that are inspirational or empowering to us.

Leadership Lesson: One of the biggest challenges for anyone viewed as a leader or an inspirational character is that they are placed on a pedestal. So, it should follow that one of the biggest lessons for us to remember is that these are humans who have their own set of challenges, pressures, joys, fears, etc.

As such, these people are capable of making mistakes and disappointing people.

Leadership Exercise: For the person that each student named as being inspirational, have the student name 1 quality about that person that you would like to not emulate. The student should articulate why they think the person behaves that way AND how they will avoid the behavior for themselves.

Leadership Lesson: The purpose of doing this is to appreciate the fact that the inspirational person is both great and fallible. They should also appreciate that the person who motivated or inspired them, may have done so at some sacrifice to themselves. The student should also be empowered to put a plan into place to modify their own behavior or develop a stronger support system.

Leadership Exercise: The student should write a letter of thanks to the person they listed and/or to other people on their list.

Values Lesson: When someone understands and articulates their own values, they are more likely to defend them and adhere to them. When values are articulated, it is important to set boundaries to protect them and develop a support system which will do the same. The result will be a tendency to develop goals with a foundation of values that will lead to higher success. It will also develop a tendency to be a stronger advocate for things that align with your personal values and goals, which means that they will lead from a place of authenticity.

Values Exercise: Have the students develop a list of personal values that they would consider (i) inviolate (ii) important (iii) good to have, but not important and (iv) not important. Use the resource link for a long list of values.

Have the students assess in the Inviolate and Important categories examples of deviations from those values. Once you have the examples, discuss with the students what would be appropriate boundaries to protect themselves from violating those values. The discussion should discuss how small deviations can/will lead to larger deviations which could have consequences for someone who is found to be operating outside of their values.

Value and Ethics Lesson:

The ultimate goal of the criminal justice system, in which investigation and forensic science play critical roles, is the overall safety of a community. Therefore, the criminal justice system must operate with a very strong set of values and ethics. Values and Ethics Exercise: The students should research and define a list of ethics and values required for people who work in the criminal justice system. The discussion should include whether there is a hierarchy of values and ethics and provide examples of what happens when a deviation occurs with any of the values and/or ethics.

Leaders in Forensic Science

Sir Francis Galton established the first system for classifying fingerprints.

Sir Edward Henry, commissioner of the Metropolitan Police of London, developed his own system in 1896 based on the direction, flow, pattern and other characteristics in fingerprints. The Henry Classification System became the standard for criminal fingerprinting techniques worldwide.

Values Exercise: The students should compare their own personal list of values to the list of values critical in the criminal justice community. They should assess if the values are similar.

Value and Ethics Discussion: When personal values align with the values and ethics required in a professional community, the employee has more job satisfaction and works harder to support and promote the professional community. When that employee also knows the value of leadership and has developed goals and aspirations, then that employee will also have a higher likelihood of advancing into leadership positions in an organization.

Resources

IDP

http://mycareeratva.va.gov/about/currentemployees/Pages/idp.aspx

Values

Mindtools

Henry Goddard became the first person to use physical analysis to connect a bullet to the murder weapon.

Calvin Goddard created the comparison microscope to help determine which bullets came from which shell casings.

James Marsh developed a chemical test to detect arsenic, which was used during a murder trial.

Karl Landsteiner won the Nobel Prize for classifying humanblood into its various groups. His work paved the way for the future use of blood in criminal investigations.

Edmond Locard, a professor at the University of Lyons, set up the first police crime laboratory in France in 1910 after law enforcement discovered that it needed a specialized team to analyze evidence found at crime scenes. For his pioneering work in forensic criminology, Locard became known as "the Sherlock Holmes of France." He formulated the basic principle of forensic science: "Every contact leaves a trace". This became known as Locard's exchange principle.

August Vollmer, chief of the Los Angeles Police, established the first American police crime laboratory in 1924.

Valentin Ross, a German chemist, learned to detect the poison in the walls of a victim's stomach. William Marvin Bass III (born August 30, 1928) is an American forensic anthropologist, best known for his research on human osteology and human decomposition. He has also assisted federal, local, and non-U.S. authorities in the identification of human remains.

Werner U. Spitz, M.D. (born August 22, 1926) is a forensic pathologist who has worked on a number of high-profile cases, including the investigations of the assassinationsof president John F. Kennedy and Martin Luther King, Jr. He also testified at the trials of Casey Anthony and Phil Spector, the civil trial against O.J. Simpson, and consulted on the investigation of JonBenet Ramsey's death.[1]

Auguste Ambroise Tardieu's specialties were forensic medicine and toxicology. Over his 23-year career, Tardieu participated as a forensic expert in 5,238 cases, including many famous and notorious historical crimes. Using his cases as a statistical base, Tardieu wrote over a dozen volumes of forensic analysis, covering such diverse areas as abortion, drowning, hanging, insanity, homosexuality, poisoning, suffocation, syphilis, and tattoos.

Frank Bender is one of the best known and forensic facial reconstruction artists. He calls himself a “recomposer of the decomposed” as he shapes likenesses from clay. His work over the years has led to over twenty-five positive identifications for places such as the Philadelphia Medical Examiner’s Office, the FBI, the Mexican Government and Interpol.

Dr. Mark Benecke, (known as “maggot man”) received his Ph.D. at Cologne University and worked in the Manhattan Chief Medical Examiner’s office until 1999. Currently, he works internationally as a

freelance expert witness and teaches at various police academies and acts as a visiting professor to various universities.

Francis Edward Camps performed 88,000 postmortems during his career as a chief pathologist at London Hospital. Although his nervous temperament played havoc in court, this attribute also endeared him to television audiences. He was fascinated with the Jack the Ripper case and, after pursuing evidence, determined that "Jack" was

Montague John Drewitt. Camps helped to develop the British Association of Forensic Medicine.

Dr. Marcella Farinelli Fierro may be best known as "Kay Scarpetta," a fictional character in a series of crime novels penned by Patricia Cornwell. Fierro, former Chief Medical Examiner for the Commonwealth of Virginia and Professor Emerita, oversees all violent, suspicious and unnatural deaths throughout the State of Virginia. She also teaches forensic pathology and serves as a consultant to the FIB on the National Crime Information Center. Dr. Fierro advised Cornwell on all her Scarpetta books.

Sir Alec John Jeffreys is considered the "father of DNA evidence," Alec Jeffreys' discovery of the first DNA fingerprint was accidental. But, this British geneticist's discovery revolutionized forensic science and also helped to resolve paternity and immigration disputes. Most recently, Sir Jeffreys has called for a drastic reduction in the DNA database, stating Britain has disregarded rights and privacy of innocent people in collecting database information.

Dr. Henry C. Lee is possibly one of the world's most well-known forensic scientists. He currently serves as the Chief Emeritus for Scientific Services for the State of Connecticut and an occasional lecture professor of forensic science at the University of New Haven, where he has helped to set up the Henry C. Lee Forensic Institute. Lee has worked on so many high-profile cases that it's difficult to name them all; but, some cases include O.J. Simpson, Laci Peterson, JonBenet Ramsey and the DC sniper shootings.

Robert P. Spalding joined the FBI in 1971 as an investigative agent and, in 1975, began to teach forensic serology at the Forensic Science Research and Training Center (FSRTC), FBI Academy in Quantico, Virginia. During this time, he developed expertise in bloodstain pattern analysis and was assigned to the newly formed Evidence Response Team Unit, where he taught crime scene investigation to FBI field office evidence response teams throughout the U.S.

Dr. Frederic Whitehurst was employed by the FBI crime lab, which rated Whitehurst as the leading national and international expert in explosive and explosive residue sciences. Despite this rating, Dr. Whitehurst was forced to defend himself against the FBI when he blew the whistle on scientific fraud within the FBI lab during the case of the 1993 World Trade Center bombing. After winning the first successful whistle blower cases against the FBI, Whitehurst started the Forensic Justice Project (FJP), a non-profit forensic watch dog group that functions as a project of the National Whistleblowers Center (NWC).