

**PROGRAM REVIEW**  
**Southern West Virginia Community and Technical College**  
**Board of Governors**

Program with Special Accreditation

Program without Specialized Accreditation

**Program:** Certificate, Health Care Technology  
 Degree and Title

February 2014  
 Date




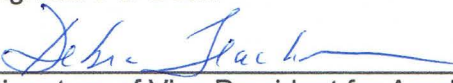
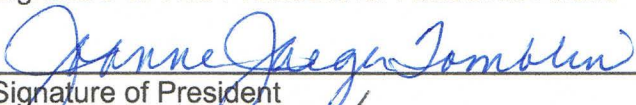
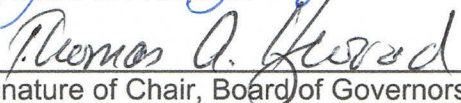
**INSTITUTIONAL RECOMMENDATION**

The institution is obligated to recommend continuance or discontinuance for each program reviewed and provide a brief rationale for its recommendation.

- x   1. Continuation of the program at the current level of activity without corrective action;
- 2. Continuation of program with corrective action (specify required action - e.g., reducing the range of optional tracks or other corrective action);
- 3. Identification of the program for further development;
- 4. Development of a cooperative program with another institution or sharing of courses, facilities, and/or faculty, and the like;
- 5. Discontinuance of the program in accordance with provisions of the West Virginia Council for Community and Technical College Education, Title 135, Procedural Rule, Series 11, *Degree Designation, General Education Requirements, New Program Approval, and Discontinuance of Existing Programs.*

**Rationale for Recommendation:**

The Health Care Technology Certificate Program meets all the standards for a viable program as set forth by the West Virginia Council for Community and Technical College Education. Graduates of the program have been successful in the job market as well as in pursuing the next educational level.

<u></u>	<u>3-10-14</u>
Signature of person preparing report if other than Department Chair	Date
<u></u>	<u>3-10-14</u>
Signature of Department Chair	Date
<u></u>	<u>3-10-14</u>
Signature of Dean	Date
<u></u>	<u>3-24-14</u>
Signature of Vice President for Academic Affairs	Date
<u></u>	<u>4/22/14</u>
Signature of President	Date
<u></u>	<u>4/22/14</u>
Signature of Chair, Board of Governors	Date

**PROGRAM REVIEW**  
**Southern West Virginia Community and Technical College**  
**Programs WITHOUT Specialized Accreditation**  
**Summary of Findings**  
**2013-2014**

**Program Name:** Health Care Technology, Certificate Program

**Hours Required for Graduation:** 30

**I. Synopsis of significant findings, including findings of external reviewer(s)**

**Program Review Components**

**A. Adequacy**

1. The curriculum requirements are sufficient for the demands of the field of allied health.
2. The electrocardiography option was removed beginning fall 2013 due to minimal enrollment and graduates. The field of electrocardiography has a scarcity of positions available at this time. Electrocardiograms are being performed by other personnel within the health care arena. A five credit hour electrocardiography class (AH 111) is being offered to meet this need.
3. Additional options for this program could be added that could meet the needs of the health care domain.
4. Entrance abilities for the students are those mandated by the college.
5. Graduates of the Medical Laboratory Assistant (MLA) Option have been successful in the job market as well as in pursuing the next educational level.
6. Advisory committee is actively involved in the program.
7. The assessment system ensures that the student has attained the proper learning and competency abilities.

**Conclusion: The program meets and exceeds minimum adequacy requirements.**

**B. Viability**

1. The MLA program continues to be a popular entry-level allied health career with a curriculum that supports students laddering into associate degree Allied Health and Nursing programs should they desire to do so.
2. The very small budget allotted to the MLA program, the use of the Medical Laboratory Technology (MLT) laboratory and its equipment for MLA lectures and student labs, and the fact that courses are taught by MLT faculty as a part of their regular teaching load result in this certificate offering being cost effective for the institution.

**Conclusion: The program meets the requirements for viability.**

**C. Necessity**

1. The MLA program provides a career entry point into the field of allied health. Some graduates pursue these entry-level positions and are able to procure jobs as phlebotomists and MLA assistants. However, most decide to pursue additional education into higher paying allied health careers such as Medical Laboratory Technicians, Radiologic Technologists, Surgical Technologists, Nurses, etc. Additionally, a few graduates decide that a career in allied health is not suitable for them.

**Conclusion: This is a necessary program.**

**D. Consistency with Mission**

1. The program does support the mission and vision of the institution.
2. The program and/or core courses support Southern's Compact.
3. Core courses impact other programs.

**Conclusion: The program is consistent with the Mission of the college.**

**Rationale for Recommendation**

The electrocardiography (EKG) program option has been offered at the Logan Campus since the inception of the Health Care Technology program and on the Wyoming Campus since 2005. In fall 2008 the electrocardiography program option was implemented on the Boone Campus.

Enrollment in the electrocardiography option has not yielded an adequate number of students for the last five years. The enrollment numbers have declined from 25 in 2009 to 11 in 2012. The option has shown success with students taking and passing the national electrocardiography certification exam each year. The market for jobs in this area and with this specific set of skills is at a dismal employment status. Surveys reflected that students seeking employment in this field was at a zero percentage rate. Students pursued employment via other disciplines or returned to school to continue one's education.

The number of completers of the electrocardiography certificate option is significantly lower than enrollment numbers. Completers of this option have been seeking employment in other arenas or returning to college to further their education. Also, the attainment of a certificate in the field of health care is no longer an option for points on the allied and health and nursing application. One hundred percent of those providing returned surveys were not employed and it was stated that there were no jobs in the area.

Enrollment numbers for the medical laboratory assistant option has been consistent since 2009. The enrollment numbers have ranged between 15 and 19 since 2009. The number for completers has only been less than 10 once since 2009. Seventy-five percent of the students surveyed were returning to school to further their degree in the medical laboratory field. Fifty percent were employed in the field of phlebotomy.

**Program: Health Care Technology**  
**Last Review: 2008-2009**

## **I. Program Description**

The Health Care Technology Program was implemented in the fall of 1997. This is a one year certificate program that develops skills for entry level graduates to work in the health care industry. There were two options from which students may choose:

1. Electrocardiography  
Logan Campus-1997  
Wyoming Campus-2005  
Boone Campus-2008
2. Medical Laboratory Assistant  
Logan Campus-1997

This program is designed for career-oriented individuals who desire to enter the job market in entry-level positions. The Health Care Technology Certificate Program prepares graduates as skilled, flexible health care workers, who work under the direction of licensed professionals such as registered professional nurses, medical laboratory technologists, and physicians.

The electrocardiography graduate is prepared to work in an office, clinic, or hospital performing routine EKG's and Holter monitoring. The graduate is also prepared to work as a telemetry technician on a telemetry floor within a hospital. Thus, employment opportunities were broader than with simply being able to perform a 12 lead EKG in an office or clinic. The field of electrocardiography has seen a decline in employment.

The medical laboratory assistant option prepares students to perform skills such as phlebotomy and simple laboratory tests. The number of students allowed to enroll is kept to a maximum of seventeen, due to the availability of clinical sites for the Phlebotomy Clinical Practicum portion of the curriculum and the size of the laboratory that is used for student practice of skills.

Some students choose to register for both options and/or seek a higher degree in one of the other health care fields such as nursing, surgical technology, emergency medical services, or medical laboratory technology. The knowledge gained in the Health Care Technology Program is applicable to other disciplines. Most of the support courses are the same courses required in nursing, medical laboratory technology, paramedic science, surgical technology, and radiologic technology programs.

Graduates of the Health Care Technology Program are eligible to take national certification exams in the applicable options.

**Goals:** The Health Care Technology Program will:

1. Provide highly skilled providers of care for community clients in hospitals and other community agencies.
2. Provide students with the knowledge and skills to take and pass the appropriate certification exam provided the student meets all eligibility requirements of the certifying agency.
3. Provide students with skills and knowledge that enables them to meet career and work goals.
4. Maximize the quality of the Health Care Technology Program by ongoing monitoring of graduates and curriculum.

## **II. Special Accreditation Information**

This program does not have any specialized accreditation information.

## **III. Program Statement on Adequacy, Viability, Necessity, and Consistency with College Mission**

### **A. Adequacy**

1. **Curriculum:** The Health Care Technology curriculum spans two semesters. The support courses required in the program are common to both options that are offered, electrocardiography and medical laboratory assistant. Further, some of the support courses are the same courses required in allied health and nursing associate degree programs. Thus, students may ladder one's health care career education and move from the certificate program to an associate degree program with minimal loss of credit earned. Many graduates of the certificate in medical laboratory assistant continue one's education and complete the application process to be accepted into Southern's medical laboratory technology program.

Another special feature of the program is that graduates may take national certification exams. Passage rate for the certification exams are exceptionally high. Each year 90-100% of students within each option pass the exam on the first attempt. A copy of the medical laboratory assistant curriculum is reflected in Appendix I.

2. **Faculty:** The Health Care Technology Program is directed by a coordinator for each option. The paramedic department coordinator directed the electrocardiography option and the medical laboratory technology department coordinator directs the medical laboratory assistant option. The time each coordinator devotes to the Health Care Technology Program each week is approximately one (1) hour. Instructors for the allied health courses in each option are different as well. (See Appendix II.)

The electrocardiography option required that the instructor be a licensed Registered Professional Nurse, hold an associate degree in nursing, and demonstrate expertise in electrocardiography. The instructor who taught

electrocardiography exceeded the requirements. She possesses the following qualifications:

1. Licensed RN in West Virginia,
2. Bachelor degree in nursing or another field,
3. Demonstrated expertise in electrocardiography, and
4. Workshop and seminar attendance for related professional development.

The medical laboratory assistant option requires that the instructor be certified as a Medical Laboratory Technician (MLT), hold an associate degree in medical laboratory technology, and demonstrate expertise in the field. The instructor who teaches the medical laboratory assistant courses exceeds the requirements. She has the following qualifications:

1. American Society of Clinical Pathologist's Certified Medical Laboratory Scientist
2. West Virginia State License,
3. Associate degree in medical laboratory technology,
4. Regents Bachelor of Arts Degree,
5. Teaching experience in the medical laboratory technology program,
6. Demonstrated expertise in medical laboratory technology,
7. Thirty years' experience in the field,
8. Works per diem in community facilities to stay abreast of changes and new technology in the field of medical technology, and
9. Attends workshops and seminars for professional development.

The medical laboratory assistant instructor is a full time faculty member for the medical laboratory technology program. She devotes approximately five (5) hours per week of instruction to the medical laboratory assistant option of the Health Care Technology Program. Teaching in this option for this instructor is considered as part of her full time work assignment. Thus, teaching in this option constitutes approximately 36% of her full time faculty workload.

Support courses, such as English, anatomy and physiology, and psychology, are taught by qualified college faculty who meet or exceed the qualifications of the college accrediting body, Higher Learning Commission of the North Central Association of Schools and Colleges.

### **3. Students**

- 1. Entrance Abilities:** The Health Care Technology program has an open enrollment each fall for students admitted to Southern. However, for many courses in the curriculum, a student must have completed "transitional" English and math courses or have acceptable ACCUPLACER/ACT scores as pre-requisites.

There is an enrollment cap set for each option. The cap is set with a consultation between the coordinator and the instructor. The cap is largely dependent on the availability of clinical experience opportunities in the second semester of each year for each option. In addition, prior to clinical experiences in the spring of each year, the students must complete a background check, drug screen, and immunizations such as documentation of MMR (measles, mumps & rubella), Hepatitis B, Td (tetanus), and a PPD test (skin test for tuberculosis).

- 2. Exit Competencies:** Exit abilities of the students who graduate from the program are dependent upon the option completed. While it is true each option has some skills and knowledge in common, the focus of each option is quite different.

First, EKG students receive basic patient care knowledge such as communication, taking vital signs and patient transfer techniques. Graduates of Southern's electrocardiography (EKG) option perform basic EKG's, assist in applying a Holter monitor, monitor and review cardiac rhythms, and observe stress testing. Upon exiting the program, the graduates had skills and abilities to work at an entry level position in hospitals, clinics, and doctor offices. Electrocardiograms and interpretation of a Holter monitoring conducted in hospitals, doctor's offices, and clinics are now being performed by other departments, such as respiratory, nursing, and laboratory personnel. Some institutions are providing on the job training for these tasks after hire. Employers are seeking individuals to perform many tasks and skills often crossing disciplines. An online search revealed the discipline of a medical assistant when EKG Technician was entered. A sample of job postings is included in this review. The results reflect a search completed for EKG Technician. Some job postings required tasks to be performed that are multidisciplinary and involve a more in-depth patient care. (See Appendix III.)

The search of the current *Occupational Outlook Handbook* for "EKG Technician" yielded information for Cardiovascular Technologists and Technicians. Information was not the only information listed that included the educational information received by the student completing the electrocardiography option. A search at [onetonline.org](http://onetonline.org), EKG Technician, encompassed multiple job tasks that were not provided in the electrocardiography option content. A summary of on the job responsibilities included:

- Conduct tests on pulmonary or cardiovascular systems of patients for diagnostic purposes. May conduct or assist in electrocardiograms,

cardiac catheterizations, pulmonary function tests for lung capacity, and similar tests. This search also included vascular technologists.

- Graduates of the medical laboratory assistant (MLA) option perform basic venipuncture, collection of blood and body fluid samples for laboratory testing, and perform simple laboratory diagnostic tests under the supervision of a medical laboratory technologist or physician. Upon exiting the program, the graduates have skills and abilities to work an entry level position in hospitals, clinics, and doctor offices.

#### IV. Resources

- A. Financial:** The electrocardiography and medical laboratory assistant options receive an annual budget from the college. While it is not adequate to purchase audio/visuals, computer programs, or equipment, it is sufficient to purchase supplies and provide for travel of faculty.

The electrocardiography program was fortunate to receive a grant from the Community and Technical College System of West Virginia in the fall of 2008 to increase enrollment. Videos, library books, and two laptop computers were purchased this year. Also, the electrocardiography laboratory has been upgraded with new cabinets. The Boone Campus was added as a new location for the program for fall 2008.

- B. Facilities:** The electrocardiography and medical laboratory assistant options enjoy clinical affiliate contracts with hospitals and clinics in the service district as well as in the Kanawha Valley where larger facilities are located. Students have received excellent opportunities for clinical experiences in their field of study.

The laboratories and classrooms on the Logan Campus are more than adequate for both programs. At other campus locations, an electrocardiography laboratory is not available, but classrooms are adequate and supplies, electrocardiography machine, and transport carrier can easily be moved to an available classroom.

Library resources have been made available in the past years to purchase texts, periodicals and online resources. The library staff has been instrumental in making faculty aware of this.

#### V. Assessment Information:

- A. Assessment Data:** In an effort to provide more effective educational services for students and faculty, Southern West Virginia Community and Technical College's assessment program helps identify a student's academic strengths and weaknesses. Accurate assessment is essential to the process of appropriate course placement for entering students. Entrance assessment provides information to assist in assessing present level of competencies, placing students in appropriate courses, and developing



instructional programs to meet the needs of entering students. Students may not enroll in a mathematics course or English course which is designed to be applied toward a certificate or associate degree unless the minimum score prescribed is earned

All students enrolling in certificate and associate degree programs are expected to participate in institutional programs, courses and/or service assessment activities. This participation will most often be in the form of tests to determine the degree of student academic achievement within the basic skills, the general education core curriculum, or the academic major. As part of the academic calendar, “testing days” will be established during which students will be required to participate in these assessment activities. Participation is an expectation of students as a condition of their continuation in the academic program of study and as a prerequisite to graduation. Assessment activities include entrance assessment for course placement, mid-point assessment to determine academic progress, exit assessment prior to program completion and graduation. Other forms of assessment strategies (i.e. - simulations, licensure exams, etc.) may also be used. Failure to participate in scheduled assessment activities may result in limitations on continued enrollment, forwarding of official transcripts, and/or program completion and graduation.

Assessment activities include entrance assessment for course placement as described in the section labeled “entrance abilities.” Final evaluation occurs when the students take the appropriate national certification exam, electrocardiography and/or phlebotomy. Each year, a few students complete both options simultaneously and take both certification exams.

National certification exam results for the electrocardiography and the medical laboratory assistant students are in Appendix V. Students taking the exam must have taken both semesters of the option specific courses, but have not necessarily completed all of the support courses. Some students have taken the courses to improve their skills without an intention to graduate from the program. Both program options, electrocardiography and medical laboratory assistant, have impressive certification exam results.

**B. Assessment Tools and Data for the Last Five Years:**

Electrocardiography and medical laboratory assistant students take the institutional assessment exam each year as part of the overall college assessment program. There has not been any significant change in either program related to the assessment data. The students in the programs are successful on their certification exams and gain employment when they choose to seek employment or continue one’s education. Electrocardiography and medical laboratory assistant students participate in assessment day at the college. Assessment has changed various times over the past five years. The following is a synopsis of provided Assessment information by the college.

## **1. Southern Assessment Synopsis of the Report for (2008/2009):**

The Applied Mathematics (AM) assessment measured the examinee's skill in applying reasoning to work-related problems. The test questions required the examinee to set up and solve the types of problems and do the types of calculations that actually occur in the workplace. This test was designed to be taken with a calculator. As on the job, the calculator serves as a tool for problem solving. A formula sheet that included all formulas required for the assessment was provided. Problems at Level 4 measured the examinee's skill in performing one or two mathematical operations, such as addition, subtraction, or multiplication, on several positive or negative numbers. (Division of negative numbers is not covered until Level 5.) Problems required adding commonly known fractions, decimals, or percentages (e.g.  $\frac{1}{2}$ , .75, 25%), or adding three fractions that share a common denominator. At this level, the examinee was also required to calculate averages, simple ratios, proportions, and rates, using whole numbers and decimals.

The Reading for Information (RFI) assessment measured an examinee's skill in reading and understanding work-related instructions and policies. The reading passages and questions in the assessment were based on the actual demands of the workplace. Passages were in the form of memos, bulletins, notices, letters, policy manuals, and governmental regulations. At Level 4, the reading passages were slightly more complex than those at Level 3. They contained more detail and described procedures which involve a greater number of steps. Some passages described policies and procedures with a variety of factors which must be considered in order to decide on appropriate behavior. The vocabulary, while elementary, included words that were more difficult than those at Level 3. For example, the word "immediately" may be used at this level, whereas at Level 3 the phrase "right away" would be used.

The Work Keys Locating Information (LI) test measured the skill people use when they work with workplace graphics. Examinees were asked to find information in a graphic or insert information into a graphic. They had to compare, summarize, and analyze information found in related graphics. There were four levels of difficulty. Level 3 is the least complex and Level 6 was the most complex. The levels were built on each other, each incorporating the skills assessed at the preceding levels. For example, Level 5 included the skills used at Levels 3, 4, and 5.

It should be noted that the level of expected performance of electrocardiography certificate students on the Work Keys exam was at the same level of expectation as the nursing students who are in a highly skilled associate degree program. It is unclear why the expectation of a one year electrocardiography certificate program was at the same level as an associate degree program in the health care field. The knowledge level and skills of the associate degree program is without a doubt at a higher level than a certificate

program. So, it was requested that the Work Keys exam expectations be reviewed.

## **2. Southern Assessment Synopsis of the Report for (2009/2010):**

Southern West Virginia Community and Technical College, as always, was committed to student success and programmatic excellence. To determine the effectiveness of both the general education and programmatic curriculums, students participated in a variety of assessment activities throughout the year. Assessments were done on a course, programmatic and institutional level. Course level assessments were outlined in the assessment matrices. Programmatic assessments were done through program review and examination of licensure pass rates. Institutional assessments included examination of student work through rubrics and performance on the Proficiency Profile. Students took the Proficiency Profile after completion of 45 hours of college level work and completion of at least one college level math class and one college level English class.

This was the first year that all students were assessed using the Proficiency Profile from Educational Testing Service. To this point, all students pursuing certificates or Associate of Applied Science (AAS) degrees were assessed using Work Keys. The decision was made at the state system office to no longer fund the administration of that test. It was in the opinion of the Assessment Committee that the Proficiency Profile measured general education outcomes more closely and the decision to test all students using the Proficiency Profile was made. When making comparisons with national data from the Proficiency Profile, Southern students were lagging behind. The percentage differences were slight, but lower than the national comparison data. Faculty evaluated each program the next year to determine what measures, if any, needed to be taken to improve scores. Steps were taken to add a common general education core to the certificate and AAS programs in hopes of providing a broader general education for career and technical students. Further analysis needed to be done to separate results for AA, AS and AAS students to see if the general education core was effective.

## **3. Southern Assessment Synopsis of the Report for (2011/2012):**

According to the *New Leadership ALLIANCE for Student Learning and Accountability 2012*, by 2018 the United States will have several million fewer degree recipients than the economy needs and can support. Closing this gap required that more college students gained the knowledge and skills to become productive workers. The commitment that higher education made to college access needed to include a commitment to helping students succeed in attaining degrees. Assessment improves planning and decision making and provided evidence about the quality of learning, teaching, service and engagement. At Southern assessment responsibilities were distributed among various programs and units across the College. This report emphasized how

the processes are all based on the same guiding principle that systematic decisions can be made from the evidence gathered. Southern was committed to assessment that is meaningful, manageable, efficient, and useful for making decisions at the departmental level, as well as the college level. Southern began to develop processes to provide institutional assessment results for decision making and accountability purposes. Southern was focused on outcomes based assessment. The academic programs and the other programs that impacted student learning established measurable and observable learning outcomes and had ongoing assessment and periodic assessment processes.

General education goals and objectives at Southern state that students will demonstrate their ability to think critically by analyzing and synthesizing material. Every student will possess the skills defined in our General Education Philosophy and Goals. To that end, every year the faculty review the program curricula and evaluate student performance in each area of the General Education competencies based on the academic assessment data provided by the ETS Proficiency Profile and the college Rubric Scoring Teams in writing and math. Based on last year's data, the academic unit made the following changes in course and program curricula.

The primary responsibility for assessing and improving student learning falls on colleges. Those granting educational credentials must ensure that students have developed the requisite knowledge, skills, values, and attitudes that prepare them for work, life, and responsible citizenship. Southern focuses on both quantity and quality, increasing our graduation rates, and improving the learning represented in our degrees.

We are dedicated to a strong, well defined outcome assessment program, and our outcomes are clearly articulated as to what every student should be able to do, achieve, demonstrate, or know upon completion of a degree. At Southern assessment processes are ongoing, sustainable, and integrated into the work of faculty, staff, and administration. The results of the evidence-based changes in programs and practices are reported to appropriate internal and external constituencies via the institutional website.

### **C. Graduate and Employer Satisfaction:**

The graduate survey return rate is minimal. There has been a zero percent return of employer surveys. Of the surveys received from graduates, students each year overwhelmingly report that Southern met their educational needs and are satisfied with their field of study. One hundred percent of returned surveys revealed that the quality of the education received was at a superior level. The survey for electrocardiography and medical laboratory assisting is offered to the graduates in one survey. This is utilized due to some students enrolling in both options. (See Appendix IV.)

Students who graduated were very pleased with their preparedness for employment. Employers praise the graduates in advisory meetings and whenever the instructor visits the facilities. All surveyed reported being prepared for the workplace.

All of students surveyed for the past five years strongly agreed that they were satisfied with the quality of instruction provided by Southern. They strongly agreed on the following: Professionalism, general knowledge, trained to make judgments, proficiency and accuracy, performance of procedures, effective written and oral communication skills, time management, and respect.

#### **VI. Previous Program Review:**

The Health Care Technology program that includes the electrocardiography and medical laboratory assistant options was approved during the last review in 2008/2009 with no further recommendations for those program options.

#### **VII. Advisory Committee:**

The advisory committee for the Health Care Technology program consists of employees and employers of various health care facilities representing administrative and staff positions. The advisory group is large and actively participates. Curriculum and program assessment are discussed at each yearly advisory meeting.

The advisory committee is not exclusive to the Health Care Technology program. Advisory meetings for each option are held concurrently with all programs of the college. For example, electrocardiography has met with the paramedic/nursing advisory members. The medical laboratory assistant program meets with the medical laboratory technology advisory members.

#### **VIII. A. Strengths/Weaknesses/Viability/Necessity/Consistency:**

Electrocardiography and Medical Laboratory Assistant Options:

##### **1. Strengths:**

1. Dedicated coordinators and instructors for each option.
2. Licensed/Certified and qualified faculty.
3. Cooperation of clinical facilities.
4. Provides early opportunity for students seeking an allied health career and a way to build skills and become employable with a certificate in medical laboratory assisting.
5. Provides an excellent education that can be completed in one academic year.
6. Number of students that return to school to pursue an associate's degree.

##### **2. Weaknesses:**

1. Number of surveys returned, graduate and employer.

2. Employment after graduation in field for electrocardiography.
3. Limited learned skills and focus in the electrocardiography option.
4. Limited employment opportunities in the immediate geographic area for both options.
5. Salary range in West Virginia for these skilled individuals.

### **3. Viability:**

#### **1. Program enrollment for the previous 5 years:**

The electrocardiography option limited enrollment to twenty-five students due to availability of clinical space practice at each campus location. However, it was rare that twenty-five students were enrolled or successful in progressing to the spring semester for the practicum class. As with any health care field, it is a rigorous curriculum and some students decide that health care is not for them and change their major. (See Appendix V.)

Enrollment numbers for the medical laboratory assistant option has been consistent since 2009. The enrollment numbers have ranged between 15 and 19 since 2009. The number accepted is reflective of laboratory space available for this education. The number for graduates has only been less than 10 one time since 2009. Seventy-five percent of the students surveyed were returning to school to further their degree in the medical laboratory field. Fifty percent were employed in the field of medical laboratory assisting, phlebotomy. (See Appendix V.)

#### **2. Program Course Enrollments**

Programmatic courses in the curriculum of each option vary in enrollment. The MLA option can only take a certain number of students due to laboratory space availability. Course enrollment has varied between 8 and 19 over the last five years. (See Appendix V.) The EKG option experienced a spike in enrollment in 2009 to 25. The option was being offered on two campuses at this time.

#### **3. Service Courses:**

Neither the EKG or MLA certificate programs have departmental courses that are required for students in other majors and support programs outside the major.

#### **4. Off Campus Distance Delivery:**

During the 2009 and 2010 academic years, the electrocardiography option was offered on the Wyoming Campus. Graduates were successful on the certification exams with 100% passage rates, but enrollment was exceedingly

low, two and three respectively. The determination was made to remove this option from the Wyoming Campus beginning fall 2011. The low enrollment may have been due to the lack of advertising and the geographic location. Opportunities for clinical sites are minimal. The last offering on the Wyoming campus was satellite with the Boone Campus and this saw no improvement in the number of students enrolling.

The medical laboratory assistant option admits students only on the Logan Campus due to faculty and laboratory constraints.

## **5. Articulation Agreements:**

Currently there are no articulation agreements in place for this certificate program. On the other hand, most support courses required in the options are articulated to most other colleges and universities in West Virginia as well as Franklin University in Columbus, Ohio. Southern West Virginia Community and Technical College has a unique agreement with Franklin University to offer a variety of Bachelor degrees to our students who transfer to that institution.

## **4. Necessity**

### **1. Graduates**

#### **EKG**

The number of graduates of the electrocardiography certificate option is significantly lower than enrollment numbers. Graduates of this option have been seeking employment in other arenas or returning to college to further one's education. Also, the attainment of a certificate in the field of health care is no longer an option for points on the allied and health and nursing application. One hundred percent of those returning EKG surveys were not employed and many stated there were no jobs in the area. Graduate numbers have always been minimal in the EKG option.

#### **MLA**

The number of graduates of the MLA certificate option has only been lower than ten once since 2009. However, enrollment has not changed significantly from previous years. With this being an open enrollment program, it has been observed that some students are only completing the three medical laboratory assistant skill set courses which is sufficient for placement as a phlebotomist in some facilities. This explains the lower numbers for those completing the certificate requirements to some degree.

Information collected through surveys and other methods for thirty nine students who completed the three MLA skill set courses shows that 25.6 %

were employed as phlebotomists/medical laboratory assistants, 56.4% continued their education in one of the associate degree allied health programs, 15.4% were not employed, and 2.6% were employed in another field. Further, of the 56.4% who continued their education in allied health, 13 continued in medical laboratory technology, three in nursing, two in dental hygiene, two in emergency medical technician, one in surgical technology, and one in radiologic technology.

Therefore, the medical laboratory assistant certificate program is meeting a need of the service area by keeping the vacancy rate for phlebotomists low and assisting undecided students with information toward choosing an allied health field.

## **2. Placement Rates**

EKG and MLA options could be completed at the same time and the opportunity is available to continue with one's associate degree in nursing, surgical technology, medical laboratory technology, respiratory care, emergency medical services or radiologic technology if a student so chooses. For example, a graduate with expertise in electrocardiography and nursing is very well suited to work in the emergency department, intensive care or cardiac care unit, and a telemetry floor. A surgical technologist can utilize the electrocardiography skills well in the diagnostic laboratory where cardiac tests and catheterizations are performed. Also, those pursuing or working in the field of emergency medical services would benefit greatly from information provided in electrocardiography.

The past five years has not been reflective of enrollment into the electrocardiography option of students pursuing the above degrees or a reflection of individuals working in these fields who enroll in this certificate option. Further, a five hour basic electrocardiography course was developed, AH 111, and is being offered to meet the needs of the health care industry and provide this educational content to those desiring to further one's education.

## **MLA**

According to a study conducted by the American Society of Clinical Pathologists (ASCP) Board of Registry, the University of California, and MORPACE International (Market Opinion Research Product and Consumer Evaluation), the vacancy rate for Certified/Licensed Phlebotomists was an average of 9.1% with hospitals having 100-229 beds reporting as much as a 14.7% vacancy rate. Additionally, 4.0% of working phlebotomists are projected to retire in the next two years which is anticipated to continue to fuel high vacancy rates. Historically, many students graduating with a certificate in MLA gain an interest in the laboratory field and decide to continue their education in the field of Medical Laboratory Technology.



The vacancy rate for phlebotomists in southern West Virginia is presently low. This is in part due to Southern’s MLA program filling this need. Beyond southern West Virginia, the demand for skilled allied health graduates is more intense. Facilities from North Carolina and Kentucky attend Southern’s career fair to recruit our graduates. Further, many job vacancy notices and letters are received each year requesting the program coordinators to post the information for students.

### 3. Job Placement and Salary

Reporting from April 6, 2012 the *Occupational Outlook Handbook* listed the beginning median hourly pay for 2010 for a phlebotomy technician is \$13.50 to \$14.52 per hour. Phlebotomy technician is the closest description that can be found to a medical laboratory assistant in the *Occupational Outlook Handbook*. Please make note, the Bureau of Labor Statistics (bls.gov) website for the Occupational Outlook Handbook provided a link to Medical and Clinical Laboratory Technologists and Technicians with Phlebotomy Technician listed also. Access to the link revealed only Quick Facts for Medical and Clinical Laboratory Technologists and Technicians. The above salary range was listed beneath Medical and Clinical Laboratory Technologists and Technicians, but additional information was not revealed at the website link for Phlebotomy Technician. Employment of medical laboratory technologists is expected to grow by 11 percent between 2010 and 2020, about as fast as the average for all occupations. Employment of medical laboratory technicians is expected to grow by 15 percent between 2010 and 2020, about as fast as the average for all occupations.

#### State and National Trends (onetonline.org)

Employment trends data for **Phlebotomists** is included in the trends data for *Healthcare Support Workers, All Other*.

United States	Employment		Percent Change	<a href="#">Job Openings</a> <sup>1</sup>
	2010	2020		
Healthcare Support Workers, All Other	202,300	237,000	+17%	6,580
West Virginia	Employment		Percent Change	<a href="#">Job Openings</a> <sup>1</sup>
	2010	2020		
Healthcare Support Workers, All Other	1,320	1,460	+10%	30

## State and National Wages

Location	Pay Period	2012				
		10%	25%	Median	75%	90%
United States	Hourly	\$10.26	\$12.07	\$14.29	\$17.27	\$20.48
	Yearly	\$21,300	\$25,100	\$29,700	\$35,900	\$42,600
West Virginia	Hourly	\$8.84	\$10.05	\$11.51	\$14.10	\$16.96
	Yearly	\$18,400	\$20,900	\$23,900	\$29,300	\$35,300

The multiple online search at [bls.gov](http://bls.gov) in the field of electrocardiography yielded results for cardiovascular sonographers, technicians and technologists. The electrocardiography option at Southern does not entail education a student receives in these listings. Specifics were listed as:

Cardiology technologists monitor patients' heart rates and help diagnose and treat problems with patients' hearts. The procedures can be invasive (such as inserting catheters) or noninvasive (such as using ultrasound equipment to take images of the heart). Cardiac catheterization involves helping a physician thread a catheter through a patient's artery to the heart. The procedure determines whether a blockage exists in the blood vessels that supply the heart muscle or helps to diagnose other problems. Some of these procedures may involve balloon angioplasty, which can be used to treat blockages of blood vessels or heart valves without the need for heart surgery. Technologists prepare patients for these procedures by shaving and cleansing the area where the catheter will be inserted and administering topical anesthesia. During the procedure, they monitor the patient's blood pressure and heart rate. Some cardiology technologists also prepare and monitor patients during open-heart surgery and during the insertion of pacemakers and stents that open blockages in arteries to the heart and other major blood vessels. An EKG, or electrocardiogram, monitors the heart's performance through electrodes attached to a patient's chest, arms, and legs while the patient is lying on a table. To test a physically active patient, the cardiac technologist uses a Holter monitor or stress test. The technologist puts electrodes on the patient's chest and attaches a portable EKG monitor to the patient's belt. Vascular technologists (Vascular sonographers) help physicians diagnose disorders affecting blood flow. Vascular technologists listen to the blood flow in the arteries and veins to check for abnormalities. They do noninvasive procedures using ultrasound instruments to record information, such as blood flow in veins, blood pressure, and oxygen saturation. Many of these tests are done during or immediately after surgery.

Cardiac sonographers (Echocardiographers) use ultrasound to examine the heart's chambers, valves, and vessels. They use ultrasound instruments to create images called echocardiograms. The echocardiogram may be done while the patient is either resting or physically active.

Cardiovascular technicians work closely with cardiovascular technologists. Technicians who specialize in electrocardiogram (EKG) testing are known as cardiographic or electrocardiogram (EKG) technicians. Technologists and technicians often work closely with diagnostic medical sonographers.

Electrocardiography graduates have informally reported a salary average of approximately \$8-10 per hour in the local area. The current *Occupational Outlook Handbook* indicated a median earnings nationwide for cardiovascular technologists was \$49,410 in 2010. However, the low end of the range of salaries was approximately \$21,000. Since West Virginia is a state where salaries often fall below the national average, one could expect that the electrocardiography technician would earn \$20,000 per year on average.

**State and National Trends (onetonline.org)**

Employment trends data for Cardiovascular Technologists and Technicians is included in the trends data for *Healthcare Support Workers, All Other*.

Location	Pay Period	2012				
		10%	25%	Median	75%	90%
United States	Hourly	\$13.38	\$17.76	\$25.04	\$32.46	\$38.84
	Yearly	\$27,800	\$36,900	\$52,100	\$67,500	\$80,800
West Virginia	Hourly	\$10.11	\$11.97	\$20.36	\$25.97	\$32.86
	Yearly	\$21,000	\$24,900	\$42,300	\$54,000	\$68,300
<b>United States</b>		<b>Employment</b>		<b>Percent Change</b>	<b>Job Openings<sup>1</sup></b>	
		<b>2010</b>	<b>2020</b>			
Cardiovascular Technologists and Technicians		49,400	63,900	+29%	2,210	
<b>West Virginia</b>		<b>Employment</b>		<b>Percent Change</b>	<b>Job Openings<sup>1</sup></b>	
		<b>2010</b>	<b>2020</b>			
Cardiovascular Technologists and Technicians		460	590	+28%	20	

**EKG and MLA Survey Results:**

Health Care Technology graduates were surveyed from 2009 to 2013. The return rate of surveys is minimal. The rate of pay for graduates employed for a phlebotomist was reported at \$10.70 per hour. Students completing and graduating with the EKG certificate were still searching for employment in the field or had returned to school.

**4. Consistency with Mission:**

Southern West Virginia Community and Technical College exists to serve the communities of southern West Virginia. The college strives to fulfill current and future higher educational and vocational/technical needs of the resident.

The college emphasizes transferable learning, enabling students to achieve work, career, and personal success.

## **5. Recommendation**

The medical laboratory assistant option will continue as is on the Logan Campus, but it is recommended for it to be removed from the Health Care Technology umbrella as an option and listed as a stand-alone certificate program in the college catalog. Further, the recommendation is for the electrocardiography option to be removed at this time and, should a need for other allied health certificate degrees arise, for these to be listed as separate certificate degree programs as well.

## **APPENDICES**

## Appendix I

### **Health Care Technology**

Certificate

30 Credit Hours

#### **Purpose**

The Health Care Technology Certificate Program prepares graduates as multi-skilled flexible health care workers, who work under the direction of licensed professionals such as, medical laboratory technologists and physicians. Students may work in a variety of health care settings.

Certification exams may be available and students are expected to take appropriate national certification exams. The Health Care Technology Program graduate is not intended to be a medical laboratory technician.

The full Health Care Technology Program is available on the Logan Campus. The Boone/Lincoln, Williamson, and Wyoming/McDowell campuses offer the program support courses only.

#### **Medical Laboratory Assistant**

<b>Dept./No.</b>	<b>Title</b>	<b>Credit Hours</b>
<b>Support Courses</b>		
BS 124	Human Anatomy and Physiology I	4
BS 125	Human Anatomy and Physiology II	4
EN 101	English Composition I	3
MT 121	College Math for General Education	3
PY 218	Life-Span Developmental Psychology	3
<b>Major Courses</b>		
AH 100	Patient Care Technology	3
AH 103	Principles of Phlebotomy	3
AH 108	Medical Terminology	2
AH 112	Basic Medical Laboratory Procedures	3
AH 113	Phlebotomy Clinical Practicum	2

## Appendix II

### APPENDIX II – Faculty Data

(No more than **TWO** pages per faculty member)

Name Shirley Dardi Rank Assistant Professor

Check one: Full-time X Part-time \_\_\_\_\_ Adjunct \_\_\_\_\_

Highest Degree Earned Regents Bachelor of Arts

Date Degree Received May 2008

Conferred by West Virginia State University

Area of Specialization Associate of Applied Science – Medical Laboratory Technology

Professional registration/licensure American Society of Clinical Pathologists,  
& WV State License

Years of employment at present institution 21

Years of employment in higher education 21

Years of related experience outside higher education 27

Non-teaching experience 27

To determine compatibility of credentials with assignment:

- (a) List courses you taught this year and those you taught last year: (If you participated in team-taught course, indicate each of them and what percent of courses you taught). For each course include year and semester taught, course number, course title and enrollment.

<u>Year/Semester</u>	<u>Course Number &amp; Title</u>	<u>Enrollment</u>
2012/Spring	AH 112 Basic Laboratory Procedures-----	17
	AH 113 Phlebotomy Clinical Practicum-----	17
	*ML 103 Immunoematology & Serology-----	11
	*ML 102 Clinical Chemistry-----	11
	*ML 205 MLT Seminar-----	6
2012/Summer	ML 200 Phlebotomy Practicum-----	9
2012/Fall	AH 103 Principles of Phlebotomy-----	15
	*ML 101 Clinical Hematology-----	15
	*ML 202 Clinical Microbiology-----	9
	*ML 201 Urinalysis and Body Fluids-----	9
2013/Spring	AH 112 Basic Laboratory Procedures-----	10
	AH 113 Phlebotomy Clinical Practicum-----	10
	*ML 103 Immunoematology & Serology-----	14
	*ML 102 Clinical Chemistry-----	14
	*ML 205 MLT Seminar-----	9
2013/Summer	ML 200 Phlebotomy Practicum	13
2013/Fall	AH 103 Principles of Phlebotomy-----	16
	*ML 101 Clinical Hematology-----	19
	*ML 202 Clinical Microbiology-----	13
	*ML 201 Urinalysis and Body Fluids-----	13

\* Denotes courses team-taught with Vernon Elkins, MLT Program Coordinator  
ML 101,102 and 202 – 20%, ML 103 – 60%, ML 201- 20%. ML 205-5%

- (b) If degree is not in area of current assignment, explain. NA

- (c) Identify your professional development activities during the past five years.

I attended the Siemens Healthcare Diagnostics Users Conference at Pipestem, WV in May 2009. It is a two day conference of extensive training on new instruments and information about current topics. I also attend training sessions at Southern WV Community & Technical College in areas such as: Banner training, sexual harassment, student advising, etc. I attended the 13<sup>th</sup> Annual Joint Meeting of WVCLMA, WVSCLS, & WVSSAMT, where continuing education is provided. In addition to these, I also receive Continuing Education in my flex position at Logan Regional Medical Center in areas such as: Safety, Patient Care, Hemostasis, Plasma products, etc.





### **Appendix III**

Information of job postings in the health care area of electrocardiography:

Reference: monster.com

#### **EKG Technician (Per-Diem)**

Previous experience as a Multifunction Tech or Telemetry Tech required. Must be able to perform a majority of patient care functions.

#### **EKG Technician**

In addition preparing patients for EKG testing, you will be responsible for confirming appointments, taking vitals, patient histories and update patient charts.

#### **EKG Technician**

In addition to preparing patients for EKG testing, EKG tech will be responsible for confirming appointments, taking vitals, patient histories and updating charts.

#### **Cardiac Stress Technician - PRN (Paramedic skillset req'd)**

Providers of in-office nuclear cardiology imaging and ultrasound services to physician practices, hospitals and imaging centers.

#### **Cardiac Stress Technician (Paramedic skillset)**

#### **Monitor Technician/ED Clerk.**

#### **Cardiac Stress Technician (Paramedic skillset req'd)**

#### **Cardiac Technician**

Holter Technician/Monitor Technician/EKG Technician/Event Technician/Cardiac Technician  
To provide ECG monitoring by receiving the ECG data, processing the clinical data, and making sound clinical judgment in regard to patient care. Manage assigned Studies from beginning to end. Must have experience as a Holter or monitoring technician, CCT Certified (Or RN with ACLS or EMT-Paramedic.)

**Appendix IV**

**Southern West Virginia Community and Technical College  
Electrocardiography (EKG) and/or Medical Laboratory Assistant Program (MLA)**

**Graduate Survey**

1. Field of Study: EKG\_\_\_\_\_ MLA\_\_\_\_\_ Both\_\_\_\_\_
2. Are you employed? \_\_\_\_\_ If not, why? \_\_\_\_\_
3. What is your job title? \_\_\_\_\_
4. Where are you employed? \_\_\_\_\_
5. Employer's Address:\_\_\_\_\_
6. Employer's Telephone Number:\_\_\_\_\_
7. May we mail/telephone your employer an employer survey? \_\_\_\_\_

**Please mark your response in the appropriate column.**

5=Strongly Agree 4= Generally Agree 3=Neutral (acceptable) 2=Generally Disagree  
1=Strongly Disagree

**I. KNOWLEDGE BASE**

	<b>The program:</b>	<b>Strongly agree 5</b>	<b>Generally agree 4</b>	<b>Neutral 3</b>	<b>Generally disagree 2</b>	<b>Strongly disagree 1</b>
A	Taught me the professional knowledge base required to function effectively on the job.					
B	Taught me the general knowledge base required to function effectively on the job.					
C	Taught me to interpret pertinent information for my place of employment.					
D	Trained me to make sound judgments.					

**II. PROFICIENCY**

	<b>The program:</b>	<b>Strongly agree 5</b>	<b>Generally agree 4</b>	<b>Neutral 3</b>	<b>Generally disagree 2</b>	<b>Strongly disagree 1</b>
A	Helped me to become proficient in job skills.					
B	Taught me to perform accurately and efficiently.					
C	Taught me to perform procedures and modalities required for my job.					

**III. BEHAVIORAL SKILLS**

	<b>The program:</b>	<b>Strongly agree 5</b>	<b>Generally agree 4</b>	<b>Neutral 3</b>	<b>Generally disagree 2</b>	<b>Strongly disagree 1</b>
A	Helped me develop effective oral communication skills.					
B	Helped me develop effective written communication skills					
C	Encouraged me to conduct myself in an ethical and professional manner.					
D	Taught me how to manage my time effectively.					
E	Taught me to respect the beliefs and values of all persons, regardless of cultural background, religion, age or lifestyle.					

**IV. OVERALL RATING:**

		<p>Overall Rating:</p> <p>Score: _____</p>
A	<p><b>OVERALL RATING:</b> Please rate and comment on the <b>OVERALL</b> quality of your education received. Based on the following criteria:</p> <p>5- being superior quality            4 -being good quality            3 -being adequate quality            2- being fair quality            1- being poor quality</p>	

## Appendix V

The following tables provide a visual overview of data results for the past five years:

### **National Certification Exam Outcomes for Medical Laboratory Assisting (Logan)**

Spring of the Following Years:	Number of students taking exam	Number of students passing exam	Percentage of students passing exam
2009	7	7	100%
2010	5	5	100%
2011	14	13	93.33%
2012	13	13	100%
2013	8	8	100%

### **National Certification Exam Outcomes for Electrocardiography**

Spring of the Following Years:	Number of students taking exam	Number of students passing exam	Percentage of students passing exam
2009	7-Logan 2-Wyoming	7-Logan 1-Wyoming	100% 50%
2010	8-Logan 3-Wyoming	8-Logan 3-Wyoming	100% 100%
2011	9-Logan	8-Logan	88.9%
2012	5-Logan	5-Logan	100%
2013	6-Logan	5-Logan	83.33%

### **Program Enrollment 2009-2013:**

Enrollment	2009	2010	2011	2012	2013
MLA	15	19	18	15	16
EKG	25	15	12	11	NA

### **Program Course Enrollments 2009-2013:**

MLA	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014
Fall-AH 103	15	19	18	15	16
Spring-AH 112	10	17	17	8	Pending
Spring-AH 113	10	17	17	8	Pending

EKG	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014
Fall-AH 102	25	15	12	11	NA
Spring-AH 104	14	12	5	7	NA
Spring-AH 105	12	11	5	7	NA

### **Program Graduates 2009-2013:**

Graduates	2009	2010	2011	2012	2013
MLA	7	5	14	13	8
EKG	9	11	9	5	6