

**SOUTHERN WEST VIRGINIA COMMUNITY AND TECHNICAL COLLEGE
BOARD OF GOVERNORS
MEETING OF APRIL 16, 2013**

ITEM: Academic Program Review

RECOMMENDED RESOLUTION: *RESOLVED*, That the Southern West Virginia Community and Technical College Board of Governors approve the continuance of the Survey Technology Associate in Applied Science Program degree program at the current level of activity with corrective action in accordance with the provisions of the West Virginia Council for Community and Technical College Education, Title 135 Procedural Rule, Series 10, Policy Regarding Program Review.

STAFF MEMBER: Carol A. Howerton

RATIONALE FOR THE RECOMMENDATION:

In accordance with West Virginia Code and Council Policy Series 10, *Policy Regarding Program Review*, the Department of Applied and Industrial Technology conducted a program review of the Associate in Applied Science Survey Technology program during the 2012-2013 academic year.

Based on the program review, the continuation of the program with corrective action is recommended. The program is a relatively low program (cost of the instructor) as the advisory members continue to provide access to the necessary equipment. The program meets a vital need of industry.

Corrective actions include: Developing marketing/advertising material, offer admission each year, develop a fast track option, and review enrollment after admission of the next cohort in fall 2013.

PROGRAM REVIEW

Southern West Virginia Community and Technical College Board of Governors

Program with Special Accreditation

Program without Specialized Accreditation

Program: Survey Technology, Associate in Applied Science
Degree and Title

February 20, 2013
Date

INSTITUTIONAL RECOMMENDATION

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

- 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:

It is the recommendation of the department to continue the program with corrective actions. The program is a relatively low cost program (the cost of the instructor) as the advisory members continue to provide access to the necessary equipment. The program meets a vital need of industry. Corrective actions include: Developing marketing/advertising material, offer admission each year, develop track option. Review after next cohort admission.



Signature of person preparing report if other than Department Chair	Date
	2/20/13
Signature of Department Chair	Date
	2/25/13
Signature of Dean	Date
	3-25-13
Signature of Vice President for Academic Affairs	Date
	4/16/13
Signature of President	Date
	4/16/13
Signature of Chair, Board of Governors	Date

PROGRAM REVIEW

For Occupational Programs Implemented Under the Provisional of Series 37

West Virginia Council for Community and Technical College Education

Institution: Southern West Virginia Community and Technical College
Program: Survey Technology, Associate in Applied Science

April 9, 2013

PROGRAM REVIEW
Southern West Virginia Community and Technical College
Programs Without Specialized Accreditation

Summary of Findings
2012-2013

Program Name: Survey Technology, Associate in Applied Science

Hours Required for Graduation: 60

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

A. Adequacy

- The curriculum was developed by local business and industry.
- The program curriculum has been formally approved by the WV Board of Professional Surveyors.
- The program has appropriately trained faculty which have been approved by the WV Board of Professional Surveyors.
- The program has established goals and objectives.
- The program provides a variety of skilled job pathways.
- Entrance abilities for the students are within community college standards.
- The program maintains appropriate assessment tools.

Conclusion: Program meets minimum adequacy requirements.

B. Viability

- The program had acceptable enrollment for the first cohort.
- The number of students enrolled in the second and third cohort was limited and experienced unusual and unexpected problems.
- Graduates are limited but percentage of completion is within expectations for the program.
- There have not been enough cohorts to measure acceptable program enrollment and graduation rates.

Conclusion: Program has questionable viability.

C. Necessity:

- The program meets a validated industry demand.
- The graduates find successful gainful employment.

Conclusion: The program meets minimum requirements for necessity.

D. Consistency with Mission:

- The program does support the mission and vision of the institution.
- The program and core courses support the compact.
- There is limited impact on other programs.

Conclusion: The program is consistent with the mission of the college.

II. Plans for program improvement, including timeline.

Targeted advertising and marketing materials for the program will be developed. Fall 2012 – Spring 2013.

The program will expand admissions from every other year to every year to help keep the program availability known. Fall 2013.

Develop fast track versions of the courses that allow for licensed land surveyors without degrees and non-licensed working surveying professionals to gain a degree. Expand work with the local societies for surveying to identify potential candidates. Fall 2012-Spring 2013.

II. Identification of weaknesses or deficiencies from the previous review and the status of improvements implemented or accomplished.

This is the first full program review. The program underwent an initial post audit review in 2010. Enrollment was the main concern at that time and a review of enrollment was to be completed after the admission of the third cohort.

Unfortunately, the admission of the third cohort coincided with the problems associated with the Boone County Career and Technical Center. In response, the program was moved to the Logan campus and adjustments made. No new conclusions can be made about enrollment.

IV. Five year trend data on graduates and majors enrolled

No specific trends can be identified based on program enrollment or graduates. Job placement remains high and consistent. The last cohort enrolled seven and should graduate five at the end of the two year period.

V. Summary of assessment model and how results are used for program improvement

The assessment model contains a variety of measurements for classroom performance. Student advising and progress toward graduation is monitored by the department chair along with regular consultation with the program faculty. Outcomes are discussed at each department meeting and changes in delivery and content are made accordingly. Formal curriculum changes are presented in accordance with the established institutional policy and procedures for curriculum and instruction.

VI. Data on student placement

All but one graduate has obtained high quality industry related jobs that pay good wages and have reasonable benefits. The one graduate not employed in the industry continued with additional education and is employed by the Mingo County Board of Education. A majority of non-graduates has also obtained high quality industry related jobs that pay good wages.

VII. Final Recommendation Approved by the Governing Board

See the attached resolution for Board of Governors Final Recommendation and signatures.

PROGRAM REVIEW
Southern West Virginia Community and Technical College
Programs Without Specialized Accreditation
2012-2013

Program: Survey Technology, Associate in Applied Science
Date of Last Review: 2010 Post Audit Review

I. PROGRAM DESCRIPTION

The Survey Technology (SU) program is designed to meet the needs of the surveying profession in Southern West Virginia and the surrounding areas. It provides a thorough knowledge of surveying and mapping techniques necessary for licensure and/or employment.

The program was developed at the request of local business and industry. Individuals representing private business as well as state and local government agencies participated in the design and development of the curriculum. The program also underwent a formal approval process through the West Virginia Board of Professional Surveyors. Full approval for the program was granted May 19, 2009.

Upon successful completion of the Associate in Applied Science program, students will satisfy the educational requirement necessary to become a licensed surveyor under West Virginia State Code and may apply to sit for the Fundamentals of Land Surveying licensure exam.

II. SPECIALIZED ACCREDITATION INFORMATION

This program does not have any specialized accreditation information. ABET (*Accreditation Board for Engineering and Technology*) accreditation is available to the program. After review of the cost and requirements, a decision was made not to seek accreditation.

III. PROGRAM STATEMENT on Adequacy, Viability, Necessity and Consistency with College Mission.

A. Adequacy

1. Curriculum

The curriculum for the associate in applied science degree program in Survey Technology currently consist of 60 credit hours. These include 20 credit hours in a general education core, and 40 hours in surveying specific courses. General education courses are delivered in a variety of methods according to the discipline. Surveying courses are delivered using a combination of active learning methodologies. Lab activities are incorporated into each

course and includes hands-on activities specific to the topic of the course.

The program accepts cohorts of students every other year. The curriculum was changed for the incoming 2012-2013 cohort of students to comply with the state requirement to move programs to a maximum of 60 credit hours. No other changes have been made to the curriculum.

The curriculum can be found in Appendix I.

2. Faculty

The Survey Technology program utilizes full-time faculty members within each discipline to teach the general education course requirements. The program maintains one full-time term faculty position. This position is currently held by Stephen Birurakis. Faculty members for core courses must be approved by the West Virginia Board of Professional Surveyors and must hold a valid license. Available faculty data sheets are included as Appendix II.

3. Students

A. Entrance Abilities

Southern maintains an open door policy for admissions. Any prospective student with a high school diploma or GED may take classes at Southern. The Survey Technology program is an open admission program with cohorts accepted every other year. Students are enrolled on a first-come, first-serve basis with a maximum of 15. An additional 5 slots are available in some courses for students desiring to gain specific skills but not seeking the full program.

All entering students must satisfy general math and English requirement or take Transitional Studies courses to bring their skills to prerequisite levels of performance. The ACT test can be used to evaluate student placement or performance or the ACCUPLACER test can be taken on campus. Students are expected to start college level math during their first semester.

B. Exit Abilities

West Virginia State Code 30-13A on Land Surveyors requires individuals desiring to become a licensed land surveyor to complete a series of requirements including passage of specific examinations, years of service under direct supervision, and educational requirements as

outlined in section 8. Upon successful completion of the Associate in Applied Science program, students will satisfy the educational requirement necessary to become a licensed surveyor under West Virginia State Code and may apply to sit for the Fundamentals of Land Surveying licensure exam.

Specific Exit Abilities of Graduates include:

- exhibit ethical, responsible and dependable behavior
- communicate effectively with employees and customers
- work cooperatively with others in a team environment
- incorporate various aspects of a well-rounded academic background into workplace situations
- use graphics software
- use surveying equipment properly
- complete surveys and maps
- retrace properties
- understand and apply land and boundary laws

4. Resources

A. Financial

The program requires minimal financial support. The program was initiated with a three year Technical Programs grant in the amount of \$220,000.00. The grant provided purchasing of start-up equipment and faculty salary. The faculty salary has been moved to an institutional position and a budget of \$1700 has been provided each the past two years. Partnerships with business and industry provide access to current state-of-the-art surveying equipment at no cost to the institution. Between the grant, partnerships, and budget the financial support has been adequate to cover any necessary needs for the program.

B. Facilities

This program does not require any dedicated labs or facilities. The program utilizes existing classrooms and computer labs for delivery of curriculum.

5. Assessment Information

A. The Survey Technology program utilizes a variety of assessment measures. Student achievement in the general education and support courses is assessed in accordance with the institution's plan for assessment for such courses/programs. Students must participate in the MAPP exam during their final year. Student passage rates on the licensure exam will also be

used. The first graduating class utilized the Work Keys exam which has now been discontinued.

B. Key Elements:

- Educational goals of the program
 - 1) Provide students with fundamental surveying skills
 - 2) Provide students with hands-on experiences
 - 3) Provide students work-based experience
- Measures of evaluating success in achieving goals
 - 1) Student pre/post test scores
 - 2) Evaluation and feedback from internship
 - 3) Evaluation of project portfolios
- Identification of the goals which are being successfully met and those which need attention as determined by an analysis of the data
 - 1) Successful: Assessment data is limited due to the limited number of enrolled students. Feedback from employers has indicated that students completing core technical courses have sufficient technical skills and they are pleased with the student's abilities and knowledge. Students completing the first year and seeking jobs in the industry have a 100% employment rate. Only one student has attempted the licensure exam. While the student failed, he has stated that he did not prepare for the exam. The exam was taken almost a year after completion of the core surveying coursework and exam results showed a deficiency in trigonometry. Passage was missed by less than 10 points.
 - 2) Needs Attention: While no significant conclusions can be drawn at this point, limited math skills of students have been identified as a problematic area for the program but is cohort dependent. Successful completion of the program was limited or delayed due to math deficiencies of the students in the first two cohorts while the third cohort has not seen any problems. Processes and procedures are being developed for future cohorts of students to ensure appropriate math skills prior to admission into the program.

C. Course assessment data is reviewed on a regular basis for the program. Weak areas are identified from test data and observations from labs. Improvements are made within each course immediately. Additional changes are also made to subsequent courses to assist in quality instruction of students. No significant changes have been made to the surveying

courses. The math department has been reviewing the math courses and working on ways to assist the students with successful completion of the required math including a special topics math support course.

6. Previous Program Reviews

This is the first full program review. The program underwent an initial post audit review in 2010. Enrollment was the main concern at that time and a review of enrollment was to be completed after the admission of the third cohort. Unfortunately, the admission of the third cohort coincided with the problems associated with the Boone County Career and Technical Center. In response, the program was moved to the Logan campus and adjustments made. No other cohorts have been admitted.

7. Advisory Committee

The advisory committee has been expanded over the past 3 years. It operates on a continuous informal basis, working with local business and industry. The faculty member is a member of and attend the local society meetings on a regular basis and the society provides additional input and guidance for the curriculum. The faculty and the students attend the annual conference held by the Board of Professional Surveyors. A formal advisory meeting is held once a year.

8. Strengths and Weaknesses

STRENGTHS

- Solid, hands-on curriculum
- Faculty dedication
- Industry support and need
- Access to equipment

WEAKNESSES

- Limited program enrollment

B. Viability

1. Program Enrollment and Graduates

Number of Majors per year for previous 5 years

<u>Cohort - Year</u>	<u>Enrollment</u>	<u>Employed</u>
Cohort 1 – 2007-2009	16	6
Cohort 2 – 2009-2011	9	7
Cohort 3 – 2011-2013	8	6 (4, 1 army, 1 Coke 2 focus on school)

Enrollment Trends for previous 5 years

No trends can be accurately identified. Cohorts 2 and 3 experienced unexpected and uncontrollable problems just prior to registration periods.

Number of Graduates for previous 5 years

<u>Cohort - Year</u>	<u>Graduates</u>
Cohort 1 – 2007-2009	3
Cohort 2 – 2009-2011	1 (2 – 1 course)
Cohort 3 – 2011-2013	4 expected

Graduate Follow-up Data

While the program has experienced a low graduation rate a high percentage of the students have successfully found employment in the industry as a result of the program.

Graduates have obtained high quality jobs that pay good wages and have reasonable benefits. Students successfully completing the first year of the program and seeking jobs have also obtained high quality jobs that pay good wages. Wages range from \$12/hour to \$35/hour. Many of those that did not complete the program are now coming back to finish the program.

Graduate and Employer Satisfaction

Due to the limited number of graduates, no formal written study has been conducted. Most of the students and employers have remained in close contact with the program. Those students remaining in contact have all expressed satisfaction with the program.

Employers have expressed 100% satisfaction with the students. Many of the employers have also joined the advisory board to help promote the program and work with the program to produce more graduates. One employer has offered to take all the students as a training year to assist in preparing for the licensure exam. The program receives numerous requests each semester for referrals of graduates for job openings.

Analysis of Data by Cohort

The Survey Technology program is currently running its third cohort of students. The first cohort started with sixteen students. During registration of the first cohort, allowances were not made for those students not seeking the full program. As a result, several seats were taken by students not seeking the program and retention of the first cohort was limited. Three students were using the courses as electives toward other programs. Two of these three students graduated in other programs at the conclusion of the first

semester. Three of the students withdrew or failed the first set of courses and could not continue. Two additional students completed the courses with limited success and subsequently changed majors. Math was identified as a problem area with all the students who either failed or changed majors. They were not prepared for the upper level math work and did not feel they could complete the program successfully. After the second semester, three additional students were not retained. Five of the original students remained in the program for the third semester. Three of the five graduated. Two transferred to complete bachelor programs and they have returned to the area and are employed by the Mingo Board of Education and Heritage Surveying; the other is employed by Raven Crest Contracting as a surveying technician. The remaining two did not complete all of the general education courses but are employed in the industry and are trying to find time to finish the general education courses.

The second cohort of students was started during the fall 2009 semester. Due to the uncertainty of the board approval for the program, the course schedule was pulled from publication along with all publicity for the program, and no pre-registrations were permitted. Formal approval was received from the Board of Professional Surveyors on May 26, 2009. At this time, a marketing plan was developed with marketing completed during July. Enrollment was cut off in August for the start of classes with nine students enrolled. Two students dropped the program after the first semester, and another two after the second semester. All four stated current job requirements and time constraints as the problem. The remaining five students continued in the program. One has graduated and is employed with Tug Valley Surveying. The other four are employed in the industry (COTIGA, Hatfield McCoy Trails, Heritage, and Accurate) and are completing classes as time allows.

The third cohort of students was started during the fall 2011 semester. The program was slated to be held on the Boone campus. Prior to the beginning of the semester, the building was closed due to problems at the adjoined Boone Career and Technical Center. The program was relocated to the Logan campus. It is perceived that the enrollment was severely hampered by the problems with the location. Eight students enrolled in the program. One student joined the Army during the first semester. One student failed all of the courses and withdrew after the second semester. One student took employment (Tug Valley Surveying) and withdrew during the second semester. One student is enrolled in the electrical program as a dual major and is wanting to return to the surveying program. The remaining four students are expected to graduate the program

in May 2013. Two of the four have obtained employment in the industry since starting the program. One has chosen not to seek employment and focus on coursework. The fourth was employed prior to starting the program with Coke and is continuing that job until graduation.

Enrollment Projections

Although we cannot predict large increases in enrollment in the future, there is a community employment need delivered by this program which we believe could drive enrollment increase along with appropriate marketing and an enrollment period that is not hampered by outside events. At this time, we do not feel that sufficient awareness of the program and its benefits have been achieved. This is part due to the every other year offerings. The program ran a marketing effort in January which received positive feedback and interest from the community. The ability to enroll students every year should increase program awareness.

2. Program Course Enrollments

This program offers a variety of specialized courses designed specifically for the program. Courses are open to all students however the majority are taken by majors only.

3. Service Courses

This program has several first year courses that are included in new skill sets and are being planned for inclusion in the Mine Technology program. The new skill sets are not scheduled for offering until Fall 2013.

4. Off-Campus/Distance Delivery Classes

This program does not have any courses that are currently offered off-campus or by distance delivery.

5. Articulation Agreements (2+2 etc.)

There are no active articulation agreements for the program at this time.

C. Necessity

While no firm statistics are available for job outlook for the next 5 years, the U.S. Department of Labor Bureau of Labor Statistics Occupational Outlook Handbook reports “overall employment of surveyors, cartographers, photogrammetrists, and surveying technicians is expected to grow about **as fast as average** for all occupations through the year 2014. The widespread availability and use of advanced technologies, such as GPS, GIS, and remote sensing, will continue to increase both the accuracy and productivity of these workers, limiting job growth to some extent. However, job openings will continue to arise from the need to replace

workers who transfer to other occupations or who leave the labor force altogether. Many of the workers in these occupations are approaching retirement age.” According to the WV Board of Professional Surveyors, only seven individuals sat for licensing exam at the last offering.

It is expected that opportunities for surveyors, cartographers, and photogrammetrists should remain concentrated in architectural, engineering, and related services firms. Opportunities should be stronger for professional surveyors than for surveying and mapping technicians. However, a professional surveyor’s license in WV requires four or more years of experience under direct supervision of a licensed surveyor. The timeframe for job needs of professional surveyors will provide the necessary time on the job for advancement for the surveyor interns.

In addition, the new advances in GPS technology have created an emerging need for individuals trained in GIS and Geometrics which are included in the program. Increasing demand for geographic data, as opposed to traditional surveying services, will mean better opportunities for cartographers and photogrammetrists who are involved in the development and use of geographic and land information systems. New technologies, such as GPS and GIS, also may enhance employment opportunities for surveyors, and for surveying technicians who have the educational background and who have acquired technical skills that enable them to work with the new systems. At the same time, upgraded licensing requirements will continue to limit opportunities for professional advancement for those without a degree.

D. Consistency with Our Mission

This program directly supports the institution’s previous compact and mission in a variety of areas. Major areas of support for the previous compact include the following:

- This program provides scholarship opportunities to qualified students through the WV Science Engineering and Technology Scholarship. This supports compact goal I.D.2.
- The program was developed to address identified local/regional needs and provides academic as well as non-academic training in technical areas. This supports compact goals II.A.2. and IV.A.1.
- The program emphasizes citizenship and lifelong learning as instructed in OR 105 and supports compact goal III.E.

This program directly supports the institution’s new compact and mission in a variety of areas. Major areas of support for the new compact include

the following:

- Produce more graduates
 - Program advising encourages completion of degree and graduation.
- Promote Strong Employer Partnerships
 - The program is a high demand occupation needed by employers.
 - Courses provide opportunities for employers to send employees for training
- Serve More Adults
 - Includes program recruitment for older students for skills enhancement.
- Build and Maintain Facilities
 - Courses use technology

IV. Recommendation

The review was presented to the program advisory board which included a representative from the State Board of Professional Surveyors, to the Kanawha Valley Society of Professional Surveyors and to the department. The advisory board and the society urged continuation of the program due to the vital need for employers.

It is the recommendation of the department to continue the program with corrective actions. The program is a relatively low cost program (the cost of the instructor) as the advisory members continue to provide access to the necessary equipment. Marketing was completed during January and was well received.

A cohort will be started for the spring semester with a fast track option to raise awareness. This cohort will be merged with a new cohort in the fall semester and review enrollment numbers at that time.

The Society will also seek employees that do not have a degree but have background in surveying that may be interested in fast tracking the degree as well which should assist with increased number of graduates for the program.

APPENDIX I - Curriculum

Survey Technology

Associate in Applied Science 60 Credit Hours

Purpose The Survey Technology Program is designed to meet the needs of the surveying profession in southern West Virginia and the surrounding areas. It will provide a thorough knowledge of surveying and mapping techniques necessary for certification and employment as a Survey Technician. This program is approved by the West Virginia Board of Professional Surveyors. Upon completion of the program, students may apply to sit for the Fundamentals of Land Surveying licensure exam.

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

Component I-General Education Core

The general education core is limited to give students the skills necessary to be able to effectively communicate technical findings, thoughts, and philosophies, and to be able to perform basic mathematical computations.

BS 199 Dendrology	4
CS 102 Spreadsheet Concepts	3
EN 101 English Composition I	3
MT 125 Trigonometry	3
MT 130 College Algebra	3
GL 110 Geology	4

OR

PH 210 College Physics I

Component II-Technical Core

The technical core is designed to give students a solid back ground in surveying techniques and law.

SU 105 Introduction to Surveying Graphics	4
SU 120 Surveying Measurements I	4
SU 155 Surveying Graphics	4
SU 195 Land Law	3
SU 196 Land Boundaries	3
SU 220 Surveying Measurements II	4
SU 212 Retracement	3
SU 230 Engineering and Construction Surveys	4
Restricted SU Electives	6

Component III-On-The-Job Training - (minimum of 6 hours)

Students must complete a service learning project along with a co-op or internship job experience.

SU 273 Survey Project	3
SU 274 Capstone	2

APPENDIX II – Faculty Data Form

Name Stephen Birurakis Rank: Instructor

Check one:

Full-time X Part-time _____ Adjunct _____ Graduate Asst. _____

Highest Degree Earned work toward BS Date Degree Received _____

Taken at West Virginia State and West Virginia University of Technology

Area of Specialization Civil Engineering.

Licenses/Certifications: Professional Land Surveyor, Certified Trainer for Magellen GPS systems

Professional registration/licensure	<u>Yes</u>	Yrs of employment at present institution	<u>5</u>
Yrs of employment in higher education	<u>5</u>	Yrs of related experience outside higher education	<u>11</u>
Non-teaching experience	<u>11</u>		

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.

See Page 2 for course listing

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

<u>Year/Semester</u>	<u>Course Number & Title</u>	<u>Enrollment</u>
Fall 2013	SU 273 – Projects	4
Fall 2013	SU 220 – Measurements II	5
Fall 2013	SU 212 – Retracement	4
Fall 2013	SU 195 – Surveying Boundaries	4
Fall 2013	SU 105 – Introduction to Surveying Graphics	2 (EG students)
Spring 2012	SU 196 – Land Law	7
Spring 2012	SU 155 – Surveying Graphics	7
Spring 2012	SU 120 – Measurements I	8
Spring 2012	SU 105 – Introduction to Surveying Graphics	3 (EG Students)
Fall 2011	SU 105 – Introduction to Surveying Graphics	8
Fall 2011	SU 100 – Introduction to Surveying	7
Spring 2011	SU 275 – GPS	5
Spring 2011	SU 275 – GIS	5
Spring 2011	SU 274 – Capstone	2
Spring 2011	SU 230 – Engineering	5
Fall 2011	SU 273 – Projects	5
Fall 2010	SU 272 – Internship	5
Fall 2010	SU 220 – Measurements II	6
Fall 2010	SU 212 – Retracement	5
Fall 2010	SU 195 – Land Boundaries	5
Spring 2010	SU 196 – Land Law	7
Spring 2010	SU 155 – Surveying Graphics	7
Spring 2010	SU 120 – Measurements I	7
Fall 2009	SU 195 – Boundaries	1 (Graduate catchup)
Fall 2009	SU 120 – Measurements I	1 (Graduate catchup)
Fall 2009	SU 105 – Introduction to Surveying Graphics	9
Spring 2009	SU 275 – GPS	5
Spring 2009	SU 275 – GIS	5
Spring 2009	SU 230 – Construction Surveys	5
Spring 2009	SU 274 – Capstone	5
Fall 2008	SU 273 – Project	5
Fall 2008	SU 272 – Internship	5
Fall 2008	SU 220 – Measurements II	5
Fall 2008	SU 212 – Retracement	5
Fall 2008	SU 196 – Land Law	5

APPENDIX III – Enrollment Data by Cohort

Cohort	Semester	Enrollment	Graduates	Comments
1	Fall 2007 200801	16	N/A	3 withdrew or failed and did not return. 3 using as an elective toward another program (2 graduated Dec. 07). 2 completed and changed majors. 8 continued on to second semester.
1	Spring 2008 200802	8	N/A	1 failed courses and changed major. 1 completed and changed major. 1 withdrew for time/work related issues.
1	Fall 2008	5	N/A	All successfully completed.
1	Spring 2009 200902	5	2	Both graduates currently taking additional classes toward baccalaureate degree. One is at Southern (now employed with Mingo Board of Education); the other is at East Tennessee State (now employed with Heritage Consulting).
1	Fall2009	3	1	Employed with Raven Crest Contracting.
1	Spring2010 201002	2	0	Scheduled to graduate Summer 2010 – withdrew from classes. RS,DA One working full-time with Accurate Surveying the other with Potesta.
2	Fall 2009 201001	9	N/A	1 moved out of state. 1 dropped due to time/work requirements. 7 continued on
2	Spring 2010 201002	7	N/A	1 withdrew time/work related 6 continued on
2	Fall 2010 201101	6	N/A	1 withdrew – work related - Mining 5 continued on
2	Spring 2011 201102	5	1	1 quit – working McCoy Trails 1 failed math/quit, working COTIGA 2 failed math – still trying to finish both employed in field (Heritage, Accurate) 1 graduated working for Tug Valley
2	Fall 2011 201201	1	0	1 failed, returned but withdrew work related (Accurate)
2	Spring 2012	1	0	1 still trying to finish (Accurate)
3	Fall 2011 201201	8	N/A	1 withdrew midway semester – joined army 7 continued on
3	Spring 2012 201202	7	N/A	1 withdrew - quit school 1 enrolled in EG now wanting to return 1 withdrew –working Tug Valley Surveying 4 continued on – expected to graduate
3	Fall 2012	4	N/A	All 4 returned – expected to graduate

APPENDIX IV
Advisory Committee Membership

NAME	COMPANY	CONTACT
Tom Rayburn	E.L. Robinson Engineering	trayburn@elrobinson.com
Josh Rayburn	E.L. Robinson Engineering	jrayburn@elrobinson.com
Marvin Murphy	WV DOT – State Surveying	mmurphy@dot.state.wv.us
Travis Long	WV DOT – State Surveying	tlong@dot.state.wv.us
Paul Dean	Corps of Engineers	Pauld@lrh.usace.army.mil
Marvin Reynolds	Reynolds Surveying	Direworks979@netzero.net
Richard Henline	A2Z Surveying	304-744-7885
Kevin Shaffer	Design Tech	304-746-4734
Victor Dawson	Potesta Engineering	304-342-1400
Matt McLane	WV American Water	304-767-1841
Lantz Rankin	Heritage Surveying	heritage2@heritagesurveying.com
Eddie Curry	Cotiga Land Development	ecurry.cotiga@charterinternet.com
Roger Tackett	ASI	rtackett@asiwv.com
Dave Brown	Terradon	Dave.brown@terradon.com
Brad Ball	Arch Coal	bball@archcoal.com
Lee Hensley	Raven Crest Contracting	304-836-5860 Ext 14