

Civil Engineering Technology

Degree: Bachelor of Science

5 Year Program Review

Submitted Spring 2012

Civil Engineering Technology
5 Year Program Review
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Table of Contents

Approval Sheet/Signatures	1
Executive Summary.....	2
Catalog Description.....	4
VIABILITY	5
Enrollment Information	5
Applications.....	5
Program Courses.....	6
Service Courses	10
Success Rates of Service Courses.....	11
Extended Off Campus Courses.....	11
Cost Per Student/Credit Hour.....	11
Liberal Studies Requirements	12
Assessment Requirements.....	13
Adjunct Use.....	15
Graduation/Retention Rates.....	17
Previous Program Review Results.....	17
ADEQUACY	18
Program Requirements.....	18
Faculty Data	20
Accreditation/National Standards	20
NECESSITY	20
Placement and Success of Graduates.....	20
CONSISTENCY WITH MISSION.....	21
 Appendices	
Appendix A – Continuous Improvement Plan.....	A
Appendix B – Faculty Data Sheets	B
Appendix C – Graduate Data.....	C
Appendix D – Accreditation requirements	D

PROGRAM REVIEW
Fairmont State Board of Governors

Program with Special Accreditation Program without Special Accreditation

Date Submitted 2/15/2012

Program: Bachelor of Science in Engineering Technology, Civil Engineering Technology
Degree and Title




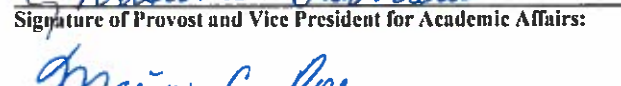

INSTITUTIONAL RECOMMENDATION

The institution is obligated to recommend continuance or discontinuance of a program and to provide a brief rationale for its recommendation:

- 1. Continuation of the program at the current level of activity;
- 2. Continuation of program with corrective action (for example, reducing the range of optional tracks or merging programs);
- 3. Identification of the program for further development (for example, providing additional institutional commitment);
- 4. Development of a cooperative program with another institution, or sharing courses, facilities, faculty, and the like;
- 5. Discontinuation of the Program

Rationale for Recommendation:

The Civil Engineering Technology program has maintained appropriate enrollments and graduates during the past five years. Classes offered as part of the program average 20 students per class during this same period. This program is accredited by the Board of Engineering and Technology (ABET). The program maintains a rigorous assessment and continuous improvement plan, and the curriculum is currently being redesigned to reduce the total credit hours required in the major. The Civil Engineering Technology program is considered a quality program with excellent faculty, and this program is highly supported by the Dean of the College of Science and Technology at Fairmont State University.

<u></u> Signature of person preparing report:	<u>2/15/12</u> Date
<u></u> Signature of Dean	<u>2/15/12</u> Date
<u></u> Signature of Provost and Vice President for Academic Affairs:	<u>6-6-12</u> Date
<u></u> Signature of President:	<u>6-6-12</u> Date
<u></u> Signature of Chair, Board of Governors:	<u>6-6-12</u> Date

Executive Summary for Program Review

(not to be more than 2-3 pages)

Name and degree level of program

Civil Engineering Technology – Bachelor of Science

External reviewer(s)

TAC of ABET 2007-2008

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

Program meets all necessary criteria to sustain viable enrollment. TAC of ABET recognized the program with full accreditation for six years. The program demonstrates a successful approach to sustainability, viability and assessment.

Plans for program improvement, including timeline

No improvements necessary as a result of this review.

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

The TAC of ABET review during 2007-2008 did identify a weakness and a deficiency; all have been corrected or resolved in the current program. The weakness was resolved through the purchase of modern surveying grade GPS equipment, and the deficiency regarding a continuous improvement plan was resolved through the creating and documentation of the CIP plan, as shown in the Appendix A.

Five-year trend data on graduates and majors enrolled

Within the past five years, the Civil Engineering Technology program has graduated approximately 101 students with a Bachelor's degree. This is an average of approximately 20 graduates per year. 98 percent of these students have successfully obtained employment in the field of Civil Engineering Technology. Data to reflect this can be found in Appendix C, and has also been collected through alumni contacts.

Over the past five years, program enrollment has been constant with approximately 130 students majoring in Civil ET every year.

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

The Civil ET program utilizes a departmental Continuous Improvement Plan to meet institutional assessment needs. The Continuous Improvement Plan involves assessment and continuous improvement on three levels. The purpose of the Continuous Improvement Plan (CIP) is to identify, track, and remediate program weaknesses. The evaluation of competencies and program components leads to modifications of content, delivery, and other factors deemed instrumental in the pursuit of program improvement.

The CIP involves three levels of application. These levels include:

- Assessment of Program Objectives
- Assessment of Program Outcomes
- Program Modifications as determined necessary by the assessment practices.

Program Objectives are evaluated using various tools such as graduate surveys, employer surveys and a graduate competency exam. Benchmarks have been established for each of these assessment tools to determine program effectiveness. If data points within the results do not meet established benchmarks, an improvement plan is developed and implemented. Any modifications to the program objectives are approved by program faculty and the program's Industrial Advisory Committee.

Program Outcomes are evaluated using various tools such as course exams, assignments, quizzes, projects, labs, etc. Assessment points have been established for each course as they relate to the program outcomes. The program has established a benchmark in which 70% of the students in the course demonstrate competency. If less than 70% of the students cannot demonstrate success, a plan of improvement is established for the assessment point. These continuous improvement plans are approved by a collaborative agreement of the program faculty. An assessment matrix has been established to clearly define what assessment points are evaluated in each program course. The Civil ET program has established an assessment cycle of three years. Each assessment point on the matrix will be assessed at least once every three years. Additional assessments shall be conducted if warranted.

All program modifications such as curriculum changes are established as a result the program objective and outcome assessments. Any significant changes must be approved by program faculty and the program's Industrial Advisory Committee.

Data on student placement (for example, number of students employed in positions related to the field of study or pursuing advanced degrees)

Data on student placement had advanced degrees has been collected through graduate and employer surveys taken periodically for the purpose of ABET accreditation as shown in Appendix C. The data is used to measure the program objectives. The objectives relate to student success at the time of graduation through 6 year post graduation.

Final recommendations approved by governing board

PROGRAM REVIEW

FAIRMONT STATE UNIVERSITY OR PIERPONT COMMUNITY AND TECHNICAL COLLEGE	
Program:	Civil Engineering Technology
School:	College of Science and Technology
Date:	2/12/12

Program Catalog Description:

The B.S.E.T. degree provides students with a greater emphasis on analysis and design with specialized classes in hydraulics and hydrology, soil mechanics and foundation design, structural analysis and design, water and wastewater systems and construction management, coupled with additional courses in science and mathematics, communication, social science and humanities. This degree is also offered with an environmental emphasis.

Graduates with the Bachelor of Science degree are qualified for an entry-level position as a Civil Engineering Technologist in construction, surveying, engineering, and architectural firms; local, state, and national government, environmental and public health agencies; state departments of transportation and highways; and private business industry. Baccalaureate graduates are eligible to sit for the Fundamentals of Engineering Exam (FE) in West Virginia, the first step to becoming a professional engineer.

VIABILITY (§ 4.1.3.1)

Enrollment

Graduate Count for Civil ET			Note: Term Code Grad 200710=Fall 2006, 200720=Spring 2007, 200730=Summer 2007, etc.																				
			200510	200520	200610	200620	200630	200710	200720	200730	200810	200820	200910	200920	201010	201020	201030	201110	201120	201130	201210	Grand Total	
BSET	CET	Math				1																1	
		Occ. Sfty.										1	1										2
		Sfty/Enviro													1								1
	Total	4	11	5	4	1	5	9	1	5	5	7	10	3	5	2	3	12	1	4		97	
	Civil Engineering Technol	4	11	5	5	1	5	9	1	5	6	8	11	3	5	2	3	12	1	4		101	
BSET Total			4	11	5	5	1	5	9	1	5	6	8	11	3	5	2	3	12	1	4		101

Application/ Admission Requirements

Students apply for admission to FSU through modern techniques by completion of an Application for Admission located on FSU's homepage at www.fairmonstate.edu. Once the student fully completes the application process, the student's application is reviewed for determination of admission.

Students seeking admission to Fairmont State University must be of the age of compulsory attendance in the state of West Virginia and file an application for admission. Applications and supporting credentials must be on file at least two weeks prior to the opening of a semester or term. All credentials submitted in support of an application for admission become the property of the University and will not be returned to the student. Any student admitted upon the basis of false credentials will be subject to immediate dismissal from the University.

Students who fail to register during the semester or term for which they have been admitted must file another application in order to gain admission at a later date. Separate applications for residence halls must be submitted to the Office of Residence Life. Any change in local address of any student at Fairmont State University must be reported to the Registrar.

The application for admission must specify the student's desired degree or program objective. Fairmont State University grants bachelor's degrees, and Pierpont Community & Technical College grants associate's degrees and administers certificate programs.

Admission to Fairmont State University does not guarantee admission to specific programs, which may be restricted due to limitations of staff, physical facilities, and space available for experiential training.

FAIRMONT STATE UNIVERSITY ADMISSION REQUIREMENTS **FIRST-TIME FRESHMEN**

1. Application for Admission
2. Official high school transcript or GED (sent by high school or Department of Education) (2.5 GPA or higher)
3. ACT or SAT Scores (17 ACT or 830 Composite SAT[combination of critical reading and math scores])
4. College Transcript (if college credit was earned during high school)
5. Immunization Records (if born after January 1, 1957)
6. Statement of Activities (if out of high school more than six months)

PLEASE NOTE: REQUIREMENTS CHANGED FOR FALL 2008

The Following Units Were Required Beginning Fall 2008:

4 English (including courses in grammar, composition, and literature)

3 Social Studies (including U.S. History)

4 Mathematics (three units must be Algebra 1 and higher)

3 Science (all courses to be college preparatory laboratory science, preferably including units from biology, chemistry and physics)

1 Arts

2 Foreign Language (Two units of the same foreign language)

Program courses	Five year course enrollment for all CIVIL ET program courses is provided below:						
	CIVL Course Number	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	Total Enrollment over 5 Years
	2200	13	18	19	19	36	105
	2210	43	52	66	70	38	231
	2220	32	32	29	29	35	157
	2230	18	17	17	16	19	87
	2240	18	20	18	16	21	93
	2275	15	13	19	20	24	91
	2280	17	16	19	17	24	93
	2290	33	47	32	15	19	146
	3305	15	14	19	9	19	76
	3340	14	12	20	13	16	75
	4400	17	13	13	12	10	65
	4410	12	10	18	16	20	76
	4420	18	19	16	14	8	75
	4440	16	14	18	16	6	70
	4460	10	8	20	11	20	69
	4470	14	12	20	12	13	71

Program Courses

The Civil offers the following program courses:

CIVIL ENGINEERING TECHNOLOGY

CIVL 2200 Introduction to Surveying.....3 hrs.

Topics in this course include theory of linear distance measurement, proper note keeping, transit/tape surveying techniques, leveling procedures, measurement of horizontal and vertical angles, stadia, bearings and azimuths, rectangular coordinates, topography and mapping techniques. Students will learn to use all types of surveying equipment, including levels, transits, theodolites, total stations, and Electronic Distance Measurements (EDM) devices. CR: MATH 1101.

CIVL 2210 Light Construction.....4 hrs.

Students will be instructed in practices utilized in the erection of residential and industrial buildings, with technical information involving problems from ground to roof.

CIVL 2220 Construction Materials and Methods.....4 hrs.

Identification, properties and standard test methods for steel, concrete, timber, masonry products, bituminous products, soils and aggregate. Heavy construction methods are also discussed. PR: CIVL2210, MATH 1101.

CIVL 2230 Construction Estimating.....3 hrs.

This course covers construction cost-estimating techniques for various types of construction projects. Included are certain related topics such as production, bidding and specifications as they affect the contractor during the cost estimation process. PR: CIVL 2220, INFO 1100.

CIVL 2240 Construction, Land and Route Surveying...3 hrs.

This course will cover horizontal and vertical control, building location and layout, pipeline layout, construction staking procedures, earth quantity measurements, triangulation, horizontal and vertical curves, plan and profile, area and cross sections, volume calculations, mass diagrams, boundary control and deed descriptions. PR: CIVL 2200, INFO 1100.

CIVL 2275 Civil Engineering Graphics.....3 hrs.

This course will provide students with an introduction to computer-assisted civil engineering drafting and design. Includes coverage of graphics techniques, drawing organization, dimensioning, orthographic projection, and specific applications of civil

engineering drafting and design. Typical applications include coordinate geometry, contours, topics in highway design, concrete, steel and structural wood drafting. PR: DRFT 2200.

CIVL 2280 Environmental Engineering
Technology I.....3 hrs.

This introductory course will provide an overview of the environmental field, including laws and regulations, water quality, hydraulic and hydrologic fundamentals, water and wastewater treatment, groundwater contamination, and solid waste management. PR: CHEM 1101. CR: TECH 2290 or MATH 1185, or MATH 1190.

CIVL 2290 Introduction to Structures.....3 hrs.

This is an introductory course focusing on the analysis and design of structures. It will provide an elementary overview of the analysis, design, and detailing of both steel and wood structures, with primary emphasis on steel. Course coverage will include design of beams, columns and connections. PR: MECH 2200.

CIVL 3305 Hydraulics and Hydrology.....3 hrs.

Topics in hydraulics will include closed conduit flow, networks, reservoirs, hydraulic machinery, pumps in series and parallel and hydraulic structures. Topics in hydrology will include statistics and probability, hydrologic cycle and data, open channel flow, flood control and discharge, and culvert and detention pond design. PR: INFO 1100, TECH 2290 or MATH 1185 or MATH 1190, CIVL 2280.

CIVL 3340 Introduction to Soil Mechanics.....4 hrs.

This course covers soil origin and composition, index properties and classification, permeability, capillary, seepage, drainage, frost heave, combined stresses, total and effective stresses, compressibility and consolidation. PR: MECH 2200.

CIVL 4400 Highway Design and Transportation.....3 hrs.

This course addresses basic transportation theory and design, including parametric statistics, traffic flow, capacity, level of service, pavement design and geometric design. PR: TECH 2290 or MATH 1185 or 1190, or CIVL 3340.

CIVL 4410 Advanced Structural Analysis.....3 hrs.

This course provides an analysis of structures including cables, beams, columns, trusses and frames. Also included are buckling, shear, moment and deflection in statically determinate structures. PR: CIVL 2290, TECH 3300 or MATH 1186 or MATH 3315.
Baccalaureate majors only.

CIVL 4420 Construction Planning and Administration.....3 hrs.

Introduction to construction management. Topics include construction planning and scheduling, economics, contracts, administration, health and safety, productivity and performance. PR: CIVL 2230.

CIVL 4440 Structural Design.....3 hrs.

A continuation of CIVL 2290, with more in-depth design of reinforced concrete and steel structures. PR: CIVL 2290.

CIVL 4460 Environmental Engineering Technology II3 hrs.

This course will cover theories and practices in water and wastewater treatment systems, including physical, chemical and biological treatment processes. Other topics include surface water quality characteristics, modeling and permitting. PR: CIVL 2280 and TECH 3300 or MATH 1186 or MATH 3315. Baccalaureate majors only.

CIVL 4470 Advanced Soil Mechanics and Foundation Design.....3 hrs.

This course is a continuation of CIVL 3340 and includes shear strength, laboratory and field test methods and their use in design. It also provides an introduction to shallow and deep foundations, including bearing capacity and settlement analysis, the study of earth pressure for use in design of retaining walls, sheet piles, and excavating bracing, and an introduction to earth structure design and slope stability analysis. PR: CIVL 3340.

Service courses

The Civil ET program offers three service courses
CIVL 2210 Light Construction
CIVL2220 Construction Methods and Materials
CIVL2290 Introduction to Structures

Five year course enrollment for these courses is provided below:

CIVL Course Number	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	Total Enrollment over 5 Years
2210	43	52	66	70	38	231
2220	32	32	29	29	35	157
2290	33	47	32	15	19	146

Success rates Serv Crs	<p>The success rate of all service courses is based on the number of students that successfully pass the course with a letter grade of D or better. Below is a table summarizing student success rates for all Civil ET services courses as specified in the previous section. Each column depicts the number of students that successfully passed and failed the service course per academic year. The last column in the table below provides the overall % success rate for each service course.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="13">Number of Students Passed or Failed/Withdrew Per Academic Year</th> </tr> <tr> <th></th> <th colspan="2">2006 – 2007</th> <th colspan="2">2007- 2008</th> <th colspan="2">2008- 2009</th> <th colspan="2">2009- 2010</th> <th colspan="2">2010- 2011</th> <th></th> </tr> <tr> <th>CIVL Course Number</th> <th>Passed</th> <th>Failed/Withdrew</th> <th>Passed</th> <th>Failed/Withdrew</th> <th>Passed</th> <th>Failed/Withdrew</th> <th>Passed</th> <th>Failed/Withdrew</th> <th>Passed</th> <th>Failed/Withdrew</th> <th>% Successfully Passed Over 5 years</th> </tr> </thead> <tbody> <tr> <td>2210</td> <td>56</td> <td>6</td> <td>41</td> <td>11</td> <td>54</td> <td>12</td> <td>64</td> <td>22</td> <td>54</td> <td>16</td> <td>80.0%</td> </tr> <tr> <td>2220</td> <td>32</td> <td>4</td> <td>29</td> <td>3</td> <td>27</td> <td>2</td> <td>25</td> <td>4</td> <td>21</td> <td>1</td> <td>93.2%</td> </tr> <tr> <td>2290</td> <td>28</td> <td>8</td> <td>41</td> <td>6</td> <td>29</td> <td>3</td> <td>15</td> <td>0</td> <td>12</td> <td>9</td> <td>86.4%</td> </tr> </tbody> </table>	Number of Students Passed or Failed/Withdrew Per Academic Year														2006 – 2007		2007- 2008		2008- 2009		2009- 2010		2010- 2011			CIVL Course Number	Passed	Failed/Withdrew	Passed	Failed/Withdrew	Passed	Failed/Withdrew	Passed	Failed/Withdrew	Passed	Failed/Withdrew	% Successfully Passed Over 5 years	2210	56	6	41	11	54	12	64	22	54	16	80.0%	2220	32	4	29	3	27	2	25	4	21	1	93.2%	2290	28	8	41	6	29	3	15	0	12	9	86.4%
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2290	28	8	41	6	29	3	15	0	12	9	86.4%																																																															

ext ed/off campus crses	No off campus courses offered
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cost/student credit hour	<p>The Civil ET program operates under the organizational budget for the College of Science and Technology. Therefore all students costs represented below for the College of Science and Technology are considered representative for all Civil ET students.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Academic Year</th> <th>Total Cost Per Student (FTE) Equivalent</th> <th>Total Cost per Student Credit Hour</th> </tr> </thead> <tbody> <tr> <td>2006-07</td> <td>Data Unavailable</td> <td>Data Unavailable</td> </tr> <tr> <td>2007-08</td> <td>\$5960.33</td> <td>\$139.13</td> </tr> <tr> <td>2008-09</td> <td>\$5334.50</td> <td>\$138.69</td> </tr> <tr> <td>2009-10</td> <td>\$5511.00</td> <td>\$142.18</td> </tr> <tr> <td>2010-11</td> <td>\$5176.94</td> <td>\$143.65</td> </tr> </tbody> </table>	Academic Year	Total Cost Per Student (FTE) Equivalent	Total Cost per Student Credit Hour	2006-07	Data Unavailable	Data Unavailable	2007-08	\$5960.33	\$139.13	2008-09	\$5334.50	\$138.69	2009-10	\$5511.00	\$142.18	2010-11	\$5176.94	\$143.65
Academic Year	Total Cost Per Student (FTE) Equivalent	Total Cost per Student Credit Hour																	
2006-07	Data Unavailable	Data Unavailable																	
2007-08	\$5960.33	\$139.13																	
2008-09	\$5334.50	\$138.69																	
2009-10	\$5511.00	\$142.18																	
2010-11	\$5176.94	\$143.65																	

Liberal Studies Requirements Met

All four year degree programs at FSU are required to complete the institutional general studies requirements. The Civil Engineering Technology Program requires students to complete these general studies requirements based on the courses listed below. All academic programs shall meet the following requirements for Liberal Studies.

THE FIRST YEAR EXPERIENCE..... 15-16 HOURS

(To be completed within the first 45 credit hours)

(Students are required to complete all Developmental Skills courses within their first 32 credit hours.)

ENGL 1104 Written English I #.....3Hrs

ENGL 1108 Written English II #..... .3 Hrs

INFO 1100 C omputer Concepts & Applications .3 Hrs (or demonstrated competency)

MATH 1102, 1107, 1112, 1115, 1185, 1190..... 3 - 4. Hours

COMM 2200, 2201, 2202.....3 Hours

SCIENTIFIC DISCOVERY..... 8 HOURS

CULTURAL/CIVILIZATION EXPLORATION..... 9 HOURS

ART ISTIC / CREATIVE EXPRESSION & INTERDISCIPLINARY / ADVANCED

STUDIES OPTION..... 6 HOURS

SOCIETY/HUMAN INTERACTIONS..... 6 HOURS

APPROVED WRITING INTENSIVE COURSE

Total Liberal Studies Credit Hours: 44-45 Hours

Assessment Requirements: The Civil Engineering Technology Program has successfully implemented a Continuous Improvement Program that ensures program outcomes and objectives are effectively evaluated and achieved. The complete Continuous Improvement Program is attached as Appendix A. These assessment practices have been thoroughly reviewed and approved (2008) by the Technology Accreditation Commission (TAC) of Accreditation Board for Engineering and Technology (ABET). In addition, these assessment practices have also been established by the Civil ET Industrial Advisory Committee.

Summary of Continuous Improvement Plan (Assessment Practices)

The ABET Accredited Programs at Fairmont State University use a Continuous Improvement Plan (CIP) designed and approved by selected program constituencies [faculty and the Industrial Advisory Committee (IAC)]. The CIP is a dynamic program used for assessing established objectives and outcomes along with procedures for implementation of necessary modifications to academic programs. The changes are presented to the programs' IACs for comments, recommendations, and approval.

The CIP Assessment Diagram (Figure 1, shown on the following page) illustrates the three assessment levels for the ABET Accredited Programs. The overall program assessment (Level 3) includes the scheduled review of the CIPs from the Program Objectives and the Program Outcomes. Since these two techniques differ slightly, reference to Program Objectives assessment specifications found in Section II of the plan and Program Outcomes assessment specifications found in Section III of the Continuous Improvement Plan are necessary.

Again, the CIP includes three levels of assessment: The Program Objectives (Level 1), the Program Outcomes (Level 2), and the overall assessment procedure (Level 3). The first two levels (Program Objectives and Program Outcomes) include the following components for assessment completion:

1. assessment,
2. determination of weakness(s),
3. action to be taken once the weakness is determined,
4. solicitation of approval/recommendation to correct from the appropriate constituencies,
5. implementation of change/modification to the Program Objectives (Level 1) or the Program Outcomes (Level 2) which can bring about overall change (Level 3) to the ABET Accredited Programs.

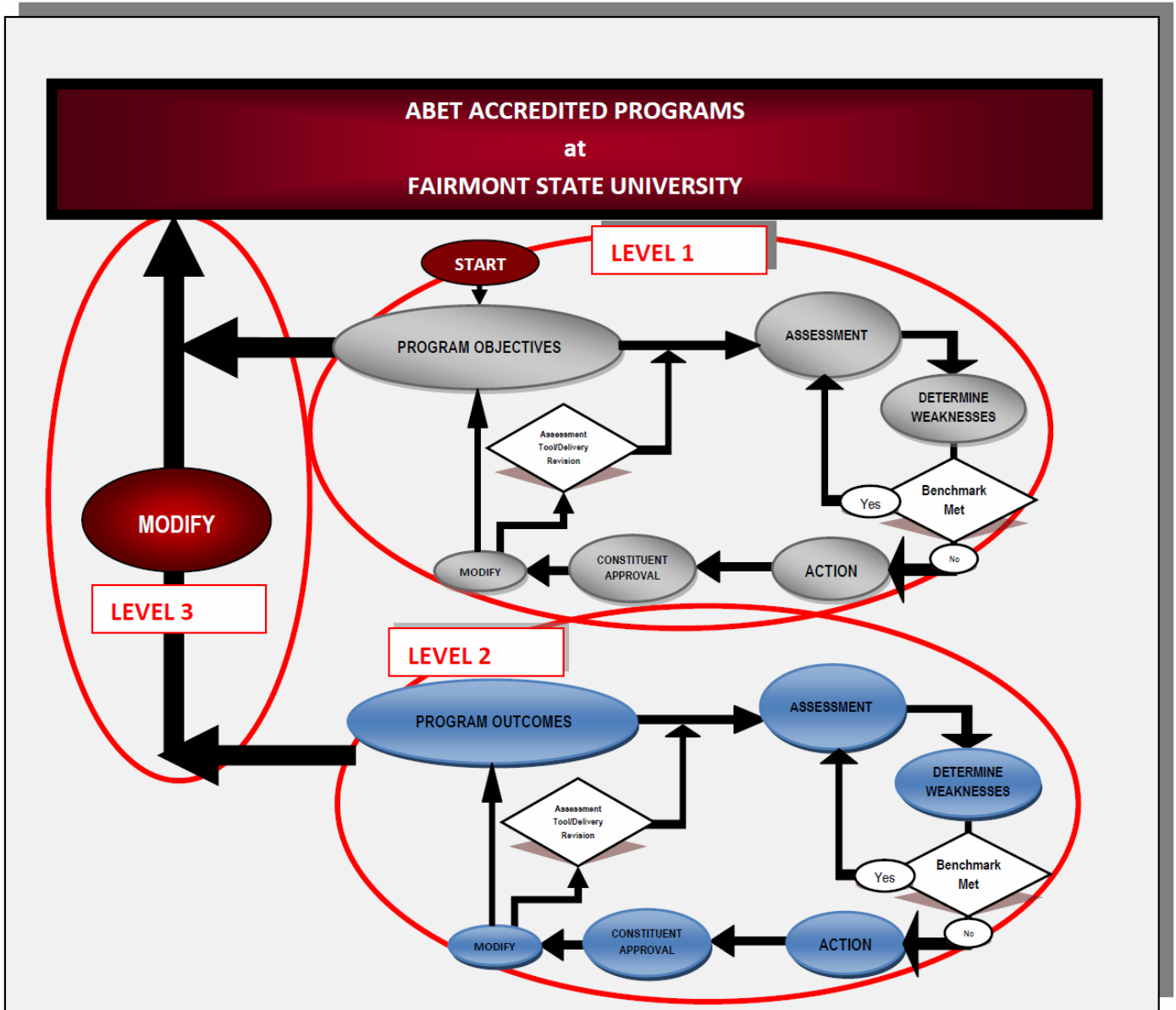
The remaining sections of the CIP allow for closing the loop regarding Program Objectives and Program Outcomes.

In Level 3, assessment is achieved by recommending and implementing academic program changes initiated by the constituencies' (Faculty and IAC members) review of the assessed Program Objectives and Program Outcomes.

The CIP is implemented at the freshman level and continues into post-graduation activities.

Appendix A contains a copy of the complete Continuous Improvement Plan for all ABET Accredited programs in the Department of Technology.

Appendix A contains a copy of the complete Continuous Improvement Plan for all ABET Accredited programs in the Department of Technology.



Adjunct use

The Civil ET Program has employed adjunct faculty members on a regular basis to assist in the offering of some CIVL Courses. Below is a list and descriptor of the adjunct usage.

James Deker

Course Number and Title	When Taught	Average Enrollment
CIVL 2230	Spring 2009	16 students per semester

Allen R. Cutlip, CSP

Course Number and Title	When Taught	Average Enrollment
SFTY 2275	Fall 2007	16 students per semester
	Fall 2008	
	Fall 2009	

James Gowarty

Course Number and Title	When Taught	Average Enrollment
CIVL 2220	Fall 2007 Spring 2007 Fall 2008 Spring 2008 Fall 2009	19 students per semester

James Holland

Course Number and Title	When Taught	Average Enrollment
CIVL 2275	Fall 2010	20 students

David Sago

Course Number and Title	When Taught	Average Enrollment
CIVL 2280	Spring 2007	16 students per semester

Joshua Vincent

Course Number and Title	When Taught	Average Enrollment
CIVL 2230	Spring 2010	19 students per semester

Graduation/Retention Rates

Over the past five years Civil Engineering Technology program has graduated a total of 76 students, averaging 20 graduates per year. This includes students that have graduated with an BS degree. Below is a table summarizing the graduation data on a yearly basis.

Academic Year	Number of Graduates obtaining BS
2006-07	11
2007-08	15
2008-09	15
2009-10	19
2010-11	16
Total Number over 5 years	76

Previous Program Review Results

The previous program review for Civil Engineering Technology was submitted using the ABET program review self-study report format. The results of this ABET review indicated that all current practices, assessment methodologies and resources were sufficient for the maintenance of a successful Civil ET program.

As a result of the ABET review in 2007-2008, the Civil Engineering Technology program received full accreditation without any program deficiencies or weaknesses.

ADEQUACY (§ 4.2.4.2)

Program Requirements:

Liberal Studies	32-42	<u>44</u> hrs	ENGL 1104 – 3 hrs ENGL 1108 – 3 hrs COMM 2202 – 3 hrs INFO 1100 – 3 hrs MATH 1102 – 3 hrs CHEM 1101 – 4 hrs (Scientific/Discovery) CHEM 1102 – 4 hrs. (Scientific/Discovery) PSYC 1101 – 3 hrs.(Society/Human) Artistic/Creative – 6 hrs. Society/Human – 3 additional hrs. Cultural Civilization - 9 hrs
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Faculty Data: **Provided in Appendix B**

Accreditation/national standards

The Civil Engineering Technology Program obtained full accreditation under the Technology Accreditation Commission (TAC) of the Accreditation Board for Engineering and Technology (ABET) after a complete program review in 2007.

A complete copy of the TAC of ABET Criteria is provided as Appendix D of this report.

NECESSITY (§ 4.1.3.3)

Placement and success of graduates

Data collected from graduate and employer surveys is shown in Appendix C. The survey was the most recent data collected Spring 2009.

Similar Programs in WV

Similar Civil Engineering Technology as at the following WV Institutions:

WVU Institute of Technology

Bluefield State University

CONSISTENCY WITH MISSION (§ 4.1.3.4)

Fairmont State University has established the following mission statements:

MISSION STATEMENT: The Mission of Fairmont State University is to provide opportunities for individuals to achieve their professional and personal goals and discover roles for responsible citizenship that promote the common good.

VISION STATEMENT: Fairmont State University aspires to be nationally recognized as a model for accessible learner-centered institutions that promote student success by providing comprehensive education and excellent teaching, flexible learning environments, and superior services. Graduates will have the knowledge, skills, and habits of mind necessary for intellectual growth, full and participatory citizenship, employability, and entrepreneurship in a changing environment.

College of Science and Technology's Mission:

Our mission is to promote effective student learning in science, math and technology and to prepare top-quality graduates for their future endeavors, including graduate study, employment or other personal goals.

Civil Engineering Technology Program Objectives:

The Program Objectives, as determined by the Civil ET Program's constituencies are intended to dynamically promote professional competencies and continued professional growth.

Below are the Program Objectives for the Civil ET program at Fairmont State University.

Students and graduates shall, to varying degrees, be competent in;

1	applying academic competencies and methodologies in addressing and solving problems as a professional.
2	using learned technical and non-technical methodologies to communicate to audiences of varying demographics.
3	ethically and respectfully performing professional responsibilities as part of a team and or multidisciplinary team.
4	recognizing and assessing the societal and global impact of professional decisions and practices.
5	pursuing lifelong learning through professional development.

University's Mission & Program Objectives

The Program Objectives are designed to address the professional competencies and development of students and graduates as well as emphasize the continued improvement and evolution of the individual after his/her exit from Fairmont State. Fairmont State's mission emphasizes the same desires and standards for students of the University.

In comparing Fairmont State's mission and core values to Civil ET Program's Objectives, the consistencies are easily discernible. The mission of the University advocates three goals. These goals are; provide opportunities for individuals to achieve **professional goals**, provide opportunities for individuals to achieve **personal goals**, and provide opportunities for individuals to discover **roles for responsible citizenship** that promote the common good. These goals are further explained through relating the adopted core values.

The first goal of professional development incorporates the core values of scholarship, achievement and responsibility. The Program Objectives 1 through 5 directly link to this goal and these values through the professional development of the students via academic competencies in the field of engineering technology, emphasis on effective communication skills, advocating team work, recognizing the importance of global and societal impact of the profession, and the importance and benefits of lifelong learning.

The Program Objectives foster professional growth through mandating that students successfully apply academic competencies and methodologies in addressing and solving problems as an engineering technology professional. This is accomplished through senior level projects, an exit exam, and tracking the post-graduate to determine level and competency of work performance.

The second goal of the Mission is the opportunity for attaining personal goals. The Program Objectives indirectly advocate personal development through intrinsic motivators such as communication skills, team work skills, global and societal emphasis and a desire for lifelong learning. Progress in any of the aforementioned areas can assist in achieving personal goals.

Lastly, the Program Objectives can link directly to the goal of providing opportunities for individuals to discover roles for responsible citizenship that promote the common good. This University mission goal marries very well with the purpose of the field of engineering technology. As professionals, students and graduates should strive to better the community and the world. This can be accomplished by:

- applying academic competencies and methodologies in addressing and solving problems as a professional,
- communicating effectively to audiences of varying demographics and agendas through the practice and application of learned technical and non-technical methodologies,
- performing all professional responsibilities (independently, as part of a team, or as part of a multi-disciplinary team) ethically, morally and respectfully,
- recognizing the societal and global impact of professional decisions and practices,
- and fostering a desire for lifelong learning through professional development.

Relationship with Other Programs

The Civil Engineering Technology program has an excellent relationship with the other technology programs due to the coordination of various ABET activities adopted by all ABET programs. This includes partnerships on student projects and co-sponsorship of guest speakers, lecture series etc. The Civil ET program has also worked with other faculty and programs to allow students to earn professional development credits (bonus points for exams) for participating in various departmental activities.

Civil ET students and faculty have also served in various capacities across the campus and in the community. This includes institutional committee membership, internship partnerships with other programs.

Facilities made readily available to students within the program include a classrooms shared with other ET programs including, lab areas and a student work area for projects and student club activities. A common computer lab is shared with other ET majors and is open to students.

Signatures and Recommendations

The required sheet with signatures and recommendation are provided on page 1.

List of Appendices

Appendix A	Continuous Improvement Program
Appendix B	Faculty Data Sheets
Appendix C	Graduate Surveys
Appendix D	ABET Criteria