

2006-1661: TAC-ABET ACCREDITATION – A NEW PROCESS, A NEW BEGINNING

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TAC-ABET Accreditation – A New Process, A New Beginning

I Introduction:

During the 2003-2004 academic year, the ABET established, and pilot tested a new method to evaluate programs. This method launched the outcomes-based accreditation criteria and promoted “assessment” as a way-of-life for the institution. The new way-of –life was to think: “Does the program meet the stated outcomes? Are the objectives being met?”

In August, 2005 the Sinclair Community College Environmental Engineering Technology (EVT) and the Safety Engineering Technology (SET) Programs were accredited by the Technical Accreditation Commission of ABET (TAC-ABET)¹. This paper describes the process that the Environmental Engineering Technology (EVT) and the Safety Engineering Technology (SET) Departments went through to achieve accreditation. The process involved four steps as detailed in Section IV. The steps include:

- Request for evaluation
- Self Study
- The evaluation
- Post Evaluation, responses to evaluators’ comments

A. Sinclair Community College:

Sinclair Community College is a public, comprehensive two-year college located in downtown Dayton, Ohio. The college has a long history of serving the community beginning in 1887 when one room was set aside for an evening school at the Dayton YMCA.

Since that first year of operation the school has steadily matured and today serves over 24,000 students each quarter, on a campus of 21 buildings as well as remote sites. Sinclair is a member of the League for Innovation in the Community College and a Vanguard Learning College.

B. Engineering and Industrial Technologies Division:

Since one of the first courses offered in 1887 was Mechanical Drafting, the Engineering & Industrial Technologies (E&IT) division can trace its roots back to the beginning of the school’s history. With over 4,000 students the E&IT division has grown so that today it is the largest in Ohio and one of the top programs in the nation. Since its beginning the division has added many programs including the Environmental Engineering Technology program in 2000 and the Safety Engineering Technology in 1972. Both of these programs were accredited in 2005 and are discussed in this paper.

II TAC-ABET Process:

The new process (TC2K) was developed in the year 2000 and instituted in 2003-2004. This new process looks primarily at the qualitative aspects of the programs rather than the quantitative aspects. Following is a statement that best describes the process:

“While the qualitative factors are more important than the quantitative assignment of credit hours to any particular area, the general principles outlined in the criteria will be checked closely by analyzing each

particular curriculum. The coverage of basic information rather than the offering of specific courses is the important criterion.”²

- A. Assessment:** The process also considers how the program is assessed. Program Educational Objectives, Program Outcomes and the Assessment Methods must therefore be established and evaluated. These items are defined below:
- **Program Educational Objectives:** Broad statements that describe career and professional accomplishments that the graduates are expected to achieve.
 - **Program Outcomes:** Narrow statements that describe what students are expected to know upon graduation.
 - **Assessment:** A method to identify, collect and prepare data to evaluate the achievement of the program objectives and outcomes. The assessment also considers how general education is applied and evaluated in the engineering courses. For example, how math is used in the engineering courses rather than how many math courses are required. The same applies to English, communication and other general education subjects. The process considers how sentence structure, grammar and oral presentation techniques are evaluated in the engineering technology courses.
- B. Findings Terminology:³** It is important to understand the terminology used during the evaluation. The findings will be listed under strength, observation, concern, weakness and deficiency. ABET defines these as shown below:
- **Strength:** A noteworthy practice or condition which exceeds normal expectations in its positive effect on programs.
 - **Observation:** An observation that does not necessarily relate directly to ABET criteria. Offered as advice to help improve the program.
 - **Concern:** Condition wherein criteria are currently satisfied, but there is identifiable potential for non-compliance. Positive action is needed to ensure continued compliance.
 - **Weakness:** A partial or weak compliance with some provision of ABET criteria. Action is needed to strengthen or bring into full compliance.
 - **Deficiency:** An apparent failure of the program to meet mandatory provisions of the ABET criteria. Action is required to make a new program eligible for accreditation or to continue accreditation of a currently accredited program.
- C. Time Lines:** Once the evaluation is completed and the preliminary findings are determined, there is a period of time that allows you to correct and justify your procedures. The evaluation team will present the preliminary findings before they depart from the institution. The timeline starts from the day they depart and includes:³
- Within fourteen days: Provide any additional information and or corrections. This is the time to lay out your plan for correcting any findings.
 - Draft Statement is prepared by the Team Chair and forwarded to the institution.
 - Within thirty days: Institution responds to the Draft Statement. The responses, if appropriate, are incorporated into the Final Report.
 - Month of July: Team Chief presents final report at the ABET Annual Meeting.

It should be noted that during this entire period the Team Chief should be constantly updated as to the status of the findings. He/She will be presenting the findings to the Accreditation Board at the ABET Annual Meeting and can change things (for the better) at the last minute. This “Due Process” is important and can make the difference in the final accreditation.

III Sinclair Methodology:

The assessments of the EVT and SET programs are shown below and detailed in Section IV.

- A. Program Educational Objectives:** The Engineering & Industrial Technologies Division established eight core competencies to depict what a graduate should be able to do after completing the respective program.
- B. Program Outcomes:** These differ for each program. The EVT program outcomes are listed in Section IV.
- C. Assessment:** The assessment methods used to evaluate the objectives and outcomes includes:
- Graduate exit interviews,
 - Job performance surveys for students in the workforce for at least three years,
 - End-of-course evaluations and
 - Annual evaluation of competencies during their college years.
- ABET recommends at least three different surveys/evaluations to get a closer look at how the student/graduate is progressing during school years and beyond. This is called “triangulation”.
- D. Continuous Improvement Program (CIP):** This is the heart of the TAC ABET accreditation. The ABET Communications Link⁴ states:
“The largest number of findings this year dealt with shortcomings in preparing and implementing continuous improvement plans.”
This CIP working program basically says:
- Say What You Do
 - Do What You Say
 - Prove It
 - Improve it
- In the Sinclair CIP we revised this statement to read Plan, Do, Study, Act or PDSA. Basically, we PLAN what we want to do, we DO it, we STUDY the results and we ACT to change if necessary.

IV Four Steps to Success:

- A. Step 1, Request for Evaluation:** The accreditation process is initiated when an institution contacts ABET for Request for Evaluation (RFE)⁵ materials. These materials include, among other things, forms and criteria for accrediting programs, including program criteria for specific disciplines. The RFE must be submitted by 31 January of the year in which the evaluation is desired. The RFE is evaluated based on the

institution qualifications and program qualifications. Institution qualifications include recognition by state or otherwise accredited organization. Program qualifications include program titles and a sound foundation in science and mathematics. If the RFE is approved, then ABET will request “a review of program study”. This document is referred to as the Self-Study Questionnaire.

- B. Step 2, Self Study:** The purpose of the self-study is to document compliance with applicable program criteria and to help the institution determine whether to pursue accreditation. The Self Study⁶ must be submitted at least four months before the scheduled visit to give the audit team the opportunity to review the program. The Self Study is divided into two parts. Part I details the program, and Part II documents the institution.

Part I is divided into two sections. Section A is an introduction and review. Here, the program identifies titles, explains options and program modes. Actions to correct previous shortcomings are explained. Since this was the first review for both the Safety Engineering Technology and Environmental Engineering Technology programs, shortcomings were addressed by the comment, “Not Applicable: First Time Review” as allowed by the TAC-ABET criteria.

Section B of Part I is the focus of the Self Study. According to the ABET Accreditation Policy and Procedure Manual,^{2,9} educational programs leading to degrees rather than institutions, departments, or degrees are accredited. In order for a program to be accredited, all routes to completion of the program must satisfy the appropriate criteria.² Not all disciplines have specified criteria. While there are criteria for the Environmental Engineering Technology discipline, the Safety Engineering Technology discipline was evaluated using the general criteria.

Also included in Section B, the program objectives and outcomes are explained, as well as the procedure of continuous improvement and program resources. The Self Study Questionnaire includes model tables for specific data including:

- Curriculum broken down by credits and category
- Faculty Analysis
- Faculty Workload
- Support Expenditures for the Program (Program Budget History)

Supplemental figures, including tables and matrices were developed to facilitate presentation of the program’s mission, procedures and goals. For example:

Program Educational Objectives: According to the Self Study guide, an educational objective is a statement that describes the expected accomplishments of graduates during their first few years after graduation. The Engineering & Industrial Technologies Division established eight core competencies to depict what a graduate should be able to do after completion of the respective program. These competencies are:

- Appropriate Mastery of Discipline
- Information/Data Gathering and Analysis

- Communication and Teamwork
- Quality
- Safety
- Lifelong Learning and Professionalism
- Application and Design
- Citizenship

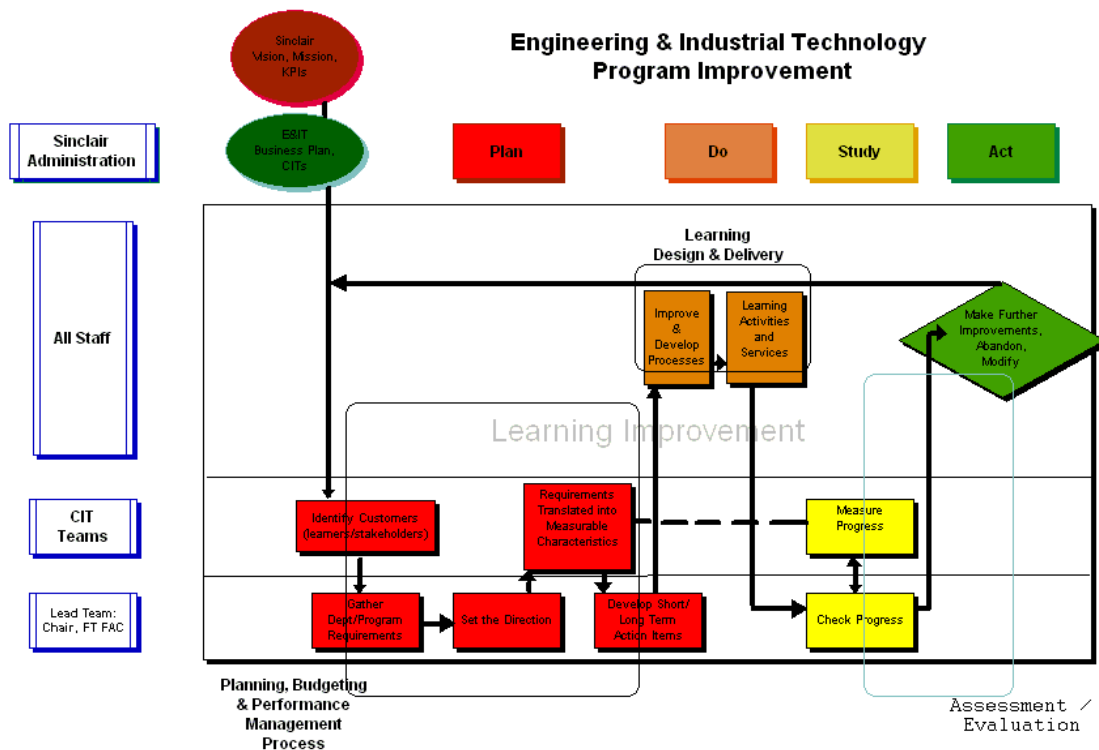
The detailed objectives are shown in Form A, Program Educational Objectives. This form was included in the self and is included here as Attachment 1.

Program Outcomes: These are statements that describe what students are expected to know and be able to do by the time of graduation. These differ for each program. A sampling of the EVT program outcomes are:

- Develop skills and knowledge to identify, analyze and process hazardous substances and wastes.
- Apply knowledge of environmental laws and regulations in performing compliance assessments and pollution prevention surveys.
- Demonstrate ability to conduct environmental site assessments, detect the presence of hazardous substances and determine the environmental liability associated with property transfer.
- Apply the principals of water and wastewater properties by designing water and wastewater treatment systems and analyzing contamination distribution in streams, rivers and groundwater.
- Demonstrate and use testing equipment to sample and analyze air, water, soil and groundwater.
- Demonstrate environmental techniques and principals by performing remedial investigation, feasibility studies and by designing remediation systems.

At Sinclair, program outcomes are reviewed biannually. During this review, inputs from the Advisory Committee consisting of employers, practicing professionals, and alumni are incorporated to identify the skill set required for graduating students. Each skill set is specifically related to the curriculum, to ABET criteria (a-k),⁷ and to specific program assessment methods. This data was presented as a matrix Form B as shown in Attachment 2.

Assessment & Evaluation: Sinclair utilizes the Plan-Do-Study-Act (PDSA) model to establish and review the program objectives and outcomes, to evaluate assessment data, and to decide changes necessary for program improvement. The PDSA model may be illustrated as shown:



This somewhat busy model can be applied and summarized to the specific program through a matrix labeled Form D. This form was included in the Self Study, and is shown here as Attachment 3.

The assessment methods used to evaluate the objectives and outcomes included:

- Graduate exit interviews,
- Job performance surveys for students in the workforce for at least three years,
- End-of-course evaluations and
- Annual evaluation of competencies during their college years.

ABET recommends at least three different surveys/evaluations to get a closer look at how the student/graduate is progressing during school years and beyond. This is called “triangulation”. Triangulation is used to measure and evaluate the success of program objectives. Data is collected based on graduate interviews, employers’ surveys and E&IT Assessment Initiatives. This data was presented as both tables and matrices.

Part II of the Self Study provides information on the institution and the engineering technology unit. Because Part II is common to all program Self-Study Reports for an institution, it may be submitted as an individual document or duplicated and included in Part I of each program.

Part II is divided into two sections. Section A identifies the institution, including information about the administration, regional or institutional accreditation, mission

statements and institutional support units, like libraries and computer facilities, important to achieving the objectives of the engineering technology programs.

Section B details the Engineering Technology Department. Here, the relationship between the department and institutional resources, as well as the relationship between the Department's TAC-ABET accredited and non-accredited programs is presented.

The Self Study Questionnaire includes model tables for specific data including:

- Organizational Flow Charts
- Programs Offered & Degrees Awarded
- Support Expenditures for the Engineering Technology Unit
- Enrollment and Degree data

C. Step 3, Evaluation:

The next step after the Self Study has been completed and reviewed is the evaluation. It is up to the institution to schedule and make all the arrangements for the evaluation team.

Schedule: The team will spend approximately three days at the institution, normally arriving in the evening of the first day and departing in the afternoon of the third day. Time on site is limited so it is important that appointments be scheduled in advance and time be allotted for team private meetings. Upon their arrival (Sunday afternoon) we presented a briefing on the overall assessment process. The next morning the team met with the President and staff. The team presented a short briefing followed by an informal discussion as to why they are here and the accreditation process. On the last day of the evaluation the team met again with the President and staff and presented their findings. The timeline for answering the findings was also presented.

Accommodations: Arrange for lodging close to the institution and preferably within walking distance. If not within walking distance, arrange for morning pick-up and evening return to the hotel.

Transportation: The team will most likely arrive at different times. For those arriving by air they should be met at the airport and transported to their hotel or to the initial briefing. This "first impression" time during travel from the airport allows for information to be passed to the team members as to the schedule of events.

Meals: The institution should arrange for lunch meals. The team requested a lunch meeting with four to five students and Advisory Committee members. A catered lunch was set up with the students and Advisory Committee members. This was very beneficial to the evaluation team in that they were able to talk privately with the students and Advisory Committee representatives. On the other days arrangements were made to have lunch in the team meeting room. This was a private lunch with just the team members present.

Meeting Room: The institution should provide a room that can be used exclusively for team meetings. The room should include, for each team member, a telephone, a laptop computer, access to the internet and a packet of useful information such as telephone numbers and a map of the campus. The room should be close to food facilities and easily accessible.

Meetings: The evaluation team will want to meet with the President of the Institution, members of the Advisory Committee, current students and also visit selected courses during class time. The evaluation team may ask for these meetings before their visit.

Course Information Packets: For each technical course in the degree program we prepared a cardboard display box as shown below. Each box included the course syllabus, book(s), project work, homework/tests papers with samples of the good, the bad and the ugly, evaluations of oral and written presentations and other miscellaneous material. These packets, along with the Self Study, were placed in the team room for their use during the evaluation.

Display Boxes



Closing Statement: Prior to the final meeting with the President, the team met with the respective Department Chairs to discuss their findings and ask for any additional information that they may have overlooked. A Draft Statement of the findings is presented at this meeting. This is the time when the Institution can dispute or defend any of the findings. The institution will have other opportunities to dispute the findings as discussed below however this is the first cut at the findings and probably the best time to dispute the findings, if justified.

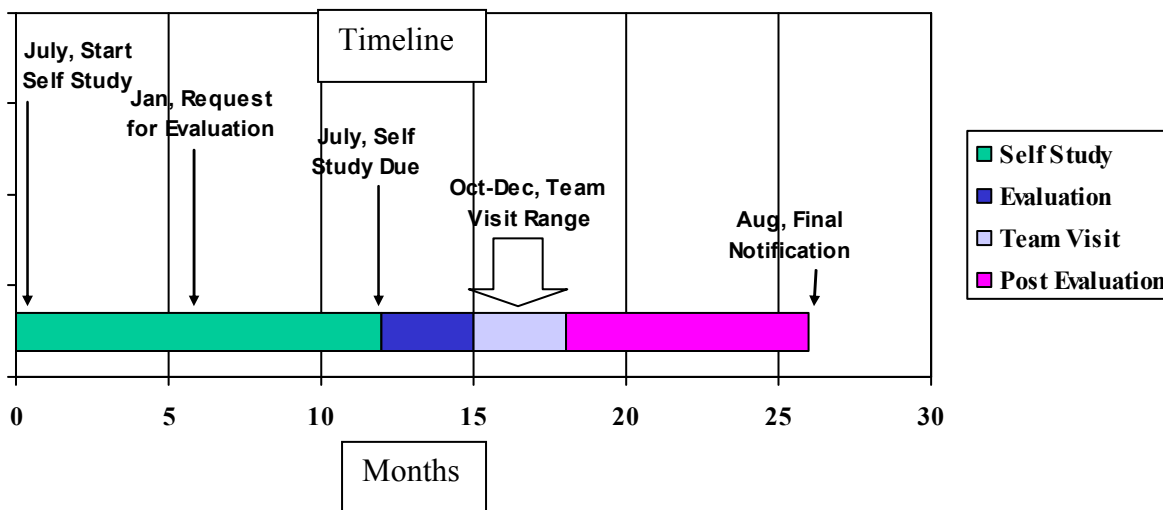
D. Step 4, Post Evaluation:

The team has now completed the on-site evaluation and everyone can now relax. Not exactly. The Due Process, Full TAC Review and Final Statement segments are still required. During this period written responses and discussions with the team chief are

required if you are disputing any of the findings. The time period for each segment is outlined in Section II. The responses should include the deficiency, how you are going to fix it or better yet, you did fix it, and a timeline of your actions to fix the deficiency. For example: A finding in one of the programs was the lack of a lab course. Our response was that we have developed a lab course, have ordered or have on hand the equipment that will be used in the lab and have scheduled this lab in the spring term. During the spring term we sent in another report verifying that the course was underway and included in the degree program as a required course. This report was sent before the Final Statement was presented to the ABET Board. The Team Chief, who was our advocate to the ABET Board, indicated that the finding was fixed. The program was thus fully accredited.

V Conclusion:

- A. Start Early:** First and foremost select a team of players that will prepare the reports, meet with the evaluation team and follow-up with post evaluation reports. Each team member should attend special training seminars and presentations on the TAC ABET process. These presentations/seminars are provided throughout the U.S. and at various times. Valuable information can be gathered at these training sessions. The ASEE is a good place to start. There is usually a seminar presented at the annual ASEE conference. Check with TAC ABET for times and places. The entire accreditation process may take as long as two years as outlined in ABET Deadlines and Due Dates.⁸ Shown below is a typical timeline for the entire process:



The first written document will be the Self Study Report which is due about four months before the evaluation. Prior to preparing the Self Study Report all of the team members should be trained at one of the many TAC ABET seminars. The Self Study Report contains detailed information about the institution, the program, student evaluations, graduate surveys and surveys on graduates and their supervisors three years after graduation. Our Self Study Report was initiated about one year before it was due. Some of the surveys have been on going for some time so we could include a lot of

history in our report. Make sure your institution's survey and reporting team is on board early in the process.

- B. Organization:** Any organization with a set purpose should have the support of the entire institution. Make sure everyone up and down the chain is notified of the accreditation process and how important it is to the program and the institution. Support from the president, vice president, dean, chair is a must. Also include deans and chairs of other programs such as the English, communication, math and liberal arts. Clerical support is mandatory and should be fully supported during the preparation of the Self Study Report, and during the evaluation and post evaluation periods.
- C. Value of Accreditation:** The TAC ABET accreditation process provided an energetic and responsive review of the Environmental Engineering Technology and the Safety Engineering Technology programs. This method is now being used to continually improve these programs. It took two years of dedicated work by many people; however it was and will continue to be a worthwhile endeavor. It will benefit our students as they go on to higher levels of education, our institution and our community.

Bibliography

- (1) Accredited by the Technical Accreditation Commission of ABET, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012, telephone: (410) 347-7700.
- (2) ABET Accreditation and Procedure Manual 2006-2007, paragraph II.D.2.
- (3) Welcome to TAC's Commission Summit, TC2K Implementation, page 44, 51. Web site: <http://www.abet.org/Linked%20Documents-UPDATE/Presentations/04-TAC%20Commission%20Summit.pdf>
- (4) ABET Communications Link, 2005 Issue 2, page 4, TAC Wrap-Up report.
- (5) ABET Request for Evaluation; Part 1 Program Information; Part 2 Contact Information; Part 3 Instructions. <http://www.abet.org>
- (6) TAC-ABET Self Study Questionnaire, ABET, Inc; 111 Market Place, Suite 1050, Baltimore, MD 21202-4012. <http://www.abet.org>
- (7) Criteria for Accrediting Engineering Technology Programs, Criterion 2 Program Outcomes, 2005-2006; TAC-ABET; www.abet.org
- (8) ABET Deadlines and Due Dates; <http://www.abet.org/deadline.shtml>
- (9) Accreditation Department, "Accreditation Policy and Procedure Manual". Baltimore, MD: Accreditation Board of Engineering and Technology, 2005. <http://www.abet.org>

Attachment 1

Form A – Program Educational Objectives

PROGRAM: Environmental Engineering Technology

Associate degree graduates of Sinclair's Environmental Engineering Technology program should be able to:

1. Appropriate Mastery of Discipline:

- **demonstrate an appropriate mastery (for the associate degree) of the knowledge, techniques, skills and modern tools of their disciplines,**
 - **identify, analyze and solve technical problems by applying relevant mathematical, scientific and technical concepts,**
- 1.1 Develop skills and knowledge to identify, analyze and process hazardous substances and wastes.
 - 1.2 Demonstrate ability to conduct environmental site assessments, detect the presence of hazardous substances and determine the environmental liability associated with property transfer.
 - 1.3 Apply the principals of water and wastewater properties by designing water and wastewater treatment systems and analyzing contamination distribution in streams, rivers and groundwater.
 - 1.4 Demonstrate and use testing equipment to sample and analyze air, water, soil and groundwater.
 - 1.5 Demonstrate environmental techniques and principals by performing remedial investigation, feasibility studies and by designing remediation systems.

2. Information/Data Gathering and Analysis:

- **locate, collect, analyze and interpret data and information, within the context of solving technical problems,**
 - **use computer applications appropriate to their disciplines,**
- 2.1 Demonstrate and use testing equipment to sample and analyze air, water, soil and groundwater.
 - 2.2 Demonstrate ability to conduct environmental site assessments, detect the presence of hazardous substances and determine the environmental liability associated with property transfer.

3. Communication and Teamwork:

- **communicate effectively; including oral, written, interpersonal, electronic and graphical communication,**
- **function effectively in teams - demonstrating a cooperative effort to evaluate and solve problems, and to develop and implement plans,**

- 3.1 Communicate orally in one-on-one and group sessions.
- 3.2 Write technical reports and business letters.
- 3.3 Prepare and give presentations.
- 3.4 Function effectively in teams.

4. Quality:

- **apply quality tools to the continuous improvement of processes in order to meet customer needs,**

- 4.1 Apply Quality tools to the profession.
- 4.2 Apply Quality tools to the profession.

5. Safety:

- **apply general safety precautions and demonstrate knowledge of safety and workplace hazards,**

- 5.1 Demonstrate knowledge of safety and workplace hazards.

6. Lifelong Learning and Professionalism:

- **recognize the need to continuously pursue learning opportunities in order to remain technically competent,**
- **understand professional and ethical responsibilities as defined by applicable professional organizations.**

- 6.1 Understand professional and ethical responsibilities.

7. Application and Design:

- **apply an understanding of the design of systems, components and processes applicable to program objectives,**

- 7.1 Apply the principals of water and wastewater properties by designing water and wastewater treatment systems and analyzing contamination distribution in streams, rivers and groundwater.
- 7.2 Demonstrate environmental techniques and principals by performing remedial investigation, feasibility studies and by designing remediation systems.

8. Citizenship:

- **understand the need to be a contributing, responsible member of society on a local, national and global level.**

- 8.1 Understand the need to be a contributing and responsible member of society.

Attachment 2

Form B – Program Outcome Matrix

PROGRAM: Environmental Engineering Technology

PROGRAM OUTCOMES	CURRICULAR STRATEGIES Where do students get an opportunity to learn, practice and/or demonstrate this attribute?	ABET Outcomes – TAC Criteria #1										PROGRAM ASSESSMENT METHODS How are data collected to evaluate student performance?				
		a	b	c	d	e	f	g	h	i	j		k			
1. Develop skills and knowledge to identify, analyze and process hazardous substances and wastes.	SRM 151 OSHA 1910.120 Hazardous Waste Operations EVT 260 Treatment, Storage & Disposal of Hazardous Wastes	X	X	X		X		X		X						<ul style="list-style-type: none"> o EVT 278 Capstone o Team Exercise: Hazardous Waste Operations o Exams

<p>2. Apply knowledge of environmental laws and regulations in performing compliance assessments and pollution prevention surveys.</p>	<p>EVT 110 Environmental Compliance EVT 200 Environmental Waste Management</p>	<p>X</p>	<p>X</p>	<p>X</p>	<p>X</p>	<p>X</p>	<p>X</p>	<p>X</p>	<p>X</p>	<p>X</p>	<p>X</p>	<p>X</p>	<p>X</p>	<p>o EVT 278 Capstone o Team Exercises: o Conduct Compliance Assessment o Conduct Pollution Prevention Study o Oral presentations, evaluated by Department Team and outside experts o Written Reports</p>
<p>3. Demonstrate ability to conduct environmental site assessments, detect the presence of hazardous substances and determine the environmental liability associated with property transfer.</p>	<p>EVT 210 Environmental Site Assessment EVT 240 Groundwater: Basic Fluid Mechanics EVT 260 Treatment, Storage & Disposal of Hazardous Wastes</p>	<p>X</p>	<p>X</p>	<p>X</p>	<p>X</p>	<p>X</p>	<p>X</p>	<p>X</p>	<p>X</p>	<p>X</p>	<p>X</p>	<p>X</p>	<p>X</p>	<p>o EVT 278 Capstone o Team Exercises: o Conduct Site Assessment o Oral presentations, evaluated by Department Team and outside experts o Written Reports o Exams</p>
<p>4. Apply the principals of water and wastewater properties by designing water and wastewater treatment systems and analyzing contamination distribution in streams, rivers and groundwater.</p>	<p>EVT 107 Water Management Technology EVT 120 Environmental Sampling and Analysis EVT 240 Groundwater: Basic Fluid Mechanics</p>	<p>X</p>	<p>X</p>	<p>X</p>	<p>X</p>	<p>X</p>	<p>X</p>	<p>X</p>	<p>X</p>	<p>X</p>	<p>X</p>	<p>X</p>	<p>X</p>	<p>o EVT 278 Capstone o Conduct Lake Study o Design landfill and recycling center o Oral presentations to village council and city environmental advisory committees o Written reports</p>

5. Demonstrate and use testing equipment to sample and analyze air, water, soil and groundwater.	EVT 106 Air Pollution Control EVT 120 Environmental Sampling and Analysis SRM 219 Industrial Hygiene Instrumentation	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	<ul style="list-style-type: none"> ○ EVT 278 Capstone ○ Sampling and analysis lab reports ○ Demonstrations on use of lab instruments ○ Exam
6. Demonstrate environmental techniques and principals by performing remedial investigation, feasibility studies and by designing remediation systems.	EVT 260 Treatment, Storage & Disposal of Hazardous Wastes EVT 265 Environmental Remediation EVT 278 Environmental Capstone	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	<ul style="list-style-type: none"> ○ EVT 278 Capstone ○ Design of landfill and recycling center ○ Oral presentations, evaluated by environmental committee and SCC staff

Attachment 3

Form D – Assessment Plan Matrix

PROGRAM: Environmental Engineering Technology

PLAN		DO	STUDY	ACT
<p>What are we trying to accomplish?</p> <p>Instruction for EVT 240 Groundwater/Fluid Mechanics course requires a visual display.</p>	<p>What measures were used to identify the problem?</p> <p>CIT #2 FY 2001-2002. Upgrade the Environmental Lab (room 20142) by installing a fluid mechanics and groundwater instructional system.</p>	<p>Are we providing effective learning experiences</p> <p>The display model is used in EVT 240 and provides a unique learning opportunity for the students.</p>	<p>How will we know if we are successful, or if a change is an improvement?</p> <p>Student class evaluations.</p>	<p>What specific changes might we take that we think will result in an improvement?</p> <p>A groundwater instructional display system was designed and purchased. This CIT is completed.</p>
	<p>Who were the constituencies consulted?</p> <p>EVT Advisory Committee, Ohio EPA.</p>			<p>Closing the Loop</p> <p>2003 Completed. Reevaluate in 2006.</p>

<p>The relatively new Environmental Engineering Technology program was not well known to the local industry and to the high schools.</p>	<p>CIT #3 FY 2001-2002. Market the Environmental Engineering Technology Associate Degree program to high schools, industry and government organizations.</p>	<p>High Schools, Tech Prep Consortium, industry, environmental firms and EVT Advisory Committee.</p>	<p>Two additional high schools adopted the Environmental Tech Prep program. A majority of the graduating students from the Tech Prep schools were choosing Sinclair. The TV commercials, billboards and high school visits were instrumental in this increase enrollment.</p>	<p>Student enrollment, FTEs.</p>	<p>An EVT commercial was produce for television. A large poster was designed for billboard display. The Tech Prep Consortium proposed a Tech Prep program at two additional high schools.</p>	<p>2002-2003 Continuing</p>
<p>Environmental Chemistry (CHE 134) was no longer offered by the Chemistry Dept due to lack of registrants.</p>	<p>Students not able to meet graduation requirements</p>	<p>Chair of Chemistry Department. Students.</p>			<p>A microbiology, microchemistry or geology course was accepted for CHE 134. The EVT program was revamped to include two general chemistry and one organic chemistry courses.</p>	<p>2004-2005 Completed The CHE 134 course was deleted from the program.</p>

<p>The Hazardous Material Abatement Track of the program was not receiving any applicants.</p>	<p>Low enrollment in the Asbestos Management, Lead Management and Confined Space courses. The courses were not offered every term.</p>	<p>EVT Advisory Committee, local environmental firms.</p>	<p>The three courses in this track were advertised and offered during the 2004-2005 academic year. Experts in the respective fields were hired for these courses. Course evaluations were in the excellent range.</p>	<p>Number of students taking this track will indicate acceptance. During the 2004-2005 academic year each course averaged 14 students.</p>	<p>Insert more field trips and hands on lab experiments in these courses.</p>	<p>2004-2005 Continuing</p>
<p>Include all of the Division Core Competencies in the curriculum.</p>	<p>Faculty and EVT Advisory Committee review of the Program Outcomes and Course Objectives.</p>	<p>Division Curriculum Committee, EVT Advisory Committee.</p>	<p>Student surveys indicate that the core competencies are having a positive impact on the student learning.</p>	<p>Track the core competency effectiveness through student exit interviews and graduate surveys.</p>	<p>Continue to stress the core competencies at every class level.</p>	<p>2004-2005 Continuing</p>
<p>Continue to offer EVT 215 Asbestos Mgt and SRM 151 at the Montgomery County Pre Release Center (MCPRC). Contract expired due to lack of county funds.</p>	<p>Notification from MCPRC that the funds expired.</p>	<p>Corporate Services, MCPRC officials.</p>	<p>Letters from released inmate indicate that with these courses they were able to get good jobs.</p>	<p>Continue contact with the MCPRC through Corporate Services.</p>	<p>Initiated a marketing plan to reinstate the program at a lower cost. The MCPRC has requested that we offer the EVT 215 Asbestos MGT course to the</p>	<p>2003-2005 Continuing</p>

<p>Shorten course sessions and offer more times per week. Courses offered once a week for 3-4 hours were not providing an effective learning environment.</p>	<p>Students were asked on the final exam of EVT 110 “what they liked the least about the course”. Over 75% indicated the long hours. Course schedules were changed to 1-2 hours per session twice a week.</p>	<p>Students</p>	<p>Student end of course surveys indicated acceptance of the new twice a week schedules. Verbal complaints from a working students indicated that their work schedule did not allow twice a week courses.</p>	<p>Continue to monitor through student surveys.</p>	<p>Standard times for most courses are now twice a week for one hour 45 minutes.</p>	<p>2004 Continuing. Follow up with end of course evaluations.</p>	
<p>inmates during the summer 2005.</p>							