



Occupational Safety, Health, and Environment (OSH&E) Program  
Department of Computer Science and Industrial Technology  
Southeastern Louisiana University  
SLU 10847  
Hammond, LA 70402

November 22, 2010

Dear OSH&E Advisory Committee Member,

On behalf of Southeastern Occupational Safety, Health, and Environment (OSH&E) Program, we would like to give our sincere appreciation for your involvement in the OSH&E Advisory Committee as well as your participation in the meetings and discussion.

Enclosed please find the report of the OSH&E Advisory Committee meeting that was held on November 5, 2010. Please feel free to let us know should you have your questions and comments!

It is great honor and pleasure to invite you to our next semi-annual meeting, which is tentatively scheduled from 9:30 AM to 12:00 PM on **April 8, 2011** at the **Hammond** campus. A formal invitation will be sent to you when the meeting date and venue are confirmed.

Thank you very much for your consistent contribution to the program!

Sincerely,

Mr. Lawrence Mauerman  
Coordinator, OSH&E

Dr. Lu Yuan  
Assistant Professor

Ms. Dorinda Folse  
OSH&E IAC Chairperson

## **OSH&E Advisory Committee**

### **November 5, 2010 Meeting Report by Drs. Ephraim Massawe and Lu Yuan**

The last Occupational Safety, Health, and Environment (OSH&E) Advisory Committee meeting was held from 9:30 AM to 1:00 PM on November 5, 2010 at Southeastern University Center in Hammond. (Please see the attached example photos!) This meeting was part of the CSIT Department Advisory Committee Annual Meeting. The attendees include eleven of the twenty OSH&E Advisory Committee members (Appendix A with updated information). Mr. Lawrence Mauerman, Drs. Lu Yuan and Ephraim Massawe, the three full-time faculty members of the OSH&E program, were co-hosts of the meeting. One OSH&E student, Roland McFarlane, was present. Absent were Steve Pereira, Richard Matherne, Don Jones, Wayne LaCombe, James Kerr, Dorinda Folse, Legier Kuhner, Don Steadman, and Michael Gautreaux.

Appendix B lists the agenda of the overall meeting. Dr. Roy Bonnette said that Mr. George Fairbanks, the CSIT Department Advisory Committee Chairperson, could not make the meeting due to other commitment. He also noted that according to the Advisory Committee Bylaws, Mr. Fairbanks' term of the chairmanship was coming to an end and therefore during lunch break, members would be asked to think of nominating another person to serve as the chairman for the next two years. Dr. Mike Beauvais then spoke to the audience that one of the advisory members was diagnosed with leukemia recently. Dr. Beauvais asked the committee members to keep him in their prayers.

Next, Dr. Bonnette invited Dr. Dan McCarthy, Dean of College of Science and Technology, to speak to the members. Dr. McCarthy thanked the Advisory Committee members for taking time to come to the meeting. He talked about how the Advisory Committee has been critical in helping develop our programs, particularly the OSH&E program which just underwent the ABET accreditation recently. The ABET site visit team had a very positive impression of the program, especially the strong and dedicated advisory committee that the program has. He said that without the work of the committee members and that of the three OSH&E faculty members, perhaps the outcome would have been different. He therefore also thanked the three faculty members who have been working so hard over the last couple of years to have in place a program that was auditable.

Then, Dr. Cris Koutsougeras, the CSIT Department Head, was invited to talk to the members. He welcomed all members to this annual meeting and stated that other schools and colleges on campus were encouraged to follow our success in establishing advisory committees that can provide advice and support to the program development. Thereafter, Dr. Koutsougeras presented an overview of the Department highlighting pertinent developments over the last year:

- A limit of 120 credit hours has been mandated by the State for all public institutions
- Statewide articulations are promoted which require availability of curriculum paths to graduation in which 60 credits can be transferred from technical/community colleges
- The OSH&E program has just undergone initial accreditation review; also received equipment donation from Chevron

- Our CS student team won first place in BearingPoint's regional programming competition; also a research grant proposal by Dr. Aron Culotta to Louisiana Board of Regents ranked 2nd in the State
- New manufacturing equipment were installed in Anzalone

In the end, Dr. Koutsougeras encouraged the Advisory Committee members to provide advice and suggestions in:

- New trends in methods and tools that should be added to curriculum
- How to assess the quality of our instruction
- What the members project to be major long-run transformations in workforce which will affect the way we prepare students

*At that time the committee broke out into groups by degrees and concentrations.*

The agenda for the OSH&E Advisory Committee meeting is attached in Appendix C. Mr. Lawrence Mauerman greeted committee members and introductions were followed.

After the introduction, items on the agenda were discussed in order. Under old business, Mr. Mauerman first addressed how the OSH&E program has grown over the last ten years to meet the needs and expectations of the local industry. He emphasized the strategic location of the OSH&E program that there are no other universities east of Texas Houston, west of Alabama, and south of Arkansas that offer such specialized program. He credited the growth of the OSH&E program to the committed participation and advice given to the OSH&E faculty members by the advisory committee members. In particular, he thanked all committee members who have contributed so much towards the preparation of the materials for the ABET accreditation.

Mr. Mauerman then read the exit statement (Appendix D) that the ABET site visit team drafted based on its evaluation of the OSH&E program which took place October 17 – 19, 2010. Overall, the entire site visit went very well. The ABET team found some salient program strengths including student advising, faculty expertise, internship, and most importantly, strong advisory committee. The team found no deficiencies at the program level. However, it identified two weaknesses, three concerns, and one observation for the OSH&E program. Mr. Mauerman explained the definition of each of these ABET terms:

- **Deficiency:** A deficiency indicates that a criterion, policy, or procedure is not satisfied. Therefore, the program is not in compliance with the criterion, policy, or procedure.
- **Weakness:** A weakness indicates that a program lacks the strength of compliance with a criterion, policy, or procedure to ensure that the quality of the program will not be compromised. Therefore, remedial action is required to strengthen compliance with the criterion, policy, or procedure prior to the next review.
- **Concern:** A concern indicates that a program currently satisfies a criterion, policy, or procedure; however, the potential exists for the situation to change such that the criterion, policy, or procedure may not be satisfied.

- Observation: An observation is a comment or suggestion that does not relate directly to the current accreditation action but is offered to assist the institution in its continuing efforts to improve its programs.

The two weaknesses that the ABET team found are both related to the environmental aspect of the program: limited course content and program outcomes on environmental (air and water) pollution fundamentals, control technologies, sampling and measurement methodologies.

The three concerns are:

1. Completion of the “three-year assessment plan” for continuous improvement by the end of academic year 2011-2012.
2. Some of the OSH&E faculty members need to hold professional certifications.
3. There is limited equipment and some belongs to one faculty member as opposed to the University.

The observation is that the ABET team suggested the OSH&E program continue addressing the need and requirements for strengthening the communication skills.

After listening to the exit statement, some of the committee members asked questions and made comments and suggestions as well:

- Most members would like to see the equipment list and suggest creating a wish list for more equipment.
- Glenn: could give rupture discs within a week.
- Lance: would like to know which certifications are required by ABET.
- Owens: would like to see the plan and timeline.
- Rick: review the OSH&E curriculum to examine the general education requirement, and also consider course addition and deletion.
- Lawrence reminded the members that the State 120-hour mandate has limited the number of OSHE major courses.

As Mr. Mauerman mentioned that Dr. Yuan would present the next step plan later under new business, the meeting moved forward to the next issue. Mr. Mauerman told the committee members that Chevron has donated some industrial hygiene equipment including noise dosimeters, sound level meters, gas and vapor detection units, and other measuring and monitoring instruments over the past summer (Appendix E). He appreciated Chevron’s generosity and believed that students would benefit tremendously from using those instruments for class and research projects.

Next, Dr. Massawe reported to the committee members that Southeastern AIHA Student Section has been formally established and our name has appeared over the AIHA website <http://www.aiha.org/insideaiha/Studentsection/Pages/AffiliatedStudentLocalSections.aspx>. Dr. Massawe appreciated the support and approval of the AIHA Deep South Section (DSS) during this procedure. He also asked the committee members for their active involvement, e.g., coming

to speak at the monthly meetings, in making the AIHA Student Section active and successful. Some of the members commented on the importance of this achievement:

- Rick: OSHA has requirements on hazard analysis.
- Owens: questioned the legal reliability for construction project on campus.
- Lawrence: mentioned combining the ASSE and AIHA Student Sections.

The meeting was then entering the discussion on new business. Dr. Yuan presented the plan of next step for the ABET accreditation (Appendix F). Three different aspects are reviewed in response to weaknesses:

- For existing courses, add environmental components and/or revise assessment activities to include environmental aspects.
- Add new OSHE courses including OSHE 452 *Pollution Fundamentals and Control Methodologies* (3 credit hours) and OSHE 491 *Special Topics* (1-4 credit hours).
- Contact the Interdisciplinary Environmental Studies Program at Southeastern to explore the collaboration and exchange of environmental practice.

Meanwhile, Dr. Massawe circulated a course specification sheet for OSHE 452 and asked members for feedback. Members discussed several possibilities and we also received some more suggestions later on. As a result, we were able to finalize the document and have sent it to pertinent personnel of the University for approval.

Other comments from the audience include:

- Rick: Include coverage on environmental hazards for OSHE 111 and also wondered how many other similar programs that have been accredited
- Glenn: Address EPA regulations in OSHE 424
- Owens: questioned about environmental law (which was covered in OSHE 251)
- Mike (Page): wondered whether ABET has set up standards in terms of the course content

The plans to address concerns are:

- Continuous improvement: continue adding new assessment results according to the plan and complete the “three-year plan” by the end of 2011-2012
- Faculty: Certification - both Drs. Massawe and Yuan plan to take CSP soon and the long-term plans are Dr. Massawe for CIH and Dr. Yuan for CPE
- Facilities: revise equipment inventory by adding information about some safety equipment and instruments and apply Louisiana Board of Regents Traditional and Undergraduate Enhancement Program

We received the following comments and suggestions from the committee members:

- Glenn: would provide financial and other types of support for faculty members to attend ASP/CSP workshop

- Lance: there is CSHT workshop through ABC
- Owens: ASP/CSP workshop from other chapter of ASSE

In regard to observation, we plan to continue improving the requirements for communication skills through reviewing OSHE course projects, consulting English 322 *Technical Writing* and Communication 211 *Public Speaking*, and planning other activities in and out of classes to strengthen communication.

Next, Dr. Yuan presented the OSHE curriculum update for the 120-hour mandate change (Appendix G). These include:

1. Reduce Southeastern 101 to 2 hours.
2. Eliminate IT 242 from the curriculum.
3. Move ECON 201 from third year first semester to third year second semester.
4. Change the credit hours of Professional Elective in fourth year first semester from 3 to 2-4, and add a footnote “Students not required to take Southeastern 101 are required to take 4 credit hours of professional electives.”

In the end, Dr. Yuan shared his experience of teaching the first-ever Internet class for OSHE, *OSHE 112 Design of Hazard Controls* in this semester. The class materials including syllabus, guidelines for exams and final project, lecture slides, and assignment were all posted online; but, students need to come to the classroom to take the three exams. Overall, it seemed the students performed better in the first exam. Dr. Yuan surmised that working on weekly assignment might be one of the reasons. We will further examine the functionality and creditability of the Internet class teaching of this class before considering other OSHE ones. Furthermore, Dr. Yuan thanked Ms. Beth Inbau for allowing us to use the National Safety Council South Louisiana Chapter new facilities to potentially expand our class teaching in the New Orleans area. At this time, we plan to explore the possibility for summer 2011, with the consideration of offering a class for both credit and non-credit purposes.

The meeting adjourned at 12 PM and the committee members headed to the Luncheon room.





## **Appendix A**

### **OSH&E Advisory Committee**

#### **Members**

**Steven P. Pereira, CSP** Telephone: 225-665-6000  
President spereira@professionalsafety.com  
Professional Safety Associates, Inc.  
1027 North Range Avenue  
Denham Springs, LA 70726

**Richard N. Matherne, CIH** Telephone: 225-963-7424  
Industrial Hygiene Consultant richard.matherne@gmail.com  
36102 Alligator Bayou Road  
Prairieville, LA 70769

**Don Jones PE, CSP, SGE, MBA** Telephone: 225-803-1906  
Comprehensive Safety Solutions djones@compsafetysolutions.com  
President and Principal Consultant  
P.O. Box 84817  
Baton Rouge, LA 70884

**Wayne LaCombe, MSPH, CSP** Telephone: 504-281-1956  
ExxonMobil, MOH, Industrial Hygiene wayne.m.lacombe@exxonmobil.com  
500 W. St. Bernard, Bldg 8 Room 105  
Chalmette, LA 70044

**William J. (James) Kerr, CSP** Telephone: 225-333-8430  
Health, Safety, and Environmental Supervisor j-kerr@lbctt.com  
LBC Baton Rouge, LLC  
1725 HWY 75  
Sunshine, LA 70780

**Dorinda Folsie, OSHA Area Director** Telephone: 225-298-5458  
Occupational Safety & Health Administration Folsie.Dorinda@dol.gov  
9100 Bluebonnet Centre Blvd, Suite 201  
Baton Rouge, LA 70809

**Beth Inbau, President & CEO, South Louisiana Chapter (New Orleans)** Telephone: 504-888-7618  
National Safety Council beth@metrosafety.org  
4200 S. I-10 Service Rd. Suite 224  
Metairie, LA 70001

**Rick Saizan, Safety Council LCA** Telephone: 225-282-3291  
8180 Siegen Lane rsaizan@safetylca.org  
Baton Rouge, LA 70810

**Legier Kuhner, President (2009-2011), ASSE New Orleans Chapter** Telephone: 504-433-5070  
West Jefferson Industrial Medicine, LLC lkuhner@wjimed.com

107 Wall Blvd. Suite A  
Gretna, LA 70056

**Lance Roux, CSP, Executive Board Member (2009-2011), President (2008-2009), ASSE Greater Baton**

**Roux Chapter** Telephone: 225-247-7011  
SafetyPro Resources, LLC lroux@safetyproresources.com  
8550 United Plaza Blvd, Suite 702  
Baton Rouge, LA 70809

**Alan J. Rovira, MS, MPH** Telephone: 504-465-6893  
Industrial Hygienist Alan.Rovira@shell.com  
Shell Health  
15536 River Road  
Norco, LA 70079

**Don Steadman, CWCP, CPSI** Telephone: 225-413-5626  
BREC Senior Risk Manager dsteadman@brec.org  
6201 Florida Blvd.  
Baton Rouge, LA 70806

**Buddy Mincey Jr., Safety Director** Telephone: 225-673-5302  
Volks Construction buddy@volksconst.com  
10983 Hwy. 1033  
Denham Springs, LA 70726

**Vladimir Alexander Appeaning, PhD** Telephone: 225-219-3951  
Deputy Secretary alex.appeaning@la.gov  
Department of Environmental Quality  
Office of the Secretary  
P. O. Box 4301  
Baton Rouge, LA 70821-4301

**Michael Gautreaux, CSP** Telephone: 985-448-4740  
Instructor, Safety Technology michael.gautreaux@nicholls.edu  
Department of Applied Sciences  
P.O. Box 2148  
Nicholls State University  
Thibodaux, LA 70310

**Michael A. Page, CSP** Telephone: 225-231-0874  
Director of Safety & Loss Prevention mpage@lwcc.com  
LWCC  
2237 S. Acadian Thruway  
Baton Rouge, LA 70808

**Owens O'Quinn, MSc, COSS, CSHO, IS** Telephone: 337-824-9000  
President/CEO ooquinn@evergreensol.com  
Evergreen OHSSE Solutions, Inc.  
103 Houssiere Road  
Jennings, LA 70546

**Chassidy D. Irwin, COSS (on behalf of Connie P. Fabré, Executive Director)** Telephone: 225-769-0596  
Director of Safety, Health, Security and Workforce Development ChassidyIrwin@gbria.org  
Greater Baton Rouge Industry Alliance, Inc. (GBRIA)  
5800 One Perkins Place Dr., Ste. 5-A  
Baton Rouge, LA 70808

**Glenn Young, CSP** Telephone: 225-772-1588  
President g.young.g@gmail.com  
Glenn Young & Associates, LLC  
5261 Highland Road, No. 193  
Baton Rouge, LA 70808

**Paul Higdon, COSS, CSST** Telephone: 225-754-0293  
Corporate Safety Coordinator  
Cajun Industries, LLC  
P.O. Box 104  
Baton Rouge, LA 70821

### **Student Members**

**Gregory Culberson** Telephone: 225-223-1188  
550 LSU Ave. Greg.Culberson@selu.edu  
Baton Rouge, LA 70808

**Roland Macfarlane** Telephone: 202-425-2461  
321 Lismore Lane roland.mcfarlane@selu.edu  
Covington, LA 70433

### **Faculty Members**

**Mr. Lawrence Mauerman, MAS, PE, CSP**  
Coordinator, OSH&E Degree Programs  
Department of Computer Science and Industrial Technology  
Southeastern Louisiana University  
SLU 10847  
Hammond, LA 70402

Telephone: 985-549-3476  
lmauerman@selu.edu

**Dr. Lu Yuan, ScD**  
Assistant Professor  
Occupational Safety, Health, and Environment (OSH&E)  
Department of Computer Science and Industrial Technology  
Southeastern Louisiana University  
SLU 10847  
Hammond, LA 70402

Telephone: 985-549-3925  
Lu.Yuan@selu.edu

**Dr. Ephraim Massawe, ScD**  
Assistant Professor  
Occupational Safety, Health, and Environment (OSH&E)  
Department of Computer Science and Industrial Technology

Telephone: 985-549-2243  
Ephraim.Massawe@selu.edu

Southeastern Louisiana University  
SLU 10847  
Hammond, LA 70402

**Dr. Cris Koutsougeras, PhD**

Professor, Department Head  
Department of Computer Science and Industrial Technology  
Southeastern Louisiana University  
SLU 10847  
Hammond, LA 70402

Telephone: 985-549-2189  
ck@selu.edu

**Dr. Pete Territo, Jr. PhD (on medical leave for 2010-2011)**

Internship Coordinator and Associate Professor  
Department of Computer Science and Industrial Technology  
Southeastern Louisiana University  
SLU 10847  
Hammond, LA 70402

Telephone: 985-549-2071  
pterrito@selu.edu

**Appendix B**  
**DEPARTMENT OF COMPUTER SCIENCE AND  
INDUSTRIAL TECHNOLOGY  
ADVISORY COMMITTEE MEETING**

Friday, November 5, 2010

Agenda

9:30-10:00 a.m.	<b>Registration with Coffee, Juice &amp; Pastries</b>	Room 139
	CSIT Faculty Welcomes Committee Members	
10:00 a.m.	<b>General Assembly: Call to Order</b>	Room 139
	Mr. George Fairbanks, Advisory Committee Chairperson	
10:00-10:05 a.m.	<b>Welcome &amp; Comments from the Dean</b>	
	Dr. Dan McCarthy, Dean, College of Science & Technology	
10:05-10:15 a.m.	<b>Advisory Committee Address</b>	
	Mr. George Fairbanks, Advisory Committee Chairperson	
10:15-10:25 a.m.	<b>Departmental Progress Report</b>	
	Dr. Cris Koutsougeras, Department Head	
10:30-12:00	<b>Break-out by Degree</b>	
	Computer Science    Dr. Cris Koutsougeras	Room 203 B
	Engineering Technology    Dr. Junkun Ma	Room 127
	OSH&E    Mr. Lawrence Mauerman	Room 122
	Industrial Technology    Dr. Roy Bonnette	Room 139
	<b>Industrial Technology Subcommittee Meetings</b>	
	Automated Systems    Dr. Mike Asoodeh	Room 104
	Drafting & Design    Dr. Louise Bostic	Room 111B
	CTEC    Mr. Ed. Rode	Room 127
	Supervision    Dr. Mike Beauvais	Room 139
12:00-1:00 p.m.	<b>Luncheon</b>	<b>Room 125</b>
1:00-2:00 p.m.	<b>Tour of the Department's Labs</b>	

**Appendix C**  
**OSH&E Advisory Committee**

**Semi-Annual Meeting Agenda**  
November 5, 2010

<u>Time</u>	<u>Issues</u>	<u>Actions</u>
10:35 - 10:45 am	Welcome & Introduction (By Mr. Lawrence Mauerman)	
10:45 - 11:15 am	Old Business	
	1. Review of ABET Site Visit (By Mr. Lawrence Mauerman)	
	2. Chevron Donation (By Mr. Lawrence Mauerman)	
	3. AIHA Student Section (By Dr. Ephraim Massawe)	
11:15 - 12:00 pm	New Business	
	1. ABET Plan of Next Step (By Dr. Lu Yuan)	
	2. OSHE Curriculum Update (By Dr. Lu Yuan)	
	3. OSHE Course Offering (By Dr. Lu Yuan)	
	4. Others	
12:00 pm	Luncheon	

**SOUTHEASTERN LOUISIANA UNIVERSITY**

Hammond, LA

Evaluation under 2010-2011 Criteria for Accrediting Applied Science Programs AC2001  
Criteria

Visit Dates: October 17 – 19, 2010

**EXIT STATEMENT**

Southeastern Louisiana University is a state-funded public university whose main campus is located in Hammond, Louisiana. Begun in 1925, the institution received university status in 1970 and today offers academic programs in five colleges as well as several other academic units. The university currently enrolls more than 15,000 students.

The program leading to a bachelor of science degree in Occupational Safety, Health and Environment was the focus of this ABET site visit. This program is housed within the Department of Computer Science and Industrial Technology which is located within the College of Science and Technology. A fulltime faculty member serves as Coordinator for the Occupational Safety, Health and Environment program and reports to the Department Head. The Department Head is responsible to the Dean of the College who, in turn, reports directly to the University Provost.

**Institutional Deficiencies, Weaknesses and Concerns**

The team found no deficiencies, weaknesses or concerns at the institutional level.

**Program Strengths**

1. The program, through its design and effective student-to-faculty ratio, enables close working relationships between the students and faculty members. Student advising seems strong and employs an electronic system that makes it easy to conduct degree audits and other actions important for assuring correct academic progress of students.
2. The impressive mix of fulltime and adjunct faculty provides students with exposure to, and experience with, faculty with outstanding academic qualification and practical, real-world experience.
3. The availabilities of internships and/or research projects in the region provide the students opportunities to apply acquired knowledge and skills in real-world, non-academic settings.
4. Utilization of a broad spectrum of professionals from different sectors in the region, including manufacturing, healthcare, environmental, enforcement and

government, has resulted in an Industrial Advisory Committee that systematically provides the program with meaningful guidance. They are very active and involved in the development and improvement of the program, curriculum, course content and prerequisites.

### Program Deficiencies

The team found no deficiencies at the program level.

### Program Weaknesses

**Weakness #1: Criterion 5: Curriculum:** requires that “curriculum requirements specify subject areas appropriate to applied science programs but do not prescribe specific courses. The program's faculty must assure that the curriculum devotes adequate attention and time to each component, consistent with the objectives of the program and institution.

The curriculum must include:

- (a) a combination of college-level mathematics and basic sciences (some with experimental experience) appropriate to the discipline
- (b) applied science topics appropriate to the program
- (c) a general education component that complements the technical content of the curriculum and is consistent with the program and institution objectives.

Students in baccalaureate degree programs must also be prepared for applied science practice through a curriculum culminating in comprehensive projects or experiences based on the cumulative knowledge and skills acquired in earlier course work.”

ASAC program-specific criteria for baccalaureate programs for Environmental, Health and Safety and similarly named applied science programs “should be interpreted with respect to the following curricular areas:

- (l) Air pollution fundamentals and control technologies
- (m) Water pollution fundamentals and control technologies
- (o) Environmental sampling and measurement methodologies.

Southeastern Louisiana University’s OSHE program outcome 2B4 is specifically mapped to ABET (l) and (m) content areas, and outcomes 2B1 and 2B3 are mapped to ABET content area (o). The courses identified in the 2010 self-study that address these outcomes contain limited content on environmental (air and water) pollution fundamentals, control technologies, sampling and measurement methodologies. Additional material will be needed to fully cover ABET specific curricular content areas.

**Weakness #2: Criterion 9. Program Criteria** requires that “Each program must satisfy applicable Program Criteria. Program Criteria provide the specificity needed for interpretation of the General Criteria as applicable to a given discipline.

ASAC program-specific criteria for baccalaureate programs for Environmental, Health and Safety and similarly named applied science programs “should be interpreted with respect to the following curricular areas:

- (l) Air pollution fundamentals and control technologies
- (m) Water pollution fundamentals and control technologies
- (o) Environmental sampling and measurement methodologies.

OSHE program outcome 2B4 is specifically mapped to ABET (l) and (m) content areas, and outcomes 2B1 and 2B3 are mapped to ABET content area (o). The courses identified in the 2010 self-study that address these outcomes contain limited content on environmental (air and water) pollution fundamentals, control technologies, sampling and measurement methodologies. Additional material will be needed to fully cover ABET specific curricular content areas.

### Program Concerns

**Concern #1: Criterion 4: Continuous Improvement** requires that the program “uses a documented process incorporating relevant data to regularly assess its program educational objectives and program outcomes, and to evaluate the extent to which they are being met. The results of the evaluations are used to effect continuous improvement of the program through a documented plan.”

The overall continuous improvement process, presented in the self-study report and elaborated upon during meetings with program faculty, is very well defined and completely addresses the elements of the “three-year plan” used as the basis for the process. At the time of the site visit, full assessment of outcomes had been completed for approximately two-thirds of the program outcomes, with the remainder to be completed by the end of academic year 2011-2012. Full compliance with this criterion requires completion of the assessment plan in progress at the time of the site visit.

**Concern #2: Criterion 6: Faculty** requires that “the majority of core Environmental, Health, and Safety and other supporting faculty must hold an earned doctorate. (“Core faculty” pertains to those who are teaching Environmental, Health, and Safety courses and does not include faculty members teaching courses such as epidemiology, statistics, etc.). The majority of core faculty should hold certifications issued by nationally accredited credentialing bodies such as Certified Industrial Hygienist or Certified Safety Professional. Faculty must also demonstrate external professional activity, including, but not limited to, participation on national, regional, state, and/or local committees and advisory boards, professional practice, and/or editorial reviews of professional publications. A full-time faculty member must be identified as administratively in charge of the program.”

While one full time faculty member is certified, others are not, nor does it appear from the self study that there are plans for such professional certifications to be attained. Only two of the faculty hold terminal degrees. There is concern that, without commitment to a

professional development plan for program faculty that addresses achievement of terminal degrees and/or relevant certifications, the necessary credentialing of faculty could be lost.

**Concern #3: Criterion 7: Facilities:** states that “Classrooms, laboratories, and associated equipment must be adequate to accomplish the program objectives and provide an atmosphere conducive to learning. ...Programs must provide opportunities for students to learn the use of modern applicable instruments and equipment.”

While there exist lab equipment related to industrial hygiene, and a very few ergonomics tools, there seemed to be no safety-related equipment. Furthermore, the short list that was verbally provided during the visit seemed to be equipment owned by one faculty member, as opposed to being available to the school.

### Program Observations

**Observation #1: Criterion 3: Program Outcomes:** requires that programs “must demonstrate that graduates have...an ability to communicate effectively.”

Review of course materials indicated that students are required to communicate findings, both orally and in writing, in many major courses. However, review of program materials and discussion with various constituencies, most notably the several alumni of the program who were interviewed, suggested that students should receive a more substantial preparation in communication skills, particularly technical writing skills. Increasingly, the safety/health/environment professional is required to communicate effectively with various constituencies and, to some extent, the preparation of the OSE professional in communication skills is as important as the technical skills that make up the program.

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## Appendix E

*Chevron donates monitoring equipment to Southeastern*Contact: [Rene Abadie](#)

8/25/10

*Click on thumbnail for high resolution photo*

*Shown with some of the safety monitoring equipment donated by Chevron Gulf of Mexico Strategic Business Unit to Southeastern Louisiana University are, from left, students Roland Mcfarlane and Gregory Culberson; Cris Koutsougeras, head of the Department of Computer Science and Industrial Technology; Lawrence Mauerman, Occupational Safety, Health, and Environment program coordinator; and faculty members Ephraim Massawe and Lu Yuan.*

**HAMMOND** – Chevron's Gulf of Mexico Strategic Business Unit has donated a wide variety of safety and health monitoring equipment to Southeastern Louisiana University's Occupational Safety, Health, and Environment program.

The equipment, which includes noise dosimeters, sound level meters, gas and vapor detection units, and other measuring and monitoring instruments, will be used to provide hands-on training for students in the university's OSH&E program.

Valued at more than \$32,000, the used equipment is in excellent working condition and is comparable to the standard type of monitoring equipment used in the field, said Dean Aguilar, a member of the Chevron Business Unit who presented the donation to Southeastern.

"Chevron was replacing its equipment and we wanted to place the used instruments with a local university," said Aguilar, a graduate of Southeastern's program. "We are very well aware of the value of health, environment and safety professionals and what they mean to our energy corridor."

Cris Koutsougeras, head of the Department of Computer Science and Industrial Technology, thanked Chevron for the donation, noting it will be well used by the nearly 70 students enrolled in Southeastern's four-year degree program.

He added that the Southeastern program will be undergoing a site review in the fall by the Accreditation Board for Engineering Technology (ABET), the recognized accrediting agency for college and university programs in applied science, computing, engineering, and technology.

"Equipment like this demonstrates to the reviewers that Southeastern students are getting access to the same type of equipment that is used in the field by professionals," he said.

[More News...](#)

## Appendix F

## ABET Accreditation Plan of Next Step

Dr. Lu Yuan  
OSH&E Advisory Committee Meeting  
November 5, 2010

## In Response to Weaknesses

- Existing courses, e.g., [OSHE 111, 112, and 341](#), etc.
  - Adding environmental components
  - Revising assessment activities to include environmental aspects
- New professional electives
  - OSHE 452 *Pollution Fundamentals and Control Methodologies* (3 credit hours)
  - OSHE 491 *Special Topics* (1-4 credit hours)
- Contact the [Interdisciplinary Environmental Studies Program](#) at Southeastern

## In Response to Concerns

- Continuous improvement
  - Continue adding new assessment results according to the plan
  - Complete the “three-year plan” by the end of 2011-2012
- Faculty: Certification
  - Both Drs. Massawe and Yuan plan to take CSP soon
  - Long-term plan: Dr. Massawe for CIH and Dr. Yuan for CPE
- Facilities
  - Revise equipment inventory by adding information about some safety equipment and instruments
  - Louisiana Board of Regents Traditional and Undergraduate Enhancement Program

## In Response to Observations

- Continue improving communication skills
  - OSHE course projects
  - English 322 *Technical Writing*
  - Communication 211 *Public Speaking*
  - Other activities in and out of classes

Appendix G

**CURRICULUM IN OCCUPATIONAL SAFETY, HEALTH AND ENVIRONMENT  
LEADING TO THE DEGREE OF BACHELOR OF SCIENCE**

(AS IN THE 2010-2011 CATALOG)

**FIRST YEAR**

FIRST SEMESTER		SECOND SEMESTER	
English 101.....	3	English 102 .....	3
Mathematics 161 <sup>1</sup> .....	3	Mathematics 162 .....	3
†OSHE 111 .....	3	Computer Science 173 .....	3
†OSHE 112 .....	3	†OSHE 121 .....	3
General Biology 151 .....	3	†OSHE 141 .....	3
Biology Lab 152.....	1		
Southeastern 101 .....	0-3		
	<hr/>		<hr/>
	16-19		15

**SECOND YEAR**

Chemistry 101 .....	3	Physics 191 .....	3
Chemistry Lab 103.....	1	Physics Lab 193 .....	1
Mathematics 241 .....	3	Communication 211 .....	3
Psychology 101 .....	3	†OSHE 231 .....	3
†OSHE 251 .....	3	†OSHE 242 .....	3
		†OSHE 261 .....	3
	<hr/>		<hr/>
	13		16

**THIRD YEAR**

Chemistry 102 .....	3	Chemistry 261 .....	3
Chemistry Lab 104.....	1	History 101 or 102 or 201 or 202.....	3
Economics 201 .....	3	†Industrial Technology 242 .....	3
English 230 or 231 or 232 .....	3	English 322 .....	3
Zoology 241 .....	4	†OSHE 341 .....	3
†OSHE 381 .....	3		
	<hr/>		<hr/>
	17		15

**FOURTH YEAR**

†OSHE 424 .....	3	†OSHE 382 .....	3
†OSHE 471 .....	3	†OSHE 421 .....	3
Management 351 .....	3	†Industrial Technology 391 or 492.....	3
Arts <sup>2</sup> .....	3	†Professional Elective <sup>3</sup> .....	3
Professional Elective <sup>3</sup> .....	3	†Professional Elective <sup>3</sup> .....	3
	<hr/>		<hr/>
	15		15

Total semester hours required ..... 122-125

Southeastern 101 is not required of transfer or readmitted Southeastern students with 30 hours or more.

<sup>1</sup> Students with an ACT Math score of 20 or lower will take Math 155 (5 credit hours) in place of Math 161, which will increase 2 credit hours the total number of hours required for the degree.

<sup>2</sup> Select one course in Art, Dance, Music or Theater.

<sup>3</sup> Professional electives should be selected in consultation with advisors.

†A "C" (2.0 minimum adjusted) must be earned in all majors and professional electives.

**CURRICULUM IN OCCUPATIONAL SAFETY, HEALTH AND ENVIRONMENT  
LEADING TO THE DEGREE OF BACHELOR OF SCIENCE**

(AS PROPOSED FOR THE 2011-2012 CATALOG)

**FIRST YEAR**

FIRST SEMESTER		SECOND SEMESTER	
English 101.....	3	English 102 .....	3
Mathematics 161 <sup>1</sup> .....	3	Mathematics 162 .....	3
†OSHE 111 .....	3	Computer Science 173 .....	3
†OSHE 112 .....	3	†OSHE 121 .....	3
General Biology 151 .....	3	†OSHE 141 .....	3
Biology Lab 152.....	1		
<b>Southeastern 101 .....</b>	<b>2</b>		
	<hr/>		<hr/>
	18		15

**SECOND YEAR**

Chemistry 101 .....	3	Physics 191 .....	3
Chemistry Lab 103.....	1	Physics Lab 193 .....	1
Mathematics 241 .....	3	Communication 211 .....	3
Psychology 101 .....	3	†OSHE 231 .....	3
†OSHE 251 .....	3	†OSHE 242 .....	3
		†OSHE 261 .....	3
	<hr/>		<hr/>
	13		16

**THIRD YEAR**

Chemistry 102 .....	3	Chemistry 261 .....	3
Chemistry Lab 104.....	1	History 101 or 102 or 201 or 202.....	3
English 230 or 231 or 232 .....	3	<b>Economics 201 .....</b>	<b>3</b>
Zoology 241 .....	4	English 322 .....	3
†OSHE 381 .....	3	†OSHE 341 .....	3
	<hr/>		<hr/>
	14		15

**FOURTH YEAR**

†OSHE 424 .....	3	†OSHE 382 .....	3
†OSHE 471 .....	3	†OSHE 421 .....	3
Management 351 .....	3	†Industrial Technology 391 or 492.....	3
Arts <sup>2</sup> .....	3	†Professional Elective <sup>3</sup> .....	3
<b>Professional Elective<sup>3,4</sup> .....</b>	<b>2</b>	†Professional Elective <sup>3</sup> .....	3
	<hr/>		<hr/>
	14		15

Total semester hours required ..... **120**

Southeastern 101 is not required of transfer or readmitted Southeastern students with 30 hours or more.

<sup>1</sup> Students with an ACT Math score of 20 or lower will take Math 155 (5 credit hours) in place of Math 161.

<sup>2</sup> Select one course in Art, Dance, Music or Theater.

<sup>3</sup> Professional electives should be selected in consultation with advisors.

<sup>4</sup> **Students not required to take Southeastern 101 are required to take 4 credit hours of professional electives.**

†A "C" (2.0 minimum adjusted) must be earned in all majors and professional electives.