



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

September 12, 2008

Dear OSH&E Industrial 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 Industrial Advisory Committee as well as your participation in the meetings and discussion.

Enclosed please find the report for the OSH&E Industrial Advisory Committee meeting that was held on July 25, 2008. Please feel free to let us know your questions and comments! Particularly, we would appreciate if you could kindly return your feedback on Appendix D (the revised Mission and Goals) and Appendix E (the revised Major Field Assessment Plan) by October 1, 2008, so that those documents can be finalized.

It is our great honor and pleasure to invite you for our next quarterly meeting, which will be held as part of the Annual Department Industrial Advisory Committee Meeting. The meeting is tentatively scheduled on October 17, 2008 at the Hammond campus. A formal letter will be sent to you when the meeting date is determined.

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 SubCommittee
Industrial Advisory Committee
July 25, 2008 Meeting Report by Dr. Lu Yuan**

The Occupational Safety, Health, and Environment (OSH&E) Industrial Advisory Committee (IAC) meeting was held from 11:30 AM to 2:30 PM on July 25, 2008 at Southeastern Livingston Parish Literacy and Technology Center. (Please see the attached example photos!) The attendees include ten of the eleven OSH&E IAC members (Appendix A) except Mr. Richard Metherne. Mr. Lawrence Mauerman and Dr. Lu Yuan, the two full-time faculty members of the OSH&E program, were the co-hosts of the meeting. Dr. Pete Territo and Ms. Joan Gunter (Director of the Livingston Center) also attended. Three current OSH&E students, Daniel Rice, Jeremy Spears, and Mary Faust, were present as well.

The meeting agenda is attached (Appendix B). The purpose of the meeting was to seek accreditation of Southeastern's OSH&E program by the Accreditation Board for Engineering and Technology (ABET). The nine criteria established by the ABET that were mailed to the OSH&E IAC members prior to the meeting (Appendix C) are considered as the absolute guideline and are strictly followed. Meanwhile, the experience and stories from other organizations/institutes that have already been accredited are referred.

The meeting started with the welcoming and introduction from Mr. Mauerman. The attendees then introduced themselves and a short break was held for lunch.

When the meeting resumed, items on the agenda were discussed in order. The first item is Mission and Goals. The followings are a list of comments and suggestions from the attendees.

- 1) The "environment" element needs more focus in the mission statement and listed objectives. The word "environment" shall be considered to add behind "safety and health".
- 2) There are currently two environmental courses in the curriculum and there is a need to consider adding more environmental courses.
- 3) Some local plants require safety personnel to have more environmental education. Sometimes plants will hire a person with an environmental background rather than someone who has a background in the safety field.
- 4) "skills to enter business and industry" may seem inadequate or inappropriate as it represent a trade/technical school atmosphere. The university, on the other hand, provides education based on theoretical and philosophical expertise that prepares the graduates for what a career entails.

A revised statement of Mission and Goals is attached (Appendix D).

The next item is Program Outcomes and Assessment. A flowchart of Assessment for Quality Assurance" from the ABET workshop was presented first. The followings are a list of comments and suggestions from the attendees.

- 1) A letter grade system might be better than the quantitative percentage system. However, considering that ABET requires a quantitative measurement, it is planned to keep using such a system.
- 2) Courses should be balanced, not too rigorous and not too easy, with the students' performance following a normal distribution.
- 3) It is discussed to soften the phrase from "will be able" to something like "will understand how"; however, the ABET criteria define that the program outcomes "must demonstrate that graduates have an ability to ...".
- 4) Good communication skills in both oral presentation and technical writings are very important in the workforce for safety personnel and are often not up to standards. The requirement that 30% of the grade be based on grammar and ability to communicate should be emphasized and consistently ensured.
- 5) The examples of widely recognized certifications should include Certified Industrial Hygienist (CIH) besides Certified Safety Professional (CSP).
- 6) A very good question from Mr. Alan Rovira, "Assessment for Quality Assurance Chart – what are the Measurable Performance Criteria? Is graduation rate a measurable criterion?" [I think we discussed the measurable performance criteria for the courses. But how do we measure the quality of the program? I don't think this was discussed, so it will be addressed in next meeting. Any comments?]

A revised statement of Major Field Assessment Plan is attached (Appendix E).

Dr. Pete Teritto, who oversees the internship program, stated that ABET has three requirements for accreditation related students receiving training on jobsites. He is having difficulty with students finding internships. In the past the program had older students who were likely to already have been employed in the safety field. Now the program is getting more students who are young, entering the program from high school, and with less work experience. ABET allows for a guided field experience, but ABET does not specify the number of hours needed in order to meet this option. Internships can be completed through paid employment, but must include a special project that is above and beyond the student's normal work duties.

Southeastern conducts several different types of surveys on Alumni, employers, and graduates as part of Major Field Assessment for the university.

<http://www.selu.edu/admin/ir/surveys/index.html>

Particularly, the document of competencies validation that represents the employers' perspective was discussed. Major issues include rewording the sentences, softening the phrases, and adding the "environment" element, etc. A revised version is attached (Appendix F).

Next, Mr. Mauerman led the discussion on the curriculum. It is important that the committee support the recommended changes in the catalog (Appendix G). This support is imperative in getting the changes approved by the University Curriculum Council. Committee members are encouraged to continue reviewing the curriculum and ABET criteria, and offer opportunities for improvement where appropriate.

In addition, a list of important issues regarding the OSH&E courses was also discussed.

- 1) It was agreed to have ENGL 322 as a required course rather than a professional elective. In order to keep the total credit hours unchanged, it was proposed to make OSHE 281 and 282 professional electives. Change the course numbers to 400 levels respectively if necessary.
- 2) It was proposed to add more 400 (senior) level courses as professional electives. Example topics could include ergonomics, risk management, organization management, safety and security within specific industries such as shipyard, hospital or healthcare facility, and transportation, etc., and advanced fire protection and life safety.
- 3) A course in radiation safety was discussed, but some of the committee members felt that the need is not that great because there are only 3 nuclear plants in this area. Plus, such a topic has been covered in the industrial hygiene course and does not seem to require a separate course to cover all the details.

During the meeting, Mr. Mauerman recommended that a committee member be responsible for review of the documents that are to be submitted to ABET. Mr. Lance Roux nominated Ms. Dorinda Folse for the position of the committee chairperson. Mr. Steve Pereira seconded the motion. Dorinda accepted the nomination.

The committee members agreed to hold meetings quarterly to continue the ABET accreditation effort. The next meeting may be held as part of the Annual Department Industrial Advisory Committee Meeting (which is usually held on the third or fourth Friday of October) at the Hammond facility. The tentative dates will be sent out in advance of the meeting.

Note: Thank you all for coming to the meeting and providing important comments and suggestions. Special thanks go to Wayne and Alan for the notes that were sent back. We are also grateful for having Mary and Jeremy as the recorders and Dan as the photographer.

Next to do:

1. Course specification sheets for all 19 courses
2. Curriculum update
3. Faculty bios
4. OSH&E program website
5. ASSE Southeastern student section



Appendix A
OSH&E SubCommittee
Industrial Advisory Committee

Members

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Appendix B
OSH&E SubCommittee
Industrial Advisory Committee

Meeting Agenda
July 25, 2008

Introduction and Lunch (Mr. Lawrence Mauerman) 11:30 AM

Mission and Goals 12:00 PM

Program Outcomes and Assessment 12:30 PM

Curriculum 1:00 PM

Miscellaneous and Wrap-up 1:30 PM

Appendix C

Criteria for Accrediting Applied Science Programs Effective for Evaluations during the 2008-2009 Accreditation Cycle

Definitions

(From Section II.D of the ABET *Accreditation Policy and Procedure Manual*)

While ABET recognizes and supports the prerogative of institutions to use and adopt the terminology of their choice, it is necessary for ABET volunteers and staff to have a consistent understanding of terminology. With that purpose in mind, the Commissions will use the following basic definitions:

Program Educational Objectives – Program educational objectives are broad statements that describe the career and professional accomplishments that the program is preparing graduates to achieve.

Program Outcomes – Program outcomes are narrower statements that describe what students are expected to know and be able to do by the time of their graduation. These relate to the skills, knowledge, and behaviors that students acquire in their matriculation through the program.

Assessment – Assessment is one or more processes that identify, collect, and prepare data to evaluate the achievement of program outcomes and program educational objectives.

Evaluation – Evaluation is one or more processes for interpreting the data and evidence accumulated through assessment practices. Evaluation determines the extent to which program outcomes or program educational objectives are being achieved, and results in decisions and actions to improve the program.

It is the responsibility of the program seeking accreditation to demonstrate clearly that the program meets the following criteria.

I. GENERAL CRITERIA FOR BACCALAUREATE AND ASSOCIATE DEGREE PROGRAMS

Criterion 1. Students

The program must evaluate, advise, and monitor students to determine its success in meeting program objectives. The program must have and enforce policies for the acceptance of transfer students and for the validation of courses taken for credit elsewhere. The program must also have and enforce procedures to assure that all students meet all program requirements.

Responsibility: L. Mauerman **Target Date:**

Discussion: Transfer students will come from three general sources: (1) Students from institutions within the State of Louisiana that offer Associate degree Occupational Safety & Health programs, (2) Students that have been enrolled in other degree programs at Southeastern who are changing their major, or (3) Students who have completed course work in other fields of study at other institutions who are transferring to Southeastern for the OSH&E program.

Action(s): Assure that the following are in place: (1) Establish articulation agreements with institutions within the State of Louisiana that offer Associate degree in Occupational Safety & Health programs to assure that safety and health classes taken at those schools with the intent of eventual transfer to Southeastern will meet Southeastern's curriculum requirements. (2) As part of the process of changing majors, transcripts and other records are carefully reviewed and the results recorded on curriculum sheets maintained in the department offices. If there are any questions regarding credit given or denied for courses, these are discussed between the student, the program advisor, the department head(s) involved and the results are recorded. (3) Students transferring from other institutions are required, as part of the application process, to submit official transcripts which document their course work. These transcripts are carefully scrutinized before credit is given at Southeastern.

Criterion 2. Program Educational Objectives

Each program must have in place:

- (a) detailed published educational objectives that are consistent with the mission of the institution and these criteria
- (b) a process based on the needs of the program's various constituencies in which the objectives are determined and periodically evaluated
- (c) a curriculum and processes that ensure the achievement of these objectives.

Responsibility: L. Mauerman, L. Yuan, IAC **Target Date:**

Discussion: Since the objectives must be consistent with the mission of the institution and these criteria, and must meet the needs of its various constituencies, they should be determined by joint consultation of both groups. The objectives shall be developed jointly, therefore, by both faculty members and the constituencies. The latter are represented by the Industrial Advisory Committee (IAC) that has already been instrumental in developing the OSH&E programs.

Action: Initiate meetings with Southeastern OSH&E faculty and members of the OSH&E subcommittee of the IAC. Develop the objectives consistent with the mission of the institution and the criteria, using form and format consistent with well-written objectives.

Criterion 3. Program Outcomes

- A. Baccalaureate degree programs must demonstrate that graduates have:
- (a) an ability to apply knowledge of mathematics, science, and applied sciences
 - (b) an ability to design and conduct experiments, as well as to analyze and interpret data
 - (c) an ability to formulate or design a system, process, or program to meet desired needs
 - (d) an ability to function on multidisciplinary teams
 - (e) an ability to identify and solve applied science problems
 - (f) an understanding of professional and ethical responsibility
 - (g) an ability to communicate effectively
 - (h) the broad education necessary to understand the impact of solutions in a global and societal context
 - (I) a recognition of the need for and an ability to engage in life-long learning
 - (j) a knowledge of contemporary issues
 - (k) an ability to use the techniques, skills, and modern scientific and technical tools necessary for professional practice.
- B. Associate degree programs must demonstrate that graduates have:
- (a) an ability to apply knowledge of mathematics, sciences, and other related disciplines
 - (b) an ability to conduct experiments, as well as to analyze and interpret data
 - (c) an ability to identify, formulate, and solve applied science problems
 - (d) an ability to function on teams
 - (e) an understanding of professional and ethical responsibility
 - (f) an ability to communicate effectively
 - (g) a recognition of the need for and an ability to engage in life-long learning
 - (h) a knowledge of contemporary issues
 - (I) an ability to use the techniques, skills, and modern applied science tools necessary for professional practice.

Responsibility: L. Mauerman, L. Yuan, IAC **Target Date:**

Discussion: It is critical to the practicing safety professional to have mastered the abilities and body of understanding specified in this criterion. The items mentioned in the criterion are not course-specific, but must be covered in the accumulation of the courses required in the degree program. A method must be developed to: (1) assure that course content includes all of these items; and (2) graduates have mastered them to the expected level.

Action: This criterion will be presented at the meeting for the Industrial Advisory Committee to determine if graduates will acquire these abilities and understanding through the current curriculum.

Criterion 4. Continuous Improvement

The program used 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.

Responsibility: L. Yuan **Target Date:**

Discussion: All the documents, meetings, communications, and discussions need to systematically recorded and kept in a safe place for continuous improvement.

Action: Different folders and binders are used to separate different types of documents. Eventually all the documents regarding the OSH&E program will be neatly illustrated with the solid data and evidence.

Criterion 5. Curriculum

The 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.

Responsibility: L. Mauerman, L. Yuan, IAC **Target Date:**

Discussion: The OSH&E degree program was developed, over a four-year period to meet all of the requirements set forth in the various permutations of the ABET committee. As the requirements changed, the program was modified to incorporate those changes. During our peer review, as part of the process for implementing the new degree program, Dr. Paul Specht (Millersville University) said that this program exceeded all requirements for such a program. This is particularly significant in that Dr. Specht is a member of the ABET accreditation team. He did mention, however, that he would have to recuse himself from the actual team when the time came for our accreditation process.

Action: There is no action being considered to change curriculum content other than add new courses and expand existing course content that will improve the program to reflect the continuous improvement of the feedback process.

There are, however, several mistakes in the University Catalog that need to be corrected. They consist primarily in courses that are listed out of sequence, i.e., listed before their prerequisites are listed. Although this error has been known since the beginning of the implementation of the 4-year program, several efforts were put on hold due to University policy in limiting the types of catalog changes that would be considered. Last (2007) year a full-scale effort was made to implement the changes. The changes were approved by both the Department and College curriculum committees, but were again tabled due to University policy. These changes will be critical as part of the ABET accreditation review process and need to be made this year.









Criterion 6. Faculty

The faculty must be of sufficient number as determined by student enrollment and the expected outcome competencies of the program. There must be sufficient faculty to accommodate adequate levels of student-faculty interaction, including classroom teaching, laboratory and field supervision, student advising and counseling, and research, as well as, non-student interactions in university service activities, professional development, and interactions with industrial and professional practitioners, as well as employers of students.

The faculty must have sufficient qualifications and must ensure the proper guidance of the program and its evaluation and development. The overall competence of the faculty may be judged by such factors as education, diversity of backgrounds, applicable experience, teaching performance, ability to communicate, enthusiasm for developing more effective programs, level of scholarship, participation in professional societies, and applicable certifications, registrations or licenses.





Responsibility: L. Mauerman **Target Date:**

Discussion: Competence of the faculty is of utmost importance. Because of the diverse nature of the occupational safety, health and environment profession, a wide variety of subject matter must be mastered by the student. This requires a faculty with the following qualifications:

-  education
-  applicable experience in the OSH&E field
-  demonstrated teaching performance
-  communication ability
-  ability and desire for program improvement
-  demonstrated scholarship
-  participation in professional societies
-  professional certifications, registrations or licenses

Action: Prime consideration in the hiring of new faculty members includes provisions intended to assure that new full-time faculty and part-time adjunct faculty meet the above requirements. When a full-time faculty search is conducted, application materials are carefully reviewed by the faculty search committee and evaluated on a purely objective basis. The recommendations resulting from this are then considered along with personal interviews and candidate demonstrations of knowledge, and teaching capability as part of the hiring process.

Part-time faculty are selected from candidates recommended by safety and health professional societies operating in the greater New Orleans/Baton Rouge area. They must have, as a minimum, the following qualifications:

-  master's degree
-  professional certification (CSP or CIH accepted only, at the present time)
-  extensive experience in the subject matter which they are asked to teach
-  demonstrated teaching ability

Criterion 7. Facilities

Classrooms, laboratories, and associated equipment must be adequate to accomplish the program objectives and provide an atmosphere conducive to learning. Appropriate facilities must be available to foster faculty-student interaction and to create a climate that encourages professional development and professional activities. Programs must provide opportunities for students to learn the use of modern applicable instruments and equipment. Computing and information infrastructures must be in place to support the scholarly activities of the students and faculty and the educational objectives of the program.

Responsibility: L. Mauerman, L. Yuan, IAC **Target Date:**

Discussion: (1) Up to the present time, the program has been able to use and adapt classrooms, laboratories and other facilities as provided at several locations by the university. These facilities are on the main campus; at the Baton Rouge Center (School of Nursing); the St. Tammany Center; and at the Livingston Literacy and Technology Center. There are, however, no facilities of any kind, at any location dedicated specifically to the program.

(2) At times, scheduling of facilities has been less than adequate and has detracted from the ability to provide an effective course, especially on the main campus. Scheduling of required classes that are offered by other departments, has, occasionally been awkward and inconvenient, particularly when they are classes that are not offered on a frequent schedule. The scheduling does not take into account that the majority of OSH&E students are non-traditional and the majority of their course work must be in the evenings or on weekends. Other colleges and departments that do not have to deal with a majority of their majors as non-traditional are not as flexible in scheduling.

Action: (1) A new academic building is being planned and will include facilities for the OSH&E program. Every effort is being made, during the planning stages, to include classrooms, laboratories and other equipment and facilities to meet the needs of the program.

(2) Efforts will also be made to work closely with other departments and colleges who provide course work for the OSH&E program to develop schedules that will provide OSH&E majors with offerings that will be reasonable, given their programming limitations.

Criterion 8. Support

Institutional support, financial resources, and constructive leadership must be adequate to assure the quality and continuity of the program. Resources must be sufficient to attract, retain, and provide for the continued professional development of a well-qualified faculty. Resources also must be sufficient to acquire, maintain, and operate facilities and equipment appropriate for the program. In addition, support personnel and institutional services must be adequate to meet program needs.

Responsibility: L. Mauerman L. Yuan **Target Date:**

Discussion: Support for the program comes from several sources: (1) direct budgeting by the university; (2) laboratory fees provided as part of student registration; (3) grant monies provided by various sources after successful application and awards; and (4) equipment and other donations provided by our industrial partners. In the past we have been very successful in obtaining needed equipment for course instruction through several grant awards. Most recently we acquired two PortaCount Respirator Fit-Test instruments for use in the industrial hygiene classes. We have also received in excess of \$20,000 of used but serviceable equipment from industrial donors.

Action: Successful teaching depends on having operational and properly calibrated equipment for the students to use. With the acquisition of the respirator fit-testing equipment and various airborne contaminant sampling devices, the OSH&E degree program needs to establish a schedule for equipment calibration (required) and repair, as needed.

Although our industrial partners have been generous in providing us with instrumentation and other safety equipment, it is used and, in some cases, outdated. Although it is still serviceable, and can be used for teaching, we need to acquire the new, state-of-the-art equipment of the type that students will encounter in the workplace. Formal programs for regular equipment acquisition (1) through grants and (2) seeking educational enhancement programs from industrial donors in the New Orleans/Baton Rouge regions will be pursued.

The erection of a new industrial technology facility also provides the chance to obtain state-of-the-art equipment that forms a permanent part of the installation.

Criterion 9. Program Criteria

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. If a program, by virtue of its title, becomes subject to two or more sets of Program Criteria, that program must satisfy each set of Program Criteria; however, overlapping requirements need to be satisfied only once.

Responsibility: L. Mauerman, L. Yuan, IAC **Target Date:**

Discussion:

Action:

II. GENERAL CRITERIA FOR MASTER'S LEVEL PROGRAMS

Criteria for master's level applied science programs are inclusive of those for baccalaureate level applied science programs with the following additions: one year of study beyond the baccalaureate level and a project or research activity resulting in a report that demonstrates both mastery of the subject matter and a high level of communication skills.

III. PROGRAM CRITERIA

PROGRAM CRITERIA FOR ENVIRONMENTAL, HEALTH, AND SAFETY AND SIMILARLY NAMED APPLIED SCIENCE PROGRAMS

Lead Societies: American Hygiene Association or
American Society of Safety Engineers

These program criteria apply to applied science programs having environmental, health, and safety in their program titles. Each program evaluated under these Program Criteria must designate which society is to serve as Lead Society for that program.

I. PROGRAM CRITERIAL FOR BACCALAUREATE LEVEL PROGRAMS

Program Criteria presented herein provide the specificity needed to interpret the General Criteria with respect to the discipline of Environmental, Health, and Safety and furnish a framework upon which a given program may develop the more general Outcome and Assessment requirements of Criteria 3.(a) through (k). In all cases, the program must demonstrate that graduates possess the knowledge, skills, and attitudes necessary to competently and ethically practice the applicable scientific, technical, and regulatory aspects of this discipline.

The basic level criteria as applied to the field of Environmental, Health, and Safety should be interpreted with respect to the following curricular content areas:

- (a) environmental, health, and safety fundamentals;
- (b) physiological and/or toxicological interactions of physical, chemical, biological, and ergonomic agents, factors, and/or stressors with the human body;
- (c) anticipation, identification, and evaluation of potentially hazardous agents, conditions and practices;
- (d) fundamental exposure assessment techniques (both qualitative and quantitative);
- (e) environmental, health, and safety data interpretation including statistical and epidemiological principles;
- (f) development of hazard control designs, methods, procedures and programs;
- (g) accident/incident investigation and analysis;
- (h) industrial and construction safety;
- (I) legal aspects of environmental, health, and safety practices;
- (j) environmental, health and safety program management;
- (k) hazardous materials/waste recognition, control, and remediation;
- (l) air pollution fundamentals and control technologies;
- (m) water pollution fundamentals and control technologies;
- (n) environmental regulations and permitting procedures;
- (o) environmental sampling and measurement methodologies.

Note: In this context, the terms hazard and hazardous incorporate issues related to the broad context of occupational environmental, health, and safety.

Environmental, Health, and Safety programs are expected to provide breadth across the range of topics implied by the title. Thus, these curricular content areas are considered to be minimum requirements. Other areas may be added as dictated by the Mission and Program Education Objectives of the specific program. Additionally, the extent to which each content area is developed and emphasized in a given program must also be consistent with the program's mission and objectives. Depending on the program, a given area may be addressed in a devoted course, a portion of a course, or in an appropriate extracurricular activity. Based on this content, program faculty are free to develop unique outcomes at appropriate functional levels that embrace Criterion 3.(a) through (k) of the General Criteria.

Baccalaureate-level Faculty

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.

II. PROGRAM CRITERIA FOR MASTER'S LEVEL PROGRAMS

Master's-level Admission Requirements

Admitted students must hold an earned baccalaureate that prepares them to apply the basic principles of college-level mathematics, chemistry, physics, and biology. Exceptions may be admitted with an individually documented plan of study to compensate for any deficiencies.

Master's-level Curriculum

Criteria for master's-level programs require the following additions beyond the baccalaureate level: (I) minimum of one year of study beyond the basic-level, consisting of courses with increased depth and rigor; (ii) an applied science project or research activity resulting in a report that demonstrates both mastery of the subject matter and a high level of professional and public communication skills; (iii) an adequate foundation in statistics, applied sciences and/or related professional practice; and (iv) advanced qualitative and quantitative problem-solving skills.

Master's-level Faculty

In addition to the general qualifications specified above for baccalaureate-level faculty, master-level faculty are expected to have demonstrated research activity appropriate to their institution's mission.

A full-time faculty member must be identified as administratively in charge of the program.

Appendix D

Mission and Goals Occupational Safety, Health, and Environment (OSH&E)

The Bachelor of Science in Occupational Safety, Health, and Environment (OSH&E) program is designed to provide an academically comprehensive program that prepares graduates with the ability and competency to become highly qualified safety, industrial hygiene, and environment professionals. The educational objectives of the OSH&E program are to prepare students who:

- Apply knowledge and principles of mathematics, science, technology, and management in industry, business, or other related areas of employment as occupational safety, health, and environment professionals;
- Apply practical-oriented knowledge and skills in safety, health, and environment to anticipate, identify and evaluate hazardous conditions and practices, to develop hazard control designs, methods, procedures and programs, and to implement and manage effective safety, health, and environment programs;
- Become effective communicators and ethical facilitators within the practice of safety, health, and environment;
- Continue professional development to address the need of applying principles of safety, health, and environment within a constantly changing and increasingly diverse environment.

Appendix E

Major Field Assessment Plan Occupational Safety, Health, and Environment (OSH&E)

The Bachelor of Science in Occupational Safety, Health, and Environment (OSH&E) program is designed to provide an academically comprehensive program that prepares graduates with the ability and competency to become highly qualified safety, industrial hygiene, and environment professionals.

The educational objectives of the OSH&E program are to prepare students who:

1. Apply knowledge and principles of mathematics, science, technology, and management in industry, business, or other related areas of employment as occupational safety, health, and environment professionals.

Expected Outcomes

Students completing the Baccalaureate degree in OSH&E will demonstrate the ability to apply basic mathematical and scientific knowledge in the safety, health, and environment field.

Assessment

In the selected relevant courses, the exams and assignments should be designed to reflect the course objectives. Students are able to score at least 75% on math, statistics, and science related problems in the exams and assignments.

2. Apply practical-oriented knowledge and skills in safety, health, and environment to anticipate, identify and evaluate hazardous conditions and practices, to develop hazard control designs, methods, procedures and programs, and to implement and manage effective safety and health programs.

Expected Outcomes

Students completing the Baccalaureate degree in OSH&E will demonstrate the ability to anticipate, identify and evaluate safety, health, and environment hazards, and to develop and implement hazard control methods, programs, and system designs.

Assessment

- In the selected relevant courses, students are able to solve technical problems regarding safety, health, and environment in the exams. Approximately 70% of the grade for each of those courses is based on the exam performance.
- In the selected relevant courses, students are able to anticipate, identify, evaluate, and control hazards by successfully conducting a research project in a simulated industrial

work environment. Approximately 30% of the grade for each of those courses is based on the quality of the research project.

- For the selected relevant courses, students will score at least 75% of the overall grade which considers both the exams and research projects.

3. Become effective communicators and ethical facilitators within the practice of safety, health, and environment.

Expected Outcomes

Students completing the Baccalaureate degree in OSH&E will demonstrate the ability to express thoughts effectively in oral and written communications, and to understand ethical behaviors and professional responsibility.

Assessment

- In the majority of courses, students are required to either write a technical research paper, or make an oral presentation of project, or both. Approximately 30% of the grade for each of those courses is based on the quality of the research paper and/or presentation.
 - The exams in selected courses include questions regarding codes of professional ethics. Students are expected to answer right for those questions, if not, individual counseling or discussion will be issued.
4. Continue professional development to address the need of applying principles of safety, health, and environment within a constantly changing and increasingly diverse environment.

Expected Outcomes

Students completing the Baccalaureate degree in OSH&E will demonstrate the ability to broaden education and life-long learning necessary to understand safety, health, and environment issues within a global and social context.

Assessment

- Students are encouraged to become a member of ASSE (American Society of Safety Engineering) Southeastern Louisiana University student section and be actively involved in the events and activities organized by the student section.
- Students are encouraged to continue personal growth and improvement by pursuing the widely recognized certifications including Certified Safety Professional (CSP) and Certified Industrial Hygienist (CIH). As measured on the Southeastern Alumni Survey, 50% of the OSH&E graduates will become CSPs.

Appendix F

Competencies Validation Occupational Safety, Health, and Environment (OSH&E)

- 1) Mathematics, Science and Statistics
 - A. Graduates know how to apply basic mathematical and statistical knowledge in the safety, health, and environment field.
 - B. Graduates know basic principles in chemistry, physics, and biology as it pertains to the practice of safety, health, and environment.

- 2) Communications and Social Sciences
 - A. Graduates are able to effectively express thoughts in oral and written communications.
 - B. Graduates know the techniques, skills, and modern behavioral tools necessary for the practice of safety, health, and environment.
 - C. Graduates are able to effectively function as a part of multi-disciplinary team.

- 3) Safety, Health, and Environment Knowledge
 - A. Graduates understand occupational safety, health, and environment fundamentals.
 - B. Graduates know legal aspects of safety, health, and environmental practices.
 - C. Graduates understand the interactions of physical, chemical, biological, and ergonomic agents, factors, and/or stressors on the human body.
 - D. Graduates understand the application of laws, regulations, standards, and codes to safety, health and environmental conditions.
 - E. Graduates understand and use basic principles of fire prevention and protection in the workplace.
 - F. Graduates know industrial and construction safety throughout the work processes.

- 4) Safety, Health, and Environment Practical Skills
 - A. Graduates know how to apply basic laboratory techniques associated with industrial hygiene and basic sciences.
 - B. Graduates know how to anticipate, identify and evaluate hazardous agents, conditions, and practices.
 - C. Graduates know fundamental exposure assessment techniques.
 - D. Graduates know how to develop hazard control designs, methods, procedures, and programs.
 - E. Graduates know how to conduct accident/incident investigation and analysis.
 - F. Graduates know how to implement and manage effective safety, health, and environment programs.

Appendix G

Current General Catalog: 2007 - 2008

CURRICULUM in OCCUPATIONAL SAFETY, HEALTH AND ENVIRONMENT LEADING to the DEGREE OF BACHELOR of SCIENCE

FIRST YEAR	
FIRST SEMESTER	SECOND SEMESTER
ENGL 101	ENGL 102
MATH 161	MATH 162
†OSHE 111	†OSHE 112
BIOL 151	†OSHE 121
BIOL 152	PSYC 101
CMPS 110 or 173	
Orientation 101	
TOTAL 16 or 17	TOTAL 15
SECOND YEAR	
CHEM 101	PHYS 191
CLAB 103	PLAB 193
MATH 241	CHEM 261
ZOO 241	COMM 211
†OSHE 241	†OSHE 251
†OSHE 261	†OSHE 242
TOTAL 16	TOTAL 16
THIRD YEAR	
ECON 201	Physical Science ¹
ENGL 230 or 231 or 232	HIST 101 or 102 or 201 Or 202
†OSHE 231	IT 242
†OSHE 281	IT 322
†OSHE 282	
TOTAL 15	TOTAL 13
FOURTH YEAR	
†OSHE 371	†OSHE 321
MGMT 351	†OSHE 324
Arts ²	†OSHE 341
†Professional Elective ³	IT 391
†Professional Elective ³	†Professional Elective ³
TOTAL 15	TOTAL 15
Total semester hours required	
121 or 122	

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

¹Select Chemistry 102/104 or Physics 192/194

²Select one course in Art, Dance, Music or Theatre

³Professional electives should be selected in consultation with their advisors.

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

CURRICULUM in OCCUPATIONAL SAFETY, HEALTH AND ENVIRONMENT
LEADING to the DEGREE OF BACHELOR OF SCIENCE
(RECOMMENDED EDITORIAL CHANGES)

FIRST YEAR

First Semester

ENGL 101	Freshman Composition	3
MATH 161	College Algebra	3
OSHE 111	Intro. to Occupational S&H	3
OSHE 112	Design of Hazard Controls	3
BIOL 151	General Biology	3
BIOL 152	Biology Lab	1
Southeastern 101	Freshman Orientation	<u>1-3</u>
TOTAL		17 or 19

Second Semester

ENGL 102	Freshman Composition	3
MATH 162	Plane Trigonometry	3
CMPS 110	Computer Literacy	3
OSHE 121	S&H Prog. Mgmt. & Admin.	3
OSHE 141	Principles of Ind Hygiene	<u>3</u>
TOTAL		15

SECOND YEAR

First Semester

CHEM 101	General Chemistry	3
CLAB 103	Gen. Chemistry Lab	1
MATH 241	Elementary Statistics	3
PSYC 101	General Psychology	3
OSHE 261	Fire Prot. & Prev.	<u>3</u>
TOTAL		13

Second Semester

PHYS 191	General Physics	3
PLAB 193	Gen. Physics Lab	1
COMM 211	Intro to Public Speaking	3
OSHE 231	Safety Laws, Regs. & Stds.	3
OSHE 242	Ergonomics	3
OSHE 251	Env. Laws, Regs. & Stds.	<u>3</u>
TOTAL		16

THIRD YEAR

First Semester

CHEM 102	General Chemistry	3
CLAB 104	Gen. Chemistry Lab	1
ECON 201	Principles of Economics	3
ENGL 230 or 231 or 232	Literature	3
ZOO 241	Human Physiology	4
OSHE 281	Safety in Chem. & Proc. Industries	<u>3</u>
TOTAL		17

Second Semester

CHEM 261	Survey of Organic Chemistry	3
HIST 101 or 102 or 201 or 202	History	3
IT 242	Materials and Processes	3
IT 322	Materials Sci. and Metallurgy	3
OSHE 282	Construction Safety	<u>3</u>
TOTAL		15

FOURTH YEAR

First Semester

OSHE 371	Ed. & Tng. Meth. for Safety	3
MGMT 351	Management of Organizations	3
ART, DANCE, MUSIC or THEATER		3
Elective	Professional Elective	3
Elective	Professional Elective	<u>3</u>
TOTAL		15

Second Semester

OSHE 321	Measurement of Safety Performance & Accident Investigation & Analysis	3
OSHE 324	Systems Safety	3
OSHE 341	Field Methods of Ind. Hyg.	3
IT 391	Industrial Internship	3
Elective	Professional Elective	<u>3</u>
TOTAL		15

Total semester hours required 122 or 124

Professional Electives

ENGL 322	Introduction to Professional and Technical Writing	3 hrs.
OSHE 311	Safety & Health Program Development	3 hrs.
OSHE 322	Psychological Aspects of Safety	3 hrs.
OSHE 323	Product Safety & Liability	3 hrs.
OSHE 441	Toxicology	3 hrs.
OSHE 451	Hazardous Materials Management	3 hrs.