

Annual Goals for Chemistry & Industrial Hygiene

2010-2011

Title:	Retention of Professional Chemistry Major
Description:	The Department plans to implement a tracking system in order to monitor our professional chemistry majors' progress towards graduation.
Budget:	0.00
University Goals:	2
Strategic Goals:	238
Responsibility:	Program Coordinator
Participation:	Department Chair
Results:	A tracking system has been designed and implemented. The new system should allow the department to have a better understanding of how our majors are progressing, and will give a historic record of when majors are added and dropped. The data is collected each semester as students are advised.
Actions:	The system was designed and implemented this past academic year. The results from the first year are being reviewed.
Improvements:	As additional data are acquired, any trends that exist relating to commons pitfalls, etc. should be apparent. For example, if it becomes apparent that a particular class is giving our majors trouble, advisors can instruct the students as to how to better prepare themselves for that particular course. This data should be a valuable tool as we advise our majors.

Title:	Minority Recruitment
Description:	The Department plans to assess the effectiveness of our minority recruitment efforts, and consider implementation of new methods.
Budget:	0.00
University Goals:	3

**Strategic
Goals:**

Responsibility: Program Coordinator

Participation: Department Chair

Results: Highlights of the IH academic program and professional opportunities in IH were brought up to the attention of participants of the Annual Presidential Mentors Academy (PMA) Program at UNA. The PMA is a program that provides financial help and learning experience to incoming minority freshmen whose racial group is underrepresented on the UNA campus. Eligible students to the PMA program are those who possess leadership and academic potential and are a resident of the state of Alabama or one of eleven contiguous counties in TN and MS.

Actions: This and other efforts have increased awareness of the need for focus on minority recruitment. Currently, the Department helps to host an annual high school exam competition. The student's information given on the exam score sheet is used to contact top scoring students to make them aware of scholarship opportunities and to invite the students to visit campus. The information form has been changed so as to include race and gender. All minority students participating in the exam competition will be invited to visit campus and our department for an open house event.

Improvements:

Title: Assessment of Physical Resources

Description: Given the strong possibility that a new science and technology building will be constructed in the relatively near future, the Department plans to assess our current and projected needs for office, research, laboratory, and classroom space.

Budget: 0.00

**University
Goals:** 1,5

**Strategic
Goals:** 238,239

Responsibility: Department Faculty

Participation: Department Chair

Results: To date, departmental faculty have each met with the designers at Exp for the purpose of determining our department's needs now, and into the future.

Actions: A space program has been created that will be used in the design of the new

building.

Improvements:

Title: Faculty Development

Description: The Department plans to promote faculty development by emphasizing the importance of travel to professional conferences and presentations.

Budget: 0.00

University Goals: 1

Strategic Goals: 238,239

Responsibility: Department Faculty

Participation: Department Chair

Results: The Department helped to send two faculty members (Drs. Figueroa and Olive) to the annual American Industrial Hygiene Associated Conference and Exposition in Portland, Oregon; two faculty members (Drs. Diaz and Hofacker) to the Southeastern Regional Meeting of the American Chemical Society in New Orleans, LA; and one faculty member (Dr. Moeller) to the annual meeting of the Alabama Academy of Science held at Jacksonville State University.

Actions:

Improvements: Traditionally, our analytical chemist attends The Pittsburgh Conference (PittCon) on Analytical Chemistry and Applied Spectroscopy, a Pennsylvania not-for-profit educational corporation which is comprised of the Spectroscopy Society of Pittsburgh (SSP) and the Society for Analytical Chemists of Pittsburgh (SACP). Pittcon attracts nearly 20,000 attendees from industry, academia and government from 90 countries worldwide. Dr. Huffman plans to attend this coming year.

Title: Student Career Opportunities/Job Placement

Description: The Department plans to host a Career Day specifically oriented to chemistry and industrial hygiene.

Budget: 0.00

University Goals: 2,5

Strategic**Goals:****Responsibility:** Student Organization Advisors**Participation:** Department Chair**Results:** A career symposium was organized by the Department of Chemistry and Industrial Hygiene where chemistry and occupational health professionals discussed with UNA students the demands, responsibilities, challenges and opportunities of their appointments. Government and private industries were represented at this symposium. The local OSHA Area Director, EH&S Managers of Wyle Laboratories and the National Alabama Corporation, Industrial Hygienists of Bridgestone Firestone and Honda Manufacturing, and Environmental Engineers of SCA Tissue North America were among the presenters.**Actions:** The program was well received by students, and presenters gave positive feedback as well. This effort will likely become an annual event. In addition to the Career Day event, it has become standard practice to forward all job postings to faculty for distribution to their students, as well as to post opportunities on the Department's bulletin board.**Improvements:**

Student Learning Outcomes for Chemistry

2010-2011

Title:	Knowledge of Bonding Theory
Description:	Knowledge-based outcome: Students will be able to demonstrate knowledge of bonding theory. Outcome directly measured in CH 111 and CH 312.
Budget:	\$0.00
Core Competencies:	4,5
25% Online:	
50% Online:	
Core Competencies:	4,5

How Often: Per semester
Assessed this Year? Yes
Responsibility: Course Instructors
Participation: Department Chair

Direct Assessments

Subject Specific ACS Final Exam

Indirect Assessments

Results: A total of 36% of students demonstrated appropriate level of knowledge.
Curriculum: None
Actions: No
Improvements: The instructor plans to find a more concise way to express the relationship between species in a reaction, whether it be tabular or simply cutting out superfluous information. The students seem to get bogged down in the details and lose the point of any given exercise. In addition, the assessment process itself may need to be revisited. Students often do not do well on the comprehensive final exam. Although it is desirable to administer a nationally normed exam and use the results for assessment purposes, the level of difficulty may skew the results.

Title: Kinetics
Description: Knowledge-based outcome: Students will be able to apply concepts of chemical kinetics. Outcome directly measured in CH 341 and CH 382.
Budget: \$0.00
Core Competencies: 4,5

25% Online:

50% Online:

Core Competencies: 4,5

How Often: Every year

Assessed this Year? Yes

Responsibility: Course Instructors

Participation: Department Chair

Direct Assessments

Subject Specific ACS Final Exam

Indirect Assessments

Results: A total of 50% of students demonstrated appropriate level of knowledge.

Curriculum: None

Actions: No

Improvements: From this data, it appears that knowledge of chemical kinetics is the weakest area in physical chemistry. The instructor plans to address this by using slightly modified versions of the final exam questions in Turning Point slides, thereby giving students more instruction in this specific area.

Title: Thermodynamics

Description: Knowledge-based outcome: Students will be able to quantitatively employ chemical thermodynamics. Outcome directly measured in CH 341 and CH 382.

Budget: \$0.00

Core Competencies: 4,5

25% Online:

50% Online:

Core Competencies: 4,5

How Often: Every year

Assessed this Year? Yes

Responsibility: Course Instructors

Participation: Department Chair

Direct Assessments

Subject Specific ACS Final Exam

Indirect Assessments

Results: A total of 61% of students demonstrated appropriate level of knowledge.

Curriculum: None

Actions: Getting all assessments into a single workbook was a great improvement and good steps towards refining the assessment process.

Improvements: The assessment process for this course has evolved considerably and will continue to improve as better tools are developed.

Title: Stoichiometry

Description: Knowledge-based outcome: Students will be able to demonstrate the use of stoichiometry. Outcome directly measured in CH 111 and CH 321.

Budget: \$0.00
Core Competencies: 4,5
25% Online:
50% Online:
Core Competencies: 4,5
How Often: Per semester
Assessed this Year? Yes
Responsibility: Course Instructors
Participation: Department Chair
Direct Assessments

Subject Specific ACS Final Exam

Indirect Assessments

Results: A total of 38% of students demonstrated appropriate level of knowledge.

Curriculum: None

Actions: No

Improvements: As this material comes from the last chapter we typically cover in CH 111, an effort will be made to leave more time at the end of the semester to more adequately cover this material. In addition, the assessment process itself may need to be revisited. Students often do not do well on the comprehensive final exam. Although it is desirable to administer a nationally normed exam and use the results for assessment purposes, the level of difficulty may skew the results.

Title:	Design and Perform an Experiment
Description:	Knowledge-based outcome: Students will be able to design and perform an experiment. Outcome directly measured in CH 341L/CH 381L.
Budget:	\$0.00
Core Competencies:	3,4,5
25% Online:	
50% Online:	
Core Competencies:	3,4,5
How Often:	Every year
Assessed this Year?	Yes
Responsibility:	Course Instructors
Participation:	Department Chair
Direct Assessments	Laboratory Final Exam
Indirect Assessments	
Results:	A total of 90% of students demonstrated appropriate level of knowledge.
Curriculum:	None
Actions:	No
Improvements:	The outcome will continue to be assessed, but overall, the students are demonstrating a relatively high level of mastery in the areas of

communicating results and information.

Title: Critical Thinking

Description: Knowledge-based outcome: Students will be able to think critically.
Outcome directly measured in CH 341/CH 381.

Budget: \$0.00

Core Competencies: 2

25% Online:

50% Online:

Core Competencies: 2

How Often: Every year

Assessed this Year? Yes

Responsibility: Course Instructors

Participation: Department Chair

Direct Assessments

Critical thinking exercises and assignments in laboratory

Indirect Assessments

Results: A total of 77% of students demonstrated appropriate level of knowledge.

Curriculum: None

Actions: No

Improvements: The outcome will continue to be assessed, and further emphasis will be placed on developing critical thinking skills.

Title: Solutions

Description: Knowledge-based outcome: Students will be able to demonstrate knowledge of solution chemistry. Outcome directly measured in CH 321.

Budget: \$0.00

Core 4,5

Competencies:

25% Online:

50% Online:

Core 4,5

Competencies:

How Often: Every year

Assessed this Year? Yes

Responsibility: Course Instructors

Participation: Department Chair

Direct Assessments

Subject Specific ACS Final Exam

Indirect Assessments

Results: A total of 39% of students demonstrated appropriate level of knowledge.

Curriculum: None.

Actions: No.

Improvements: The assessment process itself may need to be revisited. Students often do not do well on the comprehensive final exam. Although it is desirable to administer a nationally normed exam and use the results for assessment purposes, the level of difficulty may skew the results.

Title: Spectroscopy

Description: Knowledge-based outcome: Students will be able to demonstrate the ability to understand and interpret spectroscopic data. Outcome directly measured in CH 312 and CH 322L/432L.

Budget: \$0.00

Core Competencies: 3,4,5

25% Online:

50% Online:

Core Competencies: 3,4,5

How Often: Every year

Assessed this Year? Yes

Responsibility: Course Instructors

Participation: Department Chair

Direct Assessments

Subject Specific ACS Final Exam

Indirect Assessments

Results: A total of 43% of students demonstrated appropriate level of knowledge.

Curriculum: None

Actions: No

Improvements: The assessment process itself may need to be revisited. Students often do not do well on the comprehensive final exam. Although it is desirable to administer a nationally normed exam and use the results for assessment purposes, the level of difficulty may skew the results.

Title: Gather, Process, and Interpret Data

Description: Knowledge-based outcome: Students will be able to gather, process, and interpret data. Outcome directly measured in CH 322L/432L.

Budget: \$0.00

Core Competencies: 3,4,5

25% Online:

50% Online:

Core Competencies: 3,4,5

How Often: Every year

Assessed this Year? Yes

Responsibility: Course Instructors

Participation: Department Chair

Direct Assessments

Written Laboratory Reports

Indirect Assessments

Results: A total of 85% of students demonstrated appropriate level of knowledge.

Curriculum: None

Actions: No

Improvements: The average of laboratory reports handed in by students in CH 322L/CH 432L in the spring of 2011 was an 85%. Consistent grading rubrics are used. The outcome will continue to be assessed, but overall, the students are demonstrating a relatively high level of mastery in the areas of gathering, processing, and interpreting data.

Title: Communicate Results and Information

Description: Knowledge-based outcome: Students will be able to communicate results and information. Outcome directly measured in CH 321 and CH 382.

Budget: \$0.00

Core Competencies: 1,5

25% Online:

50% Online:

Core Competencies: 1,5

How Often: Every year

Assessed this Year?

Responsibility: Course Instructors

Participation: Department Chair

Direct Assessments

Written Laboratory Reports

Indirect Assessments

Results: A total of 88% of students demonstrated appropriate level of knowledge.

Curriculum: None

Actions:

Improvements: The average of laboratory reports handed in by students in CH 321L in the fall of 2010 was 87.5%. The outcome will continue to be assessed, but overall, the students are demonstrating a relatively high level of mastery in the areas of communicating results and information.