

# Assessment of Program Learning Outcomes Report Form A

Chemistry  
(Instructional/Degree Program)

**B.S.**  
(Degree Level) August 2007-May 2008  
(Assessment Period Covered)

**Instructions:** This form should be used to report on each of your **Program Learning Outcomes**. You may not assess every program learning outcome every year, but you will have a report for each outcome based on the year (2004-present) that it *was* assessed.

## 1. Program Learning Outcome (What did your program want from your students?)

Outcome: Critical thinking: Students will demonstrate the ability to access and interpret chemical information.

## 2. Strategies Used to Meet Learning Outcome (What did you do?)

- a. Utilized CHEM 4001 Journal reading course to teach critical thinking and accessing information, and CHEM 4051 an Independent research courses to reinforce and integrate critical thinking skills. Students are trained in using different search engines to retrieve chemical information. Department acquired SCi-Finder Scholar for Science searches.
- b. The CHEM 4051, an independent research course builds on application of chemistry knowledge to solve research problems. Students produced both oral and written presentations )
- c. Invited speakers in diverse chemical field to give presentations to our student

## 3a. First Direct Measure or Means of Assessment for Outcome above (Pre-Post Test; Capstone; Licensure Exam; etc.). Briefly explain the means or measure and how you determined achievement.

At least 50% of Students completing CHEM 4051 independent research will present their work at regional conference or will serve as co-author in refereed journal articles.

## 3b. Results/ Findings. (How did you do? Summarize Assessment Data Collected.)

60% of students completing CHEM 4051 presented at Regional Conferences

1. Jackson, Milton, Jr. **Functionalized Carbon Nanotubes -Epoxy Resin Composites: Synthesis and Properties.** Abstracts, 64th Southwest Regional Meeting of the American Chemical Society, Little Rock, AR, United States, October 1-4 (2008), SWRM-287. CODEN: 69LAP5 AN 2008:1238271 CAPLUS
2. Jackson, Milton; **Molecular modeling the interaction between the chemical ligands and Cyclin-Dependent Kinase.** Abstracts of Papers, 236th ACS National Meeting, Philadelphia, PA, United States, August 17-21, 2008 (2008), MEDI-359. CODEN: 69KXQ2 AN 2008:953829 CAPLUS

3. Olusanya, Yetunde; **Synthesis of Modified Polyamidoamine Dendrimers.** Abstracts, 64th Southwest Regional Meeting of the American Chemical Society, Little Rock, AR, United States, October 1- (2008), SWRM-227. CODEN: 69LAP5 AN 2008:1238211 CAPLUS

**3c. Use of Results** (How did you use the findings?)

The regional and national presentations serve as a good indicator of superior students' performance by undergraduate chemistry majors. We will Continue to stress research engagement and provide support for student's engagement in research activities.

**4a. Second Direct (or Indirect) Measure or Means of Assessment for Outcome above\*** (Direct: Pre-Post Test; Capstone; Licensure Exam; etc.; Indirect: Alumni Survey; Interviews; NSSE; etc.). Briefly explain the means or measure and how you determined achievement.\*

80% of undergraduate majors who successfully complete independent research will be a co-author in at least one refereed publication

**4b. Results/ Findings.** (How did you do? Summarize Assessment Data Collected.)

80% of Students co-authored refereed articles published in 2008

- 1 **Edigin Osayamen**, "Functionalization of single-walled carbon nanotubes with N-[3-(trimethoxysilyl)propyl]ethylenediamine and its cobalt complex," *Journal of Physics and Chemistry of Solids*, **2008**, 69, 1194-1198
2. Yamen Edigin, Paul Biney, Zhiping Luo "Dispersion of aminoalkyl-silyl ester or amine alkyl-phosphonic acid Side wall functionalized Carbon Nanotubes in silica using sol-gel processing" *Mater. Lett.* 2008 62(6-7),918-92
3. McMillan, Erinn. **Efficient oxidation of 5-hydroxymethylfurfural to 2,5-diformylfuran using Mn(III)-salen catalysts.** *Catalysis Communications* (2007), Volume Date 2008, 9(2), 286-288. CODEN: CCAOAC ISSN:1566-7367. CAN 149:471268 AN 2007:1368032 CAPLUS
4. McNeal, Ivana; . **A simple one-pot synthesis of Jacobson-Katsuki type chiral Mn(III)-salen catalyst immobilized in silica by sol-gel process and applications in asymmetric epoxidation of alkenes.** *Catalysis Communications* (2008), 9(14), 2437-2440. CODEN: CCAOAC ISSN:1566-7367. AN 2008:1017281 CAPLUS
5. Williams, LaToya D. **Mechanism of the dehydration of D-fructose to 5-hydroxymethylfurfural in dimethyl sulfoxide at 150 C: an NMR study.** *Carbohydrate Research* (2008), 343(18), 3021-3024. CODEN: CRBRAT ISSN:0008-6215. CAN 150:98065 AN 2008:1372437 CAPLUS  
2006 94% N=6; 2007 81% N=8

**4c. Use of Results** (How did you use the findings?)

Department will promote faculty sponsored undergraduate research leading to scholarly production. Encourage more faculty members to write grant proposals in order to engage more students in research and critical thinking.

**5. Documentation** (What is the evidence (e.g. Licensure Exam Summary Results, Spreadsheet from True Outcomes from Capstone Course, etc.)? Where is it located (e.g. Assessment Coordinator's Office, etc.?)

Students' publications are located in the department's office (Drs. Oki, and

Amarasekara.)