MISSION STATEMENT

Mission Statement:

The program in chemistry is designed to contribute toward the overall mission of the College of Natural Sciences and Mathematics and The University of West Alabama by providing opportunities for students to pursue quality education in chemistry. Importance is placed on assisting students in developing the important qualities of independent critical thinking, respect for the ideas of others, and the capacity for scientific research and discovery. The program also strives to serve area and regional schools, industries, and businesses through a variety of outreach services and by producing graduates that are well qualified to pursue advanced studies and productive careers in chemically related fields.
### Annual Assessment Plan
(August 1-September 30)

**Department:** Physical Sciences  
**Title of Program:** Chemistry  
**Academic Year:** 2005-2006  
**Degree Level:** B.S.

<table>
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<tr>
<th>University Goal/Mission</th>
<th>Objectives</th>
<th>Expected Results (Outcomes)</th>
<th>Assessment Instrument(s)/Procedures/Costs</th>
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<tbody>
<tr>
<td>To provide opportunities for students to pursue a quality education and assist in developing the important qualities of independent thinking and respect for the ideas of others, personal integrity and character.</td>
<td>1. Students graduating from the program will possess knowledge of organic, analytical, inorganic, and physical chemistry that is comparable to students completing similar courses of study at other institutions.</td>
<td>1a. Student test scores on American Chemical Society standardized tests in general chemistry, organic chemistry, physical chemistry, and analytical chemistry will improve annually, until the mean UWA scores on these exams match the national means.</td>
<td>1a. American Chemical Society (ACS) achievement tests in general chemistry, organic chemistry, physical chemistry, and analytical chemistry, will be administered to all students completing course sequences in these subject areas.</td>
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<td>2. The degree program will prepare students for further study in graduate or professional schools or for successful careers in chemistry and related fields</td>
<td>2a. 70% of all graduates of the chemistry program responding to alumni surveys will agree that the preparation they received was of high quality.</td>
<td>2a. The Office of Alumni Affairs conducts a survey of alumni each October. Administration and costs are the responsibility of that office.</td>
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<td>2b. 70% of all of graduating seniors in chemistry responding to departmental surveys and inquiries will report success in finding jobs in their field or successful admission to graduate or professional schools.</td>
<td>2b. The department follows its graduates after graduation by phone, mail, and personal contact. A new system to permit surveying graduating seniors as they apply for their diplomas is being developed by the Office of Institutional Effectiveness. The department will work with this office to develop an appropriate survey instrument for chemistry majors.</td>
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<tr>
<td>Objectives</td>
<td>Expected Results (Outcomes)</td>
<td>Statement of Results</td>
<td>Problems Encountered</td>
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<td>1. To provide students with the basic knowledge of chemistry as required for their major and courses of study.</td>
<td>1. The department is expected to staff and offer the following courses for various department and colleges: College of Education: CH 111, CH 112, CH 101, CH 102, ES 100, ES 120, PH 201 and GE 102 and other classes as needed for certification. Division of Nursing: CH 101, CH 102 College of Business CH 101, CH102, ES 100, ES120, and PH 100. College of Liberal Arts; CH 101, CH102, ES 100, ES120, PH 100, and PH 201</td>
<td>1. The department has successfully staffed the classes listed to the left.</td>
<td>1a. College of Education. Due to programming changes in the chemistry program, the department does not present or offer the material needed to certify a chemistry teacher. 1b. Division of Nursing. The courses required for a BS in nursing are offered during the summer semester. However, due to an increase in enrollment and the apparent need of physical sciences courses during the year, we would like to offer these classes during the school year.</td>
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<tr>
<td>College of Natural Sciences and Mathematics</td>
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<td>CH 111, CH 112, CH 241, CH 242, CH 321, PH 201, PH 202, PH 211, PH 212, GE 102, GE 370, ES 100, and ES 120.</td>
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</table>
### Objectives

<table>
<thead>
<tr>
<th>Title of Program: <strong>Basic Curriculum</strong></th>
<th><strong>Expected Results (Outcomes)</strong></th>
<th><strong>Statement of Results</strong></th>
<th><strong>Problems Encountered</strong></th>
<th><strong>Action Taken/Plans for Improvement</strong></th>
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<tr>
<td>2. The basic courses will prepare students for further study in their related fields</td>
<td>2. 70% of all graduates responding to alumni surveys will agree that the preparation they received was of high quality.</td>
<td>2. Graduation Survey conducted by the Office of Institutional Assessment indicated that 90.2% of 2003-2004 respondents were satisfied or very satisfied with the quality of instruction they received, while 74.5% of the same respondents were satisfied or very satisfied with the academic program.</td>
<td>Since many of our courses are popular with the students, many are overloaded and the department lacks the staff to offer additional classes.</td>
<td>The department has proposed new additions to the staff, so the department can offer these classes during the academic year.</td>
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### Self-Study (Continued)

(August 1-September 30)

**Department:** Physical Sciences  
**Title of Program:** Chemistry  
**Academic Year:** 2004-2005  
**Degree Level:** B.S.

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<td>1. Students graduating from the program will possess knowledge of organic,</td>
<td>1a. Student test scores on American Chemical Society standardized tests</td>
<td>1a. Due to the turnover in the Department of Physical Sciences, this data was not collected.</td>
<td>1a. The Department is taking steps to ensure these scores are reported.</td>
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analytical, inorganic, biochemistry and physical chemistry that is comparable to students completing similar courses of study at other institutions.

in general chemistry, organic chemistry, physical chemistry, and analytical chemistry will improve annually, until the mean UWA scores on these exams match the national means. If past problems of faculty turnover and instability are corrected and the ACT of incoming students can be increased, it is hoped this can be achieved in five years.

either not reported or lost.

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<td>2. The degree program will prepare students for further study in graduate or professional schools or for successful careers in chemistry and related fields</td>
<td>2a. 70 % of all graduates of the chemistry program responding to alumni surveys will agree that the preparation they received was of high quality.</td>
<td>2a. Graduation Survey conducted by the Office of Institutional Assessment indicated that 90.2 % of 2003-2004 respondents were satisfied or very satisfied with the quality of instruction they received, while 74.5 % of the same respondents were satisfied or very satisfied</td>
<td>either not reported or lost.</td>
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<td>2b. 70% of all graduating seniors in chemistry responding to departmental surveys and inquiries will report success in finding jobs in their field or successful admission to graduate or professional schools.</td>
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<td>with the academic program.</td>
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<td>2b. 100% of 2004 graduates in Chemistry are gainfully employed.</td>
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Statement of Achievements

Department of Physical Sciences

Academic Year: 2004-2005

Plans Implemented

Plans Not Implemented
Continued employment of current positions and current level of resources for D.O.E. Employed part-time student assistants to help in the laboratories.

All faculty members contributed to continued recruitment efforts in chemistry, including telephone/postal/e-mail contacts with area high school and junior college students, Science Day event activities on campus for area high schools, and science fair judging.

Made curriculum changes based on assessment results and A.C.S. guidelines (with approval of University Academic Council):

Continued the Chemistry Seminar Series

Unable to obtain funding to hire a fourth Ph.D. candidate or chemistry lecturer/lab technician to teach lower level classes and remedy teaching overloads. (This remains the most urgent need in the department.)

Unable to obtain funding to hire a tenure track geologist to replace the current adjunct faculty, who is retiring.

Did not have resources to establish contingency fund for maintenance/repair/replacement of major laboratory instruments.

The replacement of the chemical fume hoods in the laboratories. These hoods must be replaced as soon as possible.
Additional Achievements Not Specifically Addressed In Plans

(1) Dr. Bailey received a NSF fellowship to study and conduct research at the University of Tennessee for the second year in a row.

(2) Dr. Bailey is a member of Roger Campbell dissertation committee at the University of Alabama.


(4) Dr. Bailey was a co-author of a poster presented by Lance Riddle of the University of Tennessee at the 56th meeting of the Southeast Regional Meeting of the American Chemical Society, Research Triangle Park, NC, November 2004.

(5) Dr. Collison was the Secretary of the Alabama Local Section of the American Chemical Society, 2004.
<table>
<thead>
<tr>
<th>Plans/Goals</th>
<th>Strategies to Implement</th>
<th>Completion Date</th>
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SHORT-RANGE PLANS: FIRST YEAR

DEPARTMENT OF PHYSICAL SCIENCES

Academic Year: 2006-2007
1. Continue to provide high quality instruction to students in the areas of chemistry, earth science, geology, and physics, with adequate faculty and instructional/administrative support for this instructional mission.

1a. Continue employment of three full-time faculty members in chemistry, one full-time faculty member in physics, and a part-time secretary.

1b. Hire a tenure track, Ph.D. position in Geology or Geochemistry. This person will be responsible for physical geology, environmental geology and earth science courses. The current adjunct instructor, Richard Thurn, has announced his intention to retire. In addition, the current instructor of Environmental Geology has an academic overload and his workload must be reduced.

1c. Hire fourth tenure-track, Ph.D. position in biochemistry. The added position is essential to reducing teaching overloads, particularly as the Department must include several additional classes to the annual schedule to meet state guidelines for teacher education in chemistry. A fourth full-time position is mandated by American Chemical Society program certification guidelines as well.

1d. Provide adequate resources to these faculty members in the areas of instructional supplies and equipment, office supplies, funds for faculty travel and development, special activities, etc. (Including increases as needed for inflation and additional travel funds to support increasing faculty participation at regional and national conferences.) Specific equipment needs include pH meters and probes, glassware and equipment for the physical chemistry laboratory, and repairs to several major instruments. With the addition of a biochemistry position, start up funds for a new biochemistry laboratory will be needed.

1a. Continuous--throughout academic year.

1b. The approval for this tenure track position must be granted by the Spring of 2006 in order for the position to be filled by August of 2006.

1c. Approval of additional faculty position must come early enough (in spring of 2005) to advertise and fill position by fall of 2005.

1d. Continuous--throughout academic year. Lab equipment and repairs, including new biochemistry laboratory, should be purchased as early as funds become available, preferably with the start of fall semester.
<table>
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<tr>
<td>1. Continued:</td>
<td>1d. Implement curriculum and course content changes as needed in response to assessment results.</td>
<td>1d. Changes in curriculum and course descriptions must be recommended in time for Academic Council approval and inclusion in 2006-2007 catalogues.</td>
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<td>1e. Continue program of guest speakers through Chemistry Seminar Series.</td>
<td>1e. Schedule for seminar speakers is determined by availability of speakers, but a minimum of two seminars per semester is the goal (more if scheduling and funds permit).</td>
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<td>Continue to provide high quality instruction to students in the areas of chemistry, earth science, geology, and physics, with adequate faculty and instructional/administrative support for this instructional mission.</td>
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</table>
2. Provide for building renovations and repairs as needed to support growing program.

2a. Replacement of Fume Hoods in laboratories. Current equipment is 30 years old and continued maintenance of the old hoods is no longer feasible. Two hoods, one in WH 404 and one in WH 409, are in very bad shape. **Because of the serious safety risks and liability issues involved in the current hood situation, this must be a top University priority.** (Hood replacement will continue in annual plans until all hoods have been replaced. If the University is successful in building/acquiring new science facilities, new hoods will be an integral part of new physical science laboratories.)

2b. Establish contingency fund to provide for the maintenance, repair, and replacement of major laboratory instruments.

2c. Departmental Building and Facilities Committee will annually review facilities and update renovation/repair plans as needed.

2d. Investigate, and pursue when feasible, outside sources of funding for buildings and facilities, including state and federal agencies, private grant foundations, etc.

2a. Hood replacement should commence immediately.

2b. Contingency fund for equipment will be implemented as soon as funds are available.

2c. Committee must complete annual review and recommendations in time to be included in annual strategic planning documents.

2d. On-going. Grant deadlines determined by granting agencies.
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| 3. Continue activities of Chemistry Research Initiative—fund raising, research support, Summer Research Institute | 3a. Host Summer Research Institute for undergraduates, providing stipends and research supplies as needed.  
3b. Continue fund raising activities as needed to complete endowment goals. | 3a. Stipends needed for summer, 2006.  
Research supplies used primarily during the summer, but may needed to maintain certain research activities on an on-going basis at other times.  
3b. On going—in cooperation with UWA Foundation and Office of Institutional Advancement. (Personnel shortages and other University priorities in the Office of Institutional Advancement have significantly slowed fund raising activities.) |             |
| 4. Continue recruiting program to increase enrollment in the chemistry program | 4a. Continue current recruiting activates:  
Participate in campus visits to regional high schools as organized by NSM committee  
Letter and personal contacts with community colleges  
Letters and personal contact with high school seniors on ACT and National Merit Scholarship lists  
Chemistry “magic” shows in local schools  
Science Fair judging | 4a. Letter/personal contact/visitation campaigns—on-going, but most effective during fall semester (prior to students’ college application decisions)  
Magic shows and Science Fairs—on-going, as scheduled by participating high schools |             |
| 5. Continue implementation of plans for eventual American Chemical Society (ACS) certification of the chemistry program | 5a. Acquire a nuclear magnetic resonance spectrophotometer (NMR) and provide funds for upkeep and maintenance. (This is the one major instrument required for ACS certification not already available or currently anticipated.) | 5a. Acquisition dependent on the availability of funds, but necessary before ACS certification is possible. |             |
MEDIUM-RANGE PLANS: YEARS TWO AND THREE

DEPARTMENT OF PHYSICAL SCIENCES

Year Two: 2007-2008

(1) Provide adequate personnel to fulfill all departmental goals and responsibilities, including four full-time positions in chemistry (3 current + biochemist), one full-time in physics, secretary (at least half-time), and adjuncts and student assistants as needed. Add new full-time position in geology/geochemistry to take over teaching loads of retiring adjunct faculty (Mr. Richard Thurn) in geology & earth science.

(2) Provide adequate resources (office and instructional supplies, instructional equipment, travel, faculty development, etc.) to support instructional programs. In addition to equipment upgrades planned but not completed in 2006-2007 (including NMR), acquire new Fourier Transform Infrared (FTIR) and Ultraviolet/Visible (UV-Vis) spectrophotometers to replace current failing instruments. Upgrade geology laboratory as needed for geology faculty.

(3) Implement curriculum and course content changes as needed in response to assessment results.

(4) Provide for building renovations and repairs as needed to support growing program: Continue fume hood replacement process. Maintain repair/replacement contingency fund.

(5) Continue activities of the Chemistry Research Initiative and Summer Research Institute.

(6) Continue recruiting and retention efforts to increase enrollment in the chemistry program and promote program viability.

(7) Continue efforts toward ACS accreditation of chemistry program.

Year Three: 2008-2009

(1) Provide adequate personnel to fulfill all departmental goals and responsibilities, including four full-time positions in chemistry (3 current + biochemist), one full-time in physics, one fulltime geologist, secretary (at least half-time), and adjuncts and student assistants as needed.

(2) Provide adequate resources (office and instructional supplies, instructional equipment, travel, faculty development, etc.) to support instructional programs, including equipment upgrades planned but not completed in previous years.
(3) Implement curriculum and course content changes as needed in response to assessment results.

(4) Provide for building renovations and repairs as needed to support growing program: Continue fume hood replacement process. Maintain repair/replacement contingency fund.

(5) Continue activities of the Chemistry Research Initiative and Summer Research Institute.

(6) Continue recruiting and retention efforts to increase enrollment in the chemistry program and promote program viability.

(7) Continue efforts toward ACS accreditation of chemistry program. Hire laboratory director/manager as recommended by ACS guidelines.

Approved: ________________________    Approved: ___

Department Chairperson             Dean