Los Angeles Harbor College

Program Review for

PHYSICAL SCIENCES PATHWAY
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Academic Program/Pathway Review

Name of Pathway: Physical Sciences

Division chairperson: L. J. McKenzie        Phone number: 310-233-4501

Names and types of program/pathway: Astronomy, Chemistry and Physics

This pathway includes associate of science degrees in Chemistry and Physics

The Program/Pathway Review Self-Study Committee consists of:

Division Chairperson: L. J. McKenzie

Program/Pathway Review Chairperson: L. J. McKenzie

<table>
<thead>
<tr>
<th>Program Tenured Faculty</th>
<th>Program Adjunct Faculty</th>
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<tbody>
<tr>
<td>J. Arias</td>
<td>R. Conn</td>
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<tr>
<td>B. Ibe</td>
<td>J. Fu</td>
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<tr>
<td>S. Morris</td>
<td>A. Gahrahmanpour</td>
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<tr>
<td></td>
<td>B. Gamble</td>
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<td></td>
<td>M. Kantz</td>
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<tr>
<td></td>
<td>L. Masoudipour</td>
</tr>
<tr>
<td></td>
<td>V. Schadev</td>
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<tr>
<td></td>
<td>S. Toque</td>
</tr>
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<td></td>
<td>R. Whiting</td>
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Program/Pathway Staff: A. Mendez – Chemistry Laboratory Technician
A. Vega – Division Secretary

Academic Dean: D. Humphreys

Vice-President of the Cluster: L. Rosas

One outside professional or alumni: Humberto Ortiz

Two students currently enrolled in the program/pathway under review:
Thomas Abbatiello
Yeun Chang
Pathway Mission

The Physical Sciences Pathway mission is to provide students with a foundation of science skills and competencies needed to satisfy a variety of degree and careers goals. Recognizing the diverse background of students, this foundation includes AA degree and transfer level courses that aim to contribute to workforce development and improvement. In all aspects of its mission, the pathway’s goal is to provide a supportive learning environment that imparts student success in analyzing, quantifying and developing critical thinking skills. The curriculum focuses on recognizing the interdependence between theory and application, enhancing it with the appropriate use of classroom technology.

Pathway Description and Overview

The Physical Sciences Pathway is designed to meet the needs of the diverse community college population interested in science and engineering as a career or to satisfy other academic program requirements such as AA degree, occupational and transfer programs requisites in allied health, engineering and pre-med. Courses offered in this pathway vary from introductory to college sophomore level, and are taught with a strong emphasis on laboratory hands-on experience. The pathway supports special students' populations by closely working with college support services such as Counseling, Financial Aid and Special Services programs.

The Physical Sciences Pathway meets the academic goals and strategies of the College by offering a flexible schedule of courses that accommodates morning and evening student populations. Scheduling of courses is based on student demand and course rotations that allow students to complete their transfer requirements in a timely manner.

Pathway Student Learning Outcomes and Assessment Results

Student will demonstrate increasing levels of mastery of the following outcomes throughout the physical sciences curriculum. Upon successful completion of the requirements for the Associate of Arts Degree, students will

- Interpret laboratory data and communicate quantitative and relational information
- Apply science formulas to solve problems that arise in the laboratory setting with and without the use of technology
- Communicate content information formally, using appropriate science notation and terminology
- Engage in logical and critical thinking

A. Pathway Curriculum – Appendix A page

B. Student Learning Outcomes

Upon successful completion of physical sciences courses, students will have a foundation in science needed to satisfy a variety of degree and careers goals.

Upon successful completion, with a grade of “C” or better, of Astronomy 001 and 005, or Chemistry 065, or Physical Sciences 001 and 014, or Physics 011, students will be able to meet the physical sciences requirement for the AA degree.

Upon successful completion of Chemistry 065 or Chemistry 066 with a grade of “C” or better, allied health majors will be able to meet the chemistry requirement for Microbiology and Physiology.
Upon successful completion, with a grade of “C” or better, of Astronomy 001 and 005, or Chemistry 065, 66, 101, 102, 111 or 112, or Physical Sciences 001 and 014, or Physics 011, 006, 007, 037, 038 or 039 with a grade of “C” or better, students will be able to meet physical sciences transfer requirements.

D. Student Learning Outcomes Assessment

Faculty in the Physical Sciences Pathway have always been involved in the assessment of their students, however recent ACCJC accreditation standards demand that student learning outcomes be assessed on an ongoing and systematic basis.

The pathway conducted its first formal assessment project in spring 2009 by defining and refining student learning outcomes and formulating a rubric to measure success. Course outlines of record for all courses went through extensive revision to ensure alignment of measurable learning outcomes.

The “findings and recommendations” derived from this project has produced important data for the pathway faculty to analyze success as well as failure.

During 2009-10 faculty in the Physical Sciences pathway wrote student learning outcomes for the following courses: Astronomy 001 and 005, Chemistry 040, 065, 066, 101, 102, 211, 212, Physics 006, 007, 011, 037, 038 and 039.

During 2009-10 faculty in the Physical Sciences pathway measured and analyzed student learning outcomes in the following courses: Astronomy 001 and 005, Chemistry 040, 065, 066, 101, 102, 211, 212, Physics 006, 007, 011, 037, 038 and 039.

Supporting Documentation – appendix C

E. Program Modifications

Chemistry Department faculty introduced Chemistry 066; a unified allied health major's chemistry course to replace the equivalent two course sequence Chemistry 055 and 070.

The Stars4Kids program was introduced to fulfill the pathway commitment to the college mission by providing an opportunity to 3rd and 5th grade teachers and students in the community to participate in a planetarium lecture and chemistry laboratory demonstration that relates to astronomical phenomena, such as why is the sky blue or red. The Stars 4 Kids program is designed to enhance the 3rd and 5th grade science curriculum standards on constellations, planets and seasons.

Chemistry faculty are currently exploring the feasibility of offering a biochemistry course for allied health majors.

Faculty are currently involved in the design phase of the future Science Complex which will house the life and physical science disciplines. The complex, being built as a signature campus landmark, will break ground in March 2010 with an expected completion date in 2012.

F. Based on the assessment of student learning outcomes at the course and program/pathway levels, areas that require modifications to improve performance and areas that are working well and should be expanded.

1. Areas for improvement:
   a. Laboratory sections with enrollment in excess of 36 students is a major challenge for faculty in the Physical Sciences Pathway. This situation is expected to improve once the new Science Complex comes on line, however faculty in this pathway realize that they cannot continue to increase the number of
students per section to meet college efficiency goals without compromising academic integrity and safety.

b. Astronomy is down to zero (0) tenured faculty, Chemistry is down to two (2), Physics is down to one (1) and there is no physics laboratory technician to support the physics discipline. The staffing level is well below the full-time faculty necessary to support course and program assessment efforts.

c. Faculty in this pathway should embrace instructional software provided by textbook publishers to increase student practice time and exposure to the subjects.

d. Faculty in this pathway should seek training in the use of web-based support services to develop websites and online/hybrid courses to remain competitive with other colleges offering similar courses.

e. Faculty in this pathway should complete the long overdue *Los Angeles Harbor College Chemistry 101 and 102 Laboratory Experiments* in order to reduce student laboratory manual costs.

2. Areas for reinforcement:

Following is a list of—short-term and long-term time goals:

   a. Continue discussion on essential skills  
      i. reinstate supplemental instruction
   b. Increase focus on professional development  
      i. observe each other’s classrooms  
      ii. participate in the peer evaluation process
   c. Increase and improve participation from discipline members  
      i. vary dates and times of department meetings; set calendar for semester  
      ii. establish course review committees
   d. Continue focus on assessment and commitment to implement findings and recommendations  
      i. build in time between projects for faculty to implement findings and recommendations  
      ii. tie this to professional development workshops where findings and practical classroom strategies for improvement are discussed
   e. Improve communication with part-time faculty  
      i. more workshops, orientations  
      ii. create department website  
      iii. create a mentoring program  
      iv. call for adjunct faculty to participate in course review committees
   f. Improve communication with feeder high school science teachers and transfer institution faculty  
      i. organize workshops and or orientations with feeder high school science teachers

**College Data for the Math-Physical Sciences and Technology Division**

Data collected for the Math-Physical Sciences and Technology Division was generated from the college FactBook. Data that relates exclusively to the Physical Sciences Pathway is highlighted.

1. **External SCAN—General**
   
   a. Demographics—Service Area will grow at a slower rate than State average.
   
   b. Demographics—Aging Population in the College’s Service Area
i. The number of High School Seniors in our Service Area will peak in 2010 and then decline.

ii. The number of 15-19 year olds will decline over the next 10 years.

c. Demographics—Percentage of Latinos and Asians in service area will increase, while percentage of Whites and African-Americans will decrease over the next 10 years.

d. Economic Downturn--For LAHC, Rising Unemployment is associated with Rising Enrollment.

e. Technology—Incoming students will be much more comfortable in the “virtual world” than previous generations.

(Source: 2008 LAHC Factbook)

II. External SCAN—Occupations in Physical Sciences Pathway.

Recognizing the diverse background of students, this pathway offers programs that aim to support the workforce development mission of the college.

Region Information

Demographics for engineering general and related fields indicate a steady 10% increase in job demand through the year 2017.

Region Information

.arbor - MSA

Description: LB, Sta Ana Metropolitan Area

Counties: Los Angeles, CA (6037), Orange, CA (6059)

Executive Summary

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<th>Selected Occupations</th>
<th>Education Level</th>
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<td>Aerospace engineering and operations technicians (SOC 17-3021)</td>
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<td>Civil engineering technicians (SOC 17-3022)</td>
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<td>Electro-mechanical technicians (SOC 17-3024)</td>
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<td>Mechanical engineering technicians (SOC 17-3027)</td>
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<td>Engineering technicians, except drafters, all other (SOC 17-3029)</td>
<td>Associate’s degree</td>
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<td>2007 Median Hourly Earnings</td>
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Occupational Change Summary

Executive Summary
Although the number of positions available in the areas of astronomy, chemistry, and physics are not overwhelming, demographics indicate a steady 16% to 19% increase in job demand through the year 2017. As part of the program review, the Physical Sciences Pathway will address present and future trends in mathematics, science and technology education as described in professional articles such as *Strengthening the Science and Math Pipeline*, an AASCU policy paper found at [http://www.aascu.org/policy_matters/pdf/v2n11.pdf](http://www.aascu.org/policy_matters/pdf/v2n11.pdf), and *Science and Mathematics*, found at [http://www.ohiostem.org/_data/user_docs/SAMEPAC_REPORT_FINAL_1-22.pdf](http://www.ohiostem.org/_data/user_docs/SAMEPAC_REPORT_FINAL_1-22.pdf)

III. Internal SCAN—Performance (Source: 2008 LAHC Factbook)
a. Recent personnel changes in the Physical Sciences Pathway include retirements of Physics Professor J. Fu and Physics Laboratory Technician R. Whiting in 2009, and the replacement of Chemistry Laboratory Technician R. Bumamglag who transferred to LA City College. The accompanying table summarizes the numerical relationship between adjunct and tenured faculty as budget and FTES targets fluctuate.

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b. Within class retention

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**Division Rates**

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<th>2006</th>
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During 2003 -2007 pathway class retention average through census equals or exceeds the division retention.

c. Within class successful completion rates

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**Division Rates**

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During 2003 -2007 the pathway class completion average exceeds the division completion rate.
IV. Internal SCAN—Efficiency


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During 2003-2007 the pathway class size average was less, equal or exceeded the division class size average.

b. Fall 2007 Detail (Source: BW i22report):

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<td><strong>16.5</strong></td>
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<td><strong>32.9</strong></td>
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This data supports the pathway’s alignment with college, contract and state efficiency goals.
c. Number of sections offered

<table>
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<tr>
<th></th>
<th>2003</th>
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<td>22</td>
<td>22</td>
<td>22</td>
<td>22</td>
<td>22</td>
</tr>
</tbody>
</table>

V. Changes in support personnel, classifications, and budget since last review or the previous three years:

Recent personnel changes in the Physical Sciences Pathway include retirements of professors J. Fu and C. Huff in 2009, and the transfer of the chemistry laboratory assistant to LACC.

Budget for equipment is 100% dependent on state block grant allocations. Relative to the present college budget conditions, classroom equipment and supply allocations are adequate.

VI. What areas of the program need strengthening?

**Instructional Assistance:** replacement of the physics laboratory technician is necessary to support the pathway's day to day operation. Laboratory equipment needs to be assembled for each session and the equipment must be maintained in operational condition.

**Schedule Coordination:** compatible life sciences, mathematics and physical sciences class schedules need to be created to allow students to move quickly through the curriculum.

**Facilities and resources:**
The long term goal for the Physical Sciences Pathway to find a building to call their own is about to be realized. The pathway has been programmed to be part of the Science Complex slated for completion in 2012. The Planetarium is scheduled to undergo renovation to be completed in 2011.

VII. What are the strengths of the program?

**Curriculum:** Courses are fully articulated and have been designed to meet CSU/UC transfer requirements.

**Partnerships:** the relationship between the Physical Sciences Pathway and the Harbor teacher Preparatory Academy attracts the largest number of students to the entry level physics course.

Physical Sciences 2008-09
VIII. Summarize program and unit plan modifications necessary for program improvement. Faculty continues to review textbooks and technology to assist students meet their instructional needs.

IX. What sources of data outside the college data set (if any) were taken into consideration in this part of the program review?


X. From what was determined from the review, what trends are indicated by the data?

a. The average class retention in mathematics courses through census week, from 2003 to 2007, was 74.4%, on a par with the California state average of 75%

b. The average mathematics course completion rate from 2003 to 2007, was 48.4% lower than the California state average of 53%

c. The average class size in mathematics courses from 2003 to 2007, was 41 exceeding both division and college average of 34.6 for the same time period.

XI. Describe any unique institutional goals the program satisfies:

The Physical Sciences pathway aligns with the institutional missions and strategic LACCD goals by offering an array of courses and resources to meet the needs of all college students such as:

1. Sophomore-level courses provide transfer requirements that parallel four year colleges and university curricula.
2. Classes are provided at a range of times to allow students course schedule flexibility.
3. The pathway strives to improve student retention and success by providing an effective learning environment for students, focusing on teaching excellence.
4. The pathway is actively engaged in implementing and assessing, SLOs for each of its courses, to ensure that course offerings are both effective and responsive to student needs, and ultimately ensuring improved student success and retention rates.
5. The pathway is actively engaged in mapping course SLO’s, PLO’s and ILO’s for the upcoming ACCJC accreditation report and visit.

XII. For each degree and certificate offered by the program, complete the following:

Presently the number of declared physical science majors is unknown.

One AS degree in Chemistry was awarded in 2004.

The pathway review did not focus on the gender breakdown of students. Faculty did not consider this to be a relevant issue at this time.

The pathway review did not focus on the ethnic breakdown of students. Faculty did not consider this to be a relevant issue at this time.
ASSOCIATE IN SCIENCE DEGREE IN CHEMISTRY

Major Code: 190500

The Associate in Science degree in Chemistry is designed for students who either intend to transfer to the UC or CSU as Chemistry majors, or who want to prepare for work as a Physical Sciences Laboratory Assistant. The AS degree consists of a core general education component, 30 units in the major, and additional elective units as needed to reach a **minimum of 60 units overall**.

All students are strongly advised to meet with a counselor for academic planning. Students who plan to transfer will need to consult a counselor and the Transfer Center for specific information regarding preparation for the intended major at the colleges/universities of choice, in order to facilitate a seamless transition.

Choose either option 1 or 2 or 3 for the General Education Core:

1. LAHC G.E. Plan A (30 units)
2. CSU G.E. Breadth -- including Health or Nutrition, P.E. and U.S. history or U.S. government (39-41 units)
3. IGETC -- including Health or Nutrition, P.E. and U.S. history or U.S. government (34-41 units)

Courses required for the major (30 units):

- Chemistry 101, General Chemistry 1 5 units
- Chemistry 102, General Chemistry II 5 units
- Chemistry 211, Organic Chemistry I 5 units
- Chemistry 212, Organic Chemistry II 5 units
- Mathematics 267, Calculus with analytic Geometry III 5 units
- Physics 039, Physics for Engineers III 5 units

ASSOCIATE IN SCIENCE DEGREE IN PHYSICS

Major Code: 190200

The Associate in Science degree in Physics is designed for students who either intend to transfer to the UC or CSU as Physics majors, or who want to prepare for work as a Physical Sciences Laboratory Assistant. The AS degree consists of a core general education component, 30 units in the major, and additional elective units as needed to reach a **minimum of 60 units overall**.

All students are strongly advised to meet with a counselor for academic planning. Students who plan to transfer will need to consult a counselor and the Transfer Center for specific information regarding preparation for the intended major at the colleges/universities of choice, in order to facilitate a seamless transition.

Choose either option 1 or 2 or 3 for the General Education Core:

1. LAHC G.E. Plan A (30 units)
2. CSU G.E. Breadth -- including Health or Nutrition, P.E. and U.S. history or U.S. government (39-41 units)
3. IGETC -- including Health or Nutrition, P.E. and U.S. history or U.S. government (34-41 units)

Courses required for the major (30 units):

- Chemistry 101, General Chemistry I 5 units
- Chemistry 102, General Chemistry II 5 units
- Mathematics 267, Calculus with analytic Geometry III 5 units
- Physics 037, Physics for Engineers I 5 units
- Physics 038, Physics for Engineers II 5 units
- Physics 039, Physics for Engineers III 5 units
COURSES OFFERED

ASTRONOMY

- ELEMENTARY ASTRONOMY (3) UC:CSU
Lecture 3 hours and 20 minutes per week.
Introduction to astronomical methods used to determine the nature of our universe. Course work included use of astronomical instruments in a laboratory setting. A planetarium is used to study star patterns and constellations.

5 - FUNDAMENTALS OF ASTRONOMY
LABORATORY (1) UC:CSU
Prerequisite: Completion of Astronomy 1 with a grade of “C” or better or concurrent enrollment.
Lecture 3 hours and 20 minutes per week.
Introduction to astronomical methods used to determine the nature of our universe. Course work included use of astronomical instruments in a laboratory setting. A planetarium is used to study star patterns and constellations.

CHEMISTRY

40 - BASIC CHEMISTRY (3) UC:CSU
Lecture 3 hours and 20 minutes per week.
Introductory chemistry course for non-science majors. Important chemical principles are illustrated using topics of current interest as illustrated in the media. Lectures are descriptive and conceptual using demonstration to emphasize chemical principles. Course meets physical science requirement without a laboratory.
* UC credit may be granted by petition after transfer.

65 - INTRODUCTORY GENERAL CHEMISTRY (4)
UC:CSU
Prerequisite: Completion of Mathematics 123C with a grade of “C” or better or equivalent, or concurrent enrollment in Mathematics 123C.
Lecture 3 hours and 20 minutes and laboratory 3 hours and 20 minutes per week.
Introductory course in the principles of inorganic chemistry utilizing elementary mathematics. It serves as a prerequisite for Chemistry 101. Not open for credit to students who have credit for Chemistry 55.

66 - ORGANIC AND BIOCHEMISTRY FOR ALLIED HEALTH MAJORS (5) UC:CSU
Prerequisite: Completion of Chemistry 065 and Mathematics 123C with grades of “C” or better.
Lecture 3 hours and 20 minutes and laboratory 6 hours and 40 minutes per week.
This course covers the organic and biochemical principles found in physiology and metabolic processes.

101 - GENERAL CHEMISTRY I (5) UC:CSU
Prerequisites: Completion of Chemistry 065 and Mathematics 123C or equivalent with grades of “C” or better.
Preparation: eligibility for English 101, or concurrent enrollment in English 028.
Lecture 3 hours and 20 minutes and laboratory/discussion 6 hours and 40 minutes per week.
First of two courses that introduces theory and laboratory topics dealing with general principles of chemistry. Chemical calculations are emphasized as well as laboratory precision and accuracy utilizing quantitative techniques.

102 - GENERAL CHEMISTRY II (5) UC:CSU
Prerequisite: Completion of Chemistry 101 with a grade of “C” or better.
Lecture 3 hours and 20 minutes and laboratory/discussion 6 hours and 40 minutes per week.
Second of two courses that introduces theory and laboratory topics.
dealing with general principles of chemistry. Chemical calculations are
emphasized as well as laboratory precision and accuracy utilizing quantitative

211 - ORGANIC CHEMISTRY FOR SCIENCE
MAJORS I (5) UC:CSU
Prerequisite: Completion of Chemistry 102 with a grade of “C” or better.
Lecture 3 hours and 20 minutes and laboratory 6 hours and 40
minutes per week.
Introductory organic chemistry course with emphasis on the structure,
stericchemistry and reactions of carbon compounds. Laboratory
work covers preparation and isolation of organic compounds with
determination of their physical and chemical properties.

2008-2010 General Catalog Course Descriptions * 115

212 - ORGANIC CHEMISTRY FOR SCIENCE
MAJORS II (5) UC:CSU
Prerequisite: Completion of Chemistry 211 with a grade of “C” or better.
Lecture 3 hours and 20 minutes and laboratory 6 hours and 40
minutes per week.
Chemistry 212 is a continuation of Chemistry 211 with additional
emphasis on mechanisms and stereochemistry. Special emphasis is
given to reactions and organic compounds of biological importance.
Significant laboratory time is devoted to the synthesis of complex
organic molecules.

PHYSICAL SCIENCE

1 - PHYSICAL SCIENCE I (3) UC:CSU
This course is not available for credit to students who have completed
college-level physics course.
Lecture 3 hours and 20 minutes per week.
The fields of astronomy, chemistry, geology and physics are presented
with an interdisciplinary approach. The fundamental concepts and
principles of each discipline are developed to allow the student the
opportunity to gain an understanding of both science and the scientist’s
viewpoint.

14 - PHYSICAL SCIENCE LABORATORY (1) UC:
CSU
Laboratory 2 hours and 10 minutes per week.
Experiments in the fields of astronomy, chemistry, geology and physics
are presented with an interdisciplinary approach. The fundamental
concepts and principles of each discipline are developed to allow the
student the opportunity to gain an understanding of both science and
the scientist’s viewpoint.

PHYSICS

6 - GENERAL PHYSICS I (4) UC:CSU
Prerequisite: Completion of Mathematics 240 with a grade of “C” or
better or concurrent enrollment.
Lecture 3 hours and 20 minutes and laboratory 3 hours and 20
minutes per week.
This is a basic course in mechanics, electricity, magnetism and an
introduction to modern physics.

7 - GENERAL PHYSICS II (4) UC:CSU
Prerequisite: Completion of Physics 006 with a grade of “C” or
better.
Lecture 3 hours and 20 minutes and laboratory 3 hours and 20
minutes per week.
This is a basic course in light, electricity, magnetism and an introduction
to modern physics.

Physical Sciences 2008-09
11 - INTRODUCTORY PHYSICS (4) UC:CSU
Prerequisite: Completion of Mathematics 123C with a grade of "C" or better. This course is not open for credit to students who have credit in Physics 006.
Lecture 3 hours and 20 minutes and laboratory 3 hours and 20 minutes per week.
Survey course in general physics for students who did not complete high school level physics. Topics include mechanics, heat, sound, light, electricity, magnetism and modern physics.

37 - PHYSICS FOR ENGINEERS AND SCIENTISTS I (5) UC:CSU
Prerequisites: Completion of Physics 011 and Mathematics 265 or equivalents with grades of "C" or better.
Lecture 4 hours and 25 minutes and laboratory 3 hours and 20 minutes per week.
First course in a series of physics with calculus for majors in chemistry, engineering, mathematics and physics. Topics include Newton's three laws of motion, energy, momentum, rotational motion, gravitation and thermodynamics.

38 - PHYSICS FOR ENGINEERS AND SCIENTISTS II (5) UC:CSU
Prerequisite: Completion of Physics 037 and Mathematics 265 or equivalents with grades of "C" or better.
Lecture 4 hours and 25 minutes and laboratory 3 hours and 20 minutes per week.
Second course in a series of physics with calculus for majors in chemistry, engineering, mathematics and physics. Topics include electric charge and current, Maxwell's four equations of electromagnetism, resistors, capacitors and inductors, the laws of reflection and refraction and optics.

- PHYSICS FOR ENGINEERS AND SCIENTISTS III (5) UC:CSU
Prerequisite: Completion of Physics 037 and Mathematics 265 with grades of "C" or better.
Lecture 4 hours and 25 minutes and laboratory 3 hours and 20 minutes per week.
Third course in a series of physics with calculus for majors in chemistry, engineering, mathematics and physics. Topics include wave phenomena, electromagnetic radiation, relativity, quantum mechanics and nuclear physics.
Los Angeles Community College District

COURSE OUTLINE
(Replaces PNCR and Course Outline)

Section I: BASIC COURSE INFORMATION

OUTLINE STATUS: Course Update

1. COLLEGE: Harbor

2. SUBJECT (DISCIPLINE) NAME: Chemistry
(40 characters, no abbreviations)

3. COURSE NUMBER: 102

4. COURSE TITLE: General Chemistry II

5. UNITS: 5

6. CATALOG COURSE DESCRIPTION -- Provide a description of the course, including an overview of the topics covered:

Second of two courses that introduces theory and laboratory topics dealing with general principles of chemistry. Chemical calculations are emphasized as well as laboratory precision and accuracy utilizing quantitative techniques.

7. CLASS SCHEDULE COURSE DESCRIPTION -- Provide a brief description of the course, including an overview of the topics covered:

Second of two courses that introduces theory and laboratory topics dealing with general principles of chemistry. Chemical calculations are emphasized as well as laboratory precision and accuracy utilizing quantitative techniques.

8. INITIAL COLLEGE APPROVAL DATE:

9. UPDATES (check all applicable boxes):

☒ Content Last Update:
☒ Objectives Last Update:
☐ College Specific Course Attributes/Data Elements Last Update:
☐ Districtwide Course Attributes/Data Elements Last Update:
☐ Other (describe) Last Update:

10. CLASS HOURS:

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<th>&quot;Standard Hours&quot; per Week (based on)</th>
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1 Underlined course attributes are the same for the course throughout the LACCD; all other course attributes are college specific.

Physical Sciences 2008-09
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<th>x 18)</th>
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Note: The Carnegie Rule and Title 5, section 55002 sets forth the following minimum standards: 1 unit = 1 hour lecture per week, 2 hours homework per week; OR 2 hours per week of lab with homework; OR 3 hours of lab per week without homework. The hours per week are based on a standard 18-week calendar. Lecture also includes discussion and/or demonstration hours, laboratory includes activity and/or studio hours.

11. PREREQUISITES, COREQUISITES, ADVISORIES ON RECOMMENDED PREPARATION, and LIMITATION ON ENROLLMENT

Note: The LACCD's Policy on Prerequisites, Corequisites and Advisories requires that the curriculum committee take a separate action verifying that a course's prerequisite, corequisite or advisory is an “appropriate and rational measure of a student's readiness to enter the course or program” and that the prerequisite, corequisite or advisory meets the level of scrutiny delineated in the policy.

Prerequisites: Yes (If Yes, complete information below)

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Corequisite: None (If Yes, complete information below)

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Advisories: None (If Yes, complete information below)

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12. REPETITIONS — Number of times course may be repeated for credit (three maximum): 0 (see: Section V, #9)

13. OTHER LIMITATIONS ON ENROLLMENT (see Title 5, Section 58106 and Board Rule 6803 for policy on allowable limitations. Other appropriate statutory or regulatory requirements may also apply):

N/A
Section II: COURSE CONTENT AND OBJECTIVES

1. COURSE CONTENT AND OBJECTIVES:

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<th>Hours per topic</th>
<th>COURSE OBJECTIVES - Lecture (if applicable):</th>
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<td>Chemical kinetics</td>
<td>9</td>
<td>Determine the rate law of a chemical reaction.</td>
</tr>
<tr>
<td>Equilibrium</td>
<td>9</td>
<td>Solve problems involving zero, first, and second order reactions.</td>
</tr>
<tr>
<td>Weak acid/base, slightly soluble salts</td>
<td>9</td>
<td>Determine equilibrium concentrations of products and reactants in a reversible chemical reaction.</td>
</tr>
<tr>
<td>Ionic equilibrium</td>
<td>3</td>
<td>Solve for the pH of a weak acid or weak base solution.</td>
</tr>
<tr>
<td>Thermodynamics and equilibrium</td>
<td>3</td>
<td>Calculate the voltage and energy in an electrochemical reaction.</td>
</tr>
<tr>
<td>Electrochemistry</td>
<td>6</td>
<td>Determine the crystal field splitting energy in a transition metal complex.</td>
</tr>
<tr>
<td>Transition Metal/Coordination Complexes</td>
<td>6</td>
<td>Predict the effects of a ligand upon coordination to a transition metal.</td>
</tr>
<tr>
<td>Nuclear chemistry</td>
<td>3</td>
<td>Complete nuclear decay reactions.</td>
</tr>
<tr>
<td>Main-Group elements</td>
<td>3</td>
<td>Solve problems in nuclear decay kinetics.</td>
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<tr>
<td>Organic Chemistry</td>
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<td>Illustrate the bonding properties of main-group elements.</td>
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<td>Separation and determination of unknowns metal ions in a mixture.</td>
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<tr>
<td>Quantitative Analyses</td>
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Physical Sciences 2008-09
<table>
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<th>Topic</th>
<th>Hours</th>
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<tr>
<td>Chemical kinetics</td>
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<tr>
<td>Weak acid/base equilibrium</td>
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<tr>
<td>Solubility</td>
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<td>Electrochemistry</td>
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<tr>
<td>Coordination complexes</td>
<td>12</td>
</tr>
<tr>
<td><strong>Total Lab hours</strong></td>
<td><strong>108</strong></td>
</tr>
</tbody>
</table>

*Total lecture and laboratory hours (which include the final examination) must equal totals on page 1.

2. **REQUIRED TEXTS:**

Provide a representative list of textbooks and other required reading; include author, title and date of publication:


3. **SUPPLEMENTARY READINGS:**

Reading assignments may include, but are not limited to the following:

| None |

4. **WRITING ASSIGNMENTS:**

Title 5, section 55002 requires grades to be "based on demonstrated proficiency in subject matter and the ability to demonstrate that proficiency, at least in part, by means of essays or, in courses where the curriculum committee deems
them to be appropriate, by problem solving exercises or skills demonstrations by students." Writing assignments in this course may include, but are not limited to the following:

**Short scientific article critiques such as The Other Half of the Brain. Scientific**

5. **REPRESENTATIVE OUTSIDE ASSIGNMENTS:**
   Out of class assignments may include, but are not limited to the following:

   **Write a short paper on the origins electrochemical cels**

6. **REPRESENTATIVE ASSIGNMENTS THAT DEMONSTRATE CRITICAL THINKING:**
   Title 5, section 55002(a) requires that a degree-applicable course have a level of rigor that includes "critical thinking and the understanding and application of concepts determined by the curriculum committee to be at college level". Critical thinking may include, but is not limited to analysis, synthesis, and evaluation. Provide examples of assignments that demonstrate critical thinking.

   **Compare and contrast the materials used in the production of the origins electrochemical cels**

7. **METHODS OF EVALUATION:**
   Title 5, section 55002 requires grades to be "based on demonstrated proficiency in subject matter and the ability to demonstrate that proficiency, at least in part, by means of essays, or, in courses where the curriculum committee deems them to be appropriate, by problem solving exercises or skills demonstrations by students." Methods of evaluation may include, but are not limited to the following (please note that evaluation should measure the outcomes detailed "Course Objectives" at the beginning of Section II):

   **Exams, quizzes, written homework and laboratory assignments**

8. **METHODS OF INSTRUCTION:**
   Methods of instruction may include, but are not limited to the following:
   - [x] Lecture
   - [x] Discussion
   - [x] Laboratory
   - [ ] Activity
   - [ ] Field Experience
   - [ ] Independent Study
   - [ ] Other (explain)

9. **SUPPLIES:**
   List the supplies the student must provide.

   **Notebook, writing utensil, textbook, scientific calculator.**

10. **COMPUTER COMPETENCY:**
    If applicable, explain how computer competency is included in the course.

    **Students will be asked to research a topic of interest using the Internet**
11. INFORMATION COMPETENCY:

Information competency is the ability to find, evaluate use, and communicate information in all its various formats. It combines aspects of library literacy, research methods and technological literacy. Information competency includes consideration of the ethical and legal implications and requires the application of both critical thinking and communications skills. If applicable, explain how information competency is included in the course.

Students will be asked to compare and contrast topics presented in class with information found on the Internet.

12. DIVERSITY:

If applicable, explain how diversity (e.g., cultural, gender, etc.) is included in the course.

N/A

13. SCANS COMPETENCIES (required for all courses with vocational TOP Codes; recommended for all courses):

SCANS (Secretary's Commission on Necessary Skills) are skills the Department of Labor identified, in consultation with business and industry leaders, which reflect the skills necessary for success in the workplace. Check the appropriate boxes to indicate the areas where students will develop the following skills (please note that all SCANS competencies do not apply to all courses):

RESOURCES

☑ Managing Time: Selecting relevant goal-related activities, ranking them in order of importance, allocating time to activities, and understanding, preparing and following schedules.

☐ Managing Money: Using or preparing budgets, including making cost and revenue forecasts; keeping detailed records to track budget performance, and making appropriate adjustments.

☐ Managing Material and Facility Resources: Acquiring, storing, allocating, and distributing materials, supplies, parts, equipment, space or final products in order to make the best use of them.

INTERPERSONAL

☐ Participating as Member of a Team: Working cooperatively with others and contributing to group’s efforts with ideas, suggestions and effort.

☐ Teaching Others New Skills: Helping others learn needed knowledge and skills.

☐ Exercising Leadership: Communicating thoughts, feelings, and ideas to justify a position, encouraging, persuading, convincing or otherwise motivating an individual or group, including responsibly challenging existing procedures, policies or authority.

☐ Negotiating: Working toward agreement that may involve exchanging specific resources or resolving divergent interests.

☑ Working with Cultural Diversity: Working well with men and women and with people from a variety of ethnic, social, or educational backgrounds.
INFORMATION

- **Acquiring and Evaluating Information:** Identifying a need for data, obtaining the data from existing sources or creating them, and evaluating their relevance and accuracy.

- **Organizing and Maintaining Information:** Organizing, processing and maintaining written or computerized records and other forms of information in a systematic fashion.

- **Interpreting and Communicating Information:** Selecting and analyzing information and communicating the results of others, using oral, written, graphic, pictorial, or multimedia methods.

- **Using Computers to Process Information:** Employing computers to acquire, organize, analyze and communicate information.

SYSTEMS

- **Understanding Systems:** Knowing how social, organizational and technological systems work and operating effectively with them.

- **Monitoring and Correcting Performance:** Distinguishing trends, predicting impacts of actions on system operations, diagnosing deviations in the functioning of a system/organization, and taking necessary steps to correct performance.

- **Improving or Designing Systems:** Making suggestions to modify existing systems in order to improve the quality of products or services and developing new or alternative systems.

TECHNOLOGY

- **Selecting Technology:** Judging which sets of procedures, tools or machines, including computers and their programs, will produce the desired results.

- **Applying Technology to Tasks:** Understanding overall intent and proper procedures for setting up and operating machines, including computers and their reprogramming systems.

- **Maintaining and Troubleshooting Equipment:** Preventing, identifying, or solving problems with equipment, including computers and other technologies.
Section III: Relationship to College Programs

1. This course will be an approved requirement for an approved associate degree or certificate program: Yes

   a. If yes, the course will be a program requirement portion of the “approved program” listed on the State Chancellor’s Inventory of Approved Programs (approved programs can be found on the State Chancellor’s Office website at http://misweb.cccco.edu/esed/webproginv/prod/invmenu.htm

   Associate of Science Degree in Chemistry

   NOTE: In order for a course to be approved as a requirement for an associate degree or certificate program, the program must be listed on the State Chancellor’s Office Inventory of Approved Programs AND the course must be listed in the college catalog as either a requirement or an elective for the program. If course is not part of an approved program at the college adopting the course, it will be considered to be a “stand-alone” course, and is subject to the State Chancellor’s approval criteria. The college must complete and submit the Chancellor’s Office “APPLICATION FOR APPROVAL OF CREDIT” form. Certain courses are granted “blanket approval” by the State Chancellor’s Office and do not require separate approval. See the Chancellor’s Office Program and Course Approval Handbook for details. LACCD Skills Certificates are not State approved programs and are not listed on the Chancellor’s Office Inventory of Approved Programs.

2. General Education Requirements for the Associate Degree Status:

   a. Area requested: None Approval date:

      If applicable, provide an explanation of how the course meets the General Education parameters for one of the five general education areas – Natural Sciences, Social and Behavioral Sciences, Humanities, Language and Rationality, Health and Physical Education -- contained in Board Rule 6201.14 - General Education Requirements. http://marlin.laccd.edu/district/BoardRules_AdmRegs/boardrules.htm

   a. 2nd Area requested: None Approval date:

      If applicable, provide an explanation of how the course meets General Education parameters for an additional general education area – Natural Sciences, Social and Behavioral Sciences, Humanities, Language and Rationality, Health and Physical Education -- contained in Board Rule 6201.14 - General Education Requirements. http://marlin.laccd.edu/district/BoardRules_AdmRegs/boardrules.htm

Physical Sciences 2008-09
Section IV: ARTICULATION INFORMATION

(Complete in consultation with College Articulation Officer)

1. TRANSFER STATUS:
   a. Transferable to the University of California: Yes
   b. UC approval date: 2008
   c. Transferable to the California State University: Yes
   d. College approval date: 2008

2. GENERAL EDUCATION FOR TRANSFER:

   IGETC Certification:
   
   a. Area requested: 8-A: Physical Sciences
   b. Date requested:  
   c. IGETC approval date: 2008

   If applicable, provide an explanation of how the course meets the appropriate General Education parameters, as defined in IGETC Certification Guidelines.

   CSU Certification:

   a. Area requested: 8-1: Physical Science
   b. Date requested:  
   c. CSU approval date: 2008

   If applicable, provide an explanation of how the course meets the appropriate General Education parameters, as defined in CSU Certification Guidelines.

3. MAJOR REQUIREMENT FOR TRANSFER – Will this course be articulated to meet lower division major requirements?  NO

   List college/university and the majors:

<table>
<thead>
<tr>
<th>College/University</th>
<th>Major(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

   CAN NUMBER:     CAN SEQUENCE NUMBER:

   CAN Approval -- Date requested:  
   Date approved:               

   Physical Sciences 2008-09  26
Section V: SUPPLEMENTAL COURSE INFORMATION

1. DEPARTMENT/DIVISION NAME: Chemistry

2. DEPARTMENT/DIVISION CODE: 45

3. SUBJECT CODE -- 3 characters, assigned by District Office: 123 (existing subject codes are available on the LACCD website at http://www.laccd.edu/curriculum/directory-programs-courses/index.htm

4. SUBJECT ABBREVIATION -- 7 characters, assigned by District Office: Chem

5. SPC CODE -- 3 characters, assigned by District Office: 766

6. ABBREVIATION FOR TRANSCRIPTS -- 20 characters, assigned by District Office: Chem

7. DEGREE CREDIT: Indicate whether the course meet the "standards for approval" for degree credit course set forth in Title 5, section 55002(a)(2), which requires the course to have a degree of intensity, difficulty, and vocabulary that the curriculum committee has determined to be at the college level:
   This course is Degree Applicable

8. CREDIT/NO CREDIT GRADING: No

9. REPETITIONS -- Number of times course may be repeated for credit (three maximum): 0

   How does the repetition of this course meet Title 5, section 58161 requirements? A course may be repeatable when, "course content differs each time it is offered, and that the student who repeats it is gaining an expanded educational experience for one of the following reasons: (A) Skills or proficiencies are enhanced by supervised repetition and practice within class periods; or (B) Active participatory experience in individual study or group assignments is the basic means by which learning objectives are obtained."

10. PRIOR TO TRANSFERABLE LEVEL -- This course attribute applies to English, writing, ESL, and reading and mathematics courses ONLY. If applicable, indicate how many levels below the transferable level this course should be placed: Not applicable

11. CREDIT BASIC SKILLS -- Title 5, section 55502(d) defines basic skills as "courses in reading, writing, computation, and English as a Second Language, which are designated as non-degree credit courses pursuant to Title 5, section 55002(b)." No If Yes, course must be non-degree applicable.

12. CROSS REFERENCE -- Is this course listed as equivalent in content to existing College/District courses in another discipline? No

   If Yes, list courses (documentation of cross-discipline agreement must be provided):
13. **COURSE SPECIFICALLY DESIGNED FOR STUDENTS WITH DISABILITIES** -- Title 5, section 56029 allows a course to be repeatable when continuing success of the students with disabilities is dependent on additional repetitions of a specific class. Is this course designated as an "approved special class" for students with disabilities? **No**

If yes, provide an explanation of how this course meets the requirements of Title 5, section 56029.

14. **COOPERATIVE EDUCATION STATUS** -- Title 5, section 55252 allows for two types of Cooperative Education: 1) General Work Experience Education -- i.e., supervised employment, which is intended to assist students in acquiring desirable work habits, attitudes and career awareness, which need not be related to the students' educational goals; or 2) Occupational Work Experience Education -- i.e., supervised employment, extending classroom based occupational learning at an on-the-job learning station, which is related to the students' educational or occupational goal. Is this course part of the college's approved cooperative work experience education program? **No**

15. **COURSE CLASSIFICATION: Liberal Arts Sciences**

   Note: A course's Classification, TOP Code and SAM code must be aligned -- e.g., Courses with an "Occupational" Course Classification must have an "Occupational" TOP Code and a SAM Code of A, B, C, or D; courses that do not have an "Occupational" Course Classification cannot have an Occupational TOP Code and must have an "E" SAM Code. Courses coded as "basic skills" in #11 should be coded "Adult and Secondary Basic Skills."

   **TOP CODE** -- (6 digits XXXX.xx) 1905.00

   Course content should match discipline description in Taxonomy of Programs found at www.cccco.edu/cccco/esed/curric/curriculum.htm.

17. **SAM CODE (Student Accountability Model): E - Non-Occupational**

   SAM Codes (see CCC Chancellor's Office Student Accountability Model Operations Manual, 1984) should be assigned as follows:

   **Priority "A" -- Apprenticeship:** Courses designed for an indentured apprentice must have the approval of the State of California, Department of Industrial Relations Department, Division of Apprenticeship Standards.

   **Priority "B" -- Advanced Occupational:** Courses taken by students in the advanced stages of their occupational programs. Courses should be offered in one specific occupational area only. Priority letter "B" should be assigned sparingly; in most cases, no more than two courses in any one program should be labeled "B." B-level courses must have Priority "C" prerequisites in the same program area.

   **Priority "C" -- Clearly Occupational:** Courses generally taken by students in the middle stages of their programs should have a difficulty level sufficient to detract "drop-ins." Courses may be offered in several occupational programs within a broad area. The "C" priority, however, should also be used for courses within a specific program area when the criteria for "B" classification are not met. A "C"-level course should provide the student with entry-level job skills.

   **Priority "D" -- Possibly Occupational:** "D" courses are those taken by students in the beginning stages of their occupational programs. The "D" priority can also be used for service (or survey) courses for other occupational programs.

   **Priority "E" -- Non-occupational.**
SECTION VI: APPROVAL STATUS

1. APPROVAL STATUS:

   a. ☐ New Course          . Board Approval Date:        . Effective Semester:
   b. ☐ Addition of Existing District Course         . College Approval Date:        . Effective Semester:
   c. ☐ Course Change*         . College Approval Date:        . Effective Semester:
   d. ☑ Outline Update         . College Approval Date:        

* Changes to a course require the completion of a "Course Change Request" form and approval by the college’s Curriculum Committee. In some cases districtwide approval is also required; see, Administrative Regulation E-65, section 3(c) for details.

SECTION VII: APPROVAL INFORMATION FOR NEW OR ADDED COURSES
(complete in consultation with Department Chair and the appropriate Academic Administrator)

1. ORIGINATOR: Lauren McKenzie

2. DEPARTMENT: Chemistry

3. IF THIS IS A NEW COURSE, INDICATE HOW THE COLLEGE PLANS TO MEET THE EXPENSE OF THIS COURSE:

   ☐ By additional funds. Describe:

   ☐ By deleting courses from the college catalog and course database. List specific courses to be deleted:

   ☐ By deleting sections of existing courses. List courses and number of sections to be deleted:

   First year:                Second year:              Third year:

   ☐ By rotating sections of existing courses. List courses and number of sections to be rotated, as well as the semesters in which they will be offered:

4. IMPACT -- Will this course directly impact other course offerings and/or associate degree or certificate programs on campus?
   ☐ No  (If yes, briefly explain how)
5. **METHOD OF SUPPORT** -- Indicate how the college plans to support the proposed course:

Additional staff -- List additional staff needed:

Classroom -- List classroom type needed:

- **Regular classroom and chemistry laboratory**

Equipment -- List new equipment needed and indicate funding source for any new equipment:

- **Equipment needed for demonstrations and laboratories is adequate**

Supplies - List supplies and indicate dollar value:

- **Supplies needed for laboratories is adequate**

Library/Learning Resources - The course initiator shall consult with the College Librarian and review the college library, book, periodical, and electronic resource collections relevant to this course. List additional titles and resources to be considered for purchase as funding permits:

- **Titles needed for the course are adequate**
CERTIFICATION AND RECOMMENDATION

☒ This course meets Title 5 requirements for Associate Degree applicable college credit towards an Associate of Arts Degree.

☐ This course meets Title 5 requirements but does not satisfy the requirements for an Associate Degree applicable course.

We certify that the information and answers above properly represent this course.

_________________________  __________________________
Originator                      Date

_________________________  __________________________
Department/Cluster Chairperson  Date

_________________________  __________________________
Articulation Officer           Date

_________________________  __________________________
Librarian                      Date

_________________________  __________________________
Dean (if applicable)           Date

_________________________  __________________________
Curriculum Committee Chairperson  Date

_________________________  __________________________
Academic Senate President       Date

_________________________  __________________________
Vice President, Academic Affairs  Date

_________________________  __________________________
College President               Date

Physical Sciences 2008-09
DEPARTMENT/DIVISION NAME: Chemistry/Math-Phy-Sci and Technology

DEPARTMENT/DIVISION CODE: Chemistry

SUBJECT (DISCIPLINE) NAME: Chemistry

SUBJECT CODE -- 3 characters, assigned by District Office: 123

SUBJECT ABBREVIATION -- 7 characters, assigned by District Office: Chem

COURSE TITLE: General Chemistry II

COURSE NUMBER: 102

UNITS: 5

CLASS HOURS:

<table>
<thead>
<tr>
<th></th>
<th>Hours per week (based on 18 weeks)</th>
<th>Total Hours per term (hrs per week x 18)</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture</td>
<td>3</td>
<td>54</td>
<td>3</td>
</tr>
<tr>
<td>Lab/activity (w/ homework)</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Lab/activity (w/o homework)</td>
<td>6</td>
<td>108</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>3</td>
<td>162</td>
<td>5</td>
</tr>
</tbody>
</table>

DEGREE CREDIT: Indicate whether the course meet the "standards for approval" for degree credit course set forth in Title 5, section 55002(a)(2), which requires the course to have a degree of intensity, difficulty, and vocabulary that the curriculum committee has determined to be at the college level:

This course is Degree Applicable.

THIS COURSE WILL BE AN APPROVED REQUIREMENT FOR AN APPROVED ASSOCIATE DEGREE OR CERTIFICATE PROGRAM: Associate in Science in Chemistry

If yes, the course will be a program requirement portion of the "approved program" listed on the State Chancellor's Inventory of Approved Programs (approved programs can be found on the State Chancellor's Office website at

GENERAL EDUCATION FOR TRANSFER: No

Area requested: None Approval date:
GENERAL EDUCATION REQUIREMENTS FOR THE ASSOCIATE DEGREE STATUS:
- a requested: None  Approval date:
- Area requested: None  Approval date:

TRANSFER STATUS:
- Transferable to the University of California: UC approval date:
- Transferable to the California State University: College approval date:

GENERAL EDUCATION FOR TRANSFER: No

IGETC
- Area requested: None
- Date requested:
- IGETC approval date:

CSU CERTIFICATION Yes
- Date requested:
- CSU approval date: 2008

ABBREVIATION FOR TRANSCRIPTS -- 20 characters, assigned by District Office: Chem

COURSE CLASSIFICATION: Liberal Arts Sciences

P CODE -- (6 digits XXXX.XX) 1905.00

SAM CODE (Student Accountability Model): E - Non-Occupational

PREREQUISITES, COREQUISITES, ADVISORIES ON RECOMMENDED PREPARATION, and LIMITATION ON ENROLLMENT
- Prerequisites: Yes  (If Yes, complete information below)
- Corequisite: None  (If Yes, complete information below)

CREDIT/NO CREDIT GRADING:

REPETITIONS -- Number of times course may be repeated for credit (three maximum): 0

CROSS REFERENCE -- Is this course listed as equivalent in content to existing College/District courses in another discipline? No

CREDIT BASIC SKILLS -- Title 5, section 55502(d) defines basic skills as "courses in reading, writing, computation, and English as a Second Language, which are designated as non-degree credit courses pursuant to Title 5, section 5502(b)." No if Yes, course must be non-degree applicable

COURSE SPECIFICALLY DESIGNED FOR STUDENTS WITH DISABILITIES -- Title 5, section 55029 allows a course to be repeatable when continuing success of the students with disabilities is dependent on additional repetitions of a specific class. Is this course designated as an "approved special class" for students with disabilities? No

APPROVAL STATUS:
New Course

Board Approval Date:
Effective Semester:

Addition of Existing District Course

College Approval Date:

**COOPERATIVE EDUCATION STATUS** — Title 5, section 55252 allows for two types of Cooperative Education: 1) General Work Experience Education — i.e., supervised employment, which is intended to assist students in acquiring desirable work habits, attitudes and career awareness, which need not be related to the students' educational goals; or 2) Occupational Work Experience Education — i.e., supervised employment, extending classroom based occupational learning at an on-the-job learning station, which is related to the students' educational or occupational goal. Is this course part of the college's approved cooperative work experience education program? No

**CATALOG COURSE DESCRIPTION** — Provide a description of the course, including an overview of the topics covered:

Second of two courses that introduces theory and laboratory topics dealing with general principles of chemistry. Chemical calculations are emphasized as well as laboratory precision and accuracy utilizing quantitative techniques.

**CLASS SCHEDULE COURSE DESCRIPTION** — Provide a brief description of the course, including an overview of the topics covered:

Second of two courses that introduces theory and laboratory topics dealing with general principles of chemistry. Chemical calculations are emphasized as well as laboratory precision and accuracy utilizing quantitative techniques.

**SPC CODE** — 3 characters, assigned by District Office: 766
LA HARBOR COLLEGE  
Student Learning Outcomes (SLOs) Assessment Report  
Course Assessment  

Division: Math Physical Science  
Discipline/Program: Chemistry  

Course Number and Name: CHEM 102 General Chemistry II  

Program Contact Person: ___________________________ Phone: ___________________________  

Reviewed by: ___________________________, Academic Dean Date: ___________________________  

Attach additional pages as necessary.  

<table>
<thead>
<tr>
<th>Institutional Mission and Goals</th>
<th>Course Intended Outcomes</th>
<th>Means of Assessment and Criteria for Success</th>
<th>Summary of Data Collected</th>
<th>Use of Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>1) Solve problems in chemical kinetics.</td>
<td>Means: On a comprehensive multiple choice exam, the students will solve problems from the lecture topics 1 through 8 as listed in the course outline.</td>
<td>Criteria: 70% of the students will score 50% or greater on the assessment exam.</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>2) Solve problems in chemical equilibrium.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>3) Solve acid-base equilibrium problems.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>4) Display knowledge of thermodynamics and equilibrium.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>5) Solve problems in electrochemistry.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>6) Demonstrate knowledge of transition metal chemistry.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>7) Solve problems in nuclear chemistry.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>8) Show a basic understanding of organic chemistry.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>9) Interpret a chemical laboratory procedure.</td>
<td>Means: Summarize an experimental procedure into a flow-chart which will include a clearly stated objective for the experiment.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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35
<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Criteria: 90% of the students will score 80% or higher on a department analytic rubric.</th>
</tr>
</thead>
</table>
| 1 | 10) Compose a scientific report. | Means: On a word processor type a scientific report from collected laboratory data.  
Criteria: 70% of the students will score 70% or higher on a department analytic rubric. |
| 2 | 11) Collect, organize and analyze laboratory data. | Means: The organization of data/observations into data tables which include proper labels and units.  
Criteria: 90% of the students will score 80% or higher on a department analytic rubric. |
| 2 | 12) Demonstrate proper laboratory skills. | Means: Solve for an unknown sample by qualitative or quantitative techniques.  
Criteria: 70% of the students will score 70% or higher on a department analytic rubric. |
CHEMISTRY 102 GENERAL SYLLABUS—SPRING 2008

Instructor: Joachim Arias, Ph.D.
Phone: 310-233-4512 leave message with Angie Vega in Division office, Email: ariasj@lahc.edu
Office location: Tech 2-Office Hours: TTh, 9:00AM - 9:25 AM and other times by appointment.
Lecture: 7:50 AM - 9:05 MW, TR 101
Discussion: 9:05 AM-11:00 MW PH 102
Laboratory: 12:20 PM - 1:45 MW PH 102
5 unit course UC-CSU Transferable
Prerequisites: Completion of Chemistry 101 with grade of “C” or better.

Course Goal and Objectives: The goal for this course is to understand and communicate the principles of general college chemistry. Students will build upon concepts and skills that were developed in Chemistry 101. Instructional and learning activities will be reinforced during the laboratory period. Experiments will be performed that will emphasize critical observation and thinking, chemical calculations, precision and accuracy in performing measurements, and qualitative methods of chemical analysis.

Required Course Materials:
b) The LAHC Laboratory Manual and supplementary readings booklet will be provided.
c) Hardcover permanently bound notebook for laboratory calculations and reports.
d) Calculator with exponential and logarithmic capability. Calculators with significant memory are prohibited during exams. This prohibition applies to mobile phone, organizer, PDA and programmable calculators. Check with the instructor if you are not sure about the acceptability of your calculator.
e) Purchase an American combination padlock at the Seahawk Center bookstore (other padlocks are not acceptable) by the second lab meeting. One shared lock is needed per lab group.

Safety goggles.

Grading (evaluation)

<table>
<thead>
<tr>
<th></th>
<th>Points Earned</th>
<th>Percent</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Four exams (100 points each)</td>
<td>= 400 points</td>
<td>720-800</td>
<td>90-100</td>
</tr>
<tr>
<td>Final Exam (150 points)</td>
<td>= 150 points</td>
<td>640-719</td>
<td>80-89</td>
</tr>
<tr>
<td>Quizzes &amp; Assignments</td>
<td>= 100 points</td>
<td>536-639</td>
<td>67-79</td>
</tr>
<tr>
<td>Lab Experiments &amp; Reports</td>
<td>= 150 points</td>
<td>400-535</td>
<td>50-66</td>
</tr>
<tr>
<td>Total points (possible)</td>
<td>= 800 points</td>
<td>&lt;400</td>
<td>&lt;50</td>
</tr>
</tbody>
</table>

If you miss an exam due to an illness or emergency, you must provide a medical excuse or written verification. Your score for the (one) missed exam will be 90% of the next exam score. No makeup exams will be given. For each exam, you will have a periodic table-data sheet. You will have 90 minutes to complete each exam. You must take the final exam on the date given in the Schedule. Quizzes will be given both unannounced and announced. No makeup quizzes will be given.

Course Structure
Lecture: Three hours per week TTh for 1-1/2 hours each day. Lecture may be extended during the Discussion. The attached weekly schedule gives the lecture topic with chapters, sections and homework from the text. The schedule also gives the dates for the four exams and comprehensive final exam, as well as other reminder dates.

Independent Study: The questions and problems on the attached schedule are assignments. They are expected to be done in a timely fashion. These assignments may be collected. While they will not be graded, students may be asked to discuss their methods and solutions to selected questions and problems. Questions on quizzes and exams will often be based upon or similar to those assigned.

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Laboratory and Discussion: Three hours per day TTh, following the lecture. Students usually will work within a small group and the instructor may change the group composition periodically. The attached schedule gives the assignment number and name. Students are expected to prepare for each lab before coming to the lab. All laboratory work must be completed on the day the lab is assigned, unless told otherwise. The lab notebook must be initialed by the instructor before you leave the lab. Check your calculations carefully before leaving the lab. Hand in the answer to the lab problem of the day, if one is assigned, before leaving the lab. Follow the same format that was used in Chemistry 101 for writing up lab reports (see the hand out). Complete your lab report before the next lab meeting. Additional instructions and safety precautions will be given in the lab for the experiments to be performed. Lab techniques will be demonstrated when appropriate. Attendance is required for each lab session. There will be no make ups for missed labs. Lab reports will be graded. Total possible score for all lab reports is 150 points. A passing score (100 points) must be earned in the laboratory to pass Chem. 102.

The points earned on your labs are based on the following criteria:

a) How prepared you were to do the lab work and how well you followed the experimental procedure; b) Your presence, participation and contribution to the success of the experiment (If you are late or not present during the discussion and/or lab, points proportional to the time or work missed may be deducted); c) how well you handled the data from the experimental results you obtained (not necessarily your experimental results); d) how well the lab report was written (format, clarity, legibility and neatness of your lab report); e) your written lab work must be original: If a student’s or a group’s experimental data, interpretation and conclusions are identical to those of another student or lab group I will suspect academic dishonesty. Those individuals or groups will receive scores of zero for that particular lab; f) the questions and/or problems accompanying the lab experiment. The instructor will score your notebooks periodically so lab notebooks must be up to date when notebooks are due for evaluation and grading.

PROCEDURES AND GUIDELINES FOR SUCCESS IN CHEMISTRY 102

Attendance – Class attendance is expected. Be prompt. Being on time is a matter of personal responsibility and courtesy to others. Excessive absences and/or tardiness may result in a lower grade, or to being dropped from the class. Let me know by phone or email message before class if you must be absent or late for a legitimate reason. If you arrive to lab after my presentation of detailed instructions and safety precautions you may be excluded from the lab that day.

Classroom and Laboratory Disruptions - All personal electronic devices such as mobile phones, radio phones, radios and pagers must be turned off during lecture and laboratory. Exceptions, with instructor approval, will be made for on-call emergency personnel and for students who require college-approved accommodations. Sound from a phone or pager is a personal distraction as well as a classroom disruption. If you are not willing to accept this policy, please do not take this class. Students may be excluded from this course for disruptions and other violations of student conduct as described on pp 6-8 of the 2002-2004 LAHC Los Angeles Community College General Catalog.

Exams and Quizzes - Quiz and exam questions will involve material covered both in lecture and lab. It is your responsibility to be present and on time for all exams and quizzes. No extra time will be given owing to unapproved late arrival. Repeat: There will be no make-up exams or quizzes.

Grades are earned, not negotiated, appointed or gifted. It is up to you to learn the material fluently enough to earn passing grades on quizzes, exams, labs, and on the final. Plan to spend no fewer than 10 hours per week on this course—in addition to time spent in class. Study effectively: read the text chapter before lecture. Take good lecture notes because some information given by the instructor may not be found in the text. Rewrite your lecture notes to look for holes or areas that are not yet clear. Regularly review difficult ideas in the text, your notes, and your lab notebook. Do all the assigned problems, and then some more. Independently answer the assigned questions and solve the assigned problems. If you do not, do not expect to do well in Chemistry 102. This is a guarantee! Use flashcards to help memorize terms and mulas. Working with study partners or groups is especially recommended!
**Success is a matter of preparation and repetition.** Make use of all possible learning resources - your texts, the instructor (in class and during office hours), internet chemistry tutorials, human tutors if necessary, and especially your fellow students who earn high grades. Always remember that everything in Chemistry builds on itself, and the final exam is cumulative and comprehensive, so don’t let any gaps develop!

<table>
<thead>
<tr>
<th>Time Allocated (in hours)</th>
<th>Topic or Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 hrs - lab</td>
<td>Laboratory: Simplest formula paper lab</td>
</tr>
<tr>
<td>3 hrs - lec</td>
<td>Chemical Bonding: Bond polarity, covalent and ionic bonding Lewis structures, molecular geometry, net molecular dipoles.</td>
</tr>
<tr>
<td>6 hrs - lab</td>
<td>Laboratory: Use of molecular models</td>
</tr>
<tr>
<td>12 hrs - lec</td>
<td>Stoichiometry: moles, simplest &amp; molecular formulas balancing equations, reaction qualities, limiting reactants, analysis of mixtures, percent yield.</td>
</tr>
<tr>
<td>24 hrs - lab</td>
<td>Laboratory: Limiting reactants. Estimation of Avogadro’s #. Stoichiometry paper lab</td>
</tr>
<tr>
<td>3 hrs - lec</td>
<td>Gases: ideal gas law, partial pressures, gas stoichiometry, kinetic molecular theory, non-ideal behavior.</td>
</tr>
<tr>
<td>6 hrs - lab</td>
<td>Laboratory: Molar mass by vapor density. Analysis of a nitrite solution</td>
</tr>
<tr>
<td>7.5 hrs - lec</td>
<td>Changes of State: solid state, crystal structure, liquid state, heating &amp; cooling curves, phase diagrams, heat exchange.</td>
</tr>
<tr>
<td>1.5 hrs - lab</td>
<td>Laboratory: Study of crystalline solids. Calorimetry</td>
</tr>
<tr>
<td>5 hrs - lec</td>
<td>Colligative properties of solutions: Mole fraction, molality, molarity, vapor pressure, freezing and boiling point changes.</td>
</tr>
<tr>
<td>6 hrs - lab</td>
<td>Laboratory: Molar mass determination by freezing point. Freezing point of solutions</td>
</tr>
<tr>
<td>4.5 hrs - lec</td>
<td>Solution Stoichiometry: aqueous reactions, acid-base titration, normality.</td>
</tr>
<tr>
<td>9 hrs - lab</td>
<td>Laboratory: Acid base titrations</td>
</tr>
<tr>
<td>4.5 hrs - lec</td>
<td>Chemical Equilibrium: gaseous equilibrium calculations, heterogeneous equilibria, LeChatelier’s Principle.</td>
</tr>
<tr>
<td>9 hrs - lab</td>
<td>Laboratory: Equilibrium paper lab</td>
</tr>
<tr>
<td>3 hrs - lec</td>
<td>Aqueous equilibrium: introduction to weak acid equilibria, ionization of water, pH.</td>
</tr>
<tr>
<td>6 hrs - lab</td>
<td>Laboratory: Aqueous equilibrium paper lab</td>
</tr>
<tr>
<td>6 hrs - lec</td>
<td>Oxidation-reduction: oxidation numbers, balancing redox equations reactions, redox equivalents, redox titration.</td>
</tr>
<tr>
<td>12 hrs - lab</td>
<td>Laboratory: Investigation of some redox reactions. Oxidation-reduction titrations</td>
</tr>
</tbody>
</table>
Los Angeles Harbor College launched its Stars 4 Kids program on Friday, October 5, 2007. Two 5th grade classes (about 50 students) walked with their teachers, B. Louie and P. Correa, to the college from Hawaiian Avenue School to take part in an introductory Astronomy program led by Harbor College instructor, Ali Ghahe Re manpour and Joachim Arias. It is held in the Planetarium—a distinctive building that was constructed in the 1960’s. Activities also include a chemistry demonstration that relates to astronomical phenomena, such as why the sky is blue or red and a short visit to the campus TV studio. Grade school teachers and students are escorted around campus by docents from the Harbor Teacher Preparatory Academy which is housed on the campus.

In addition to Hawaiian Avenue, 3rd and 5th grade students from Fries, Lomita Magnet, Crestwood, Caroldale, Denker, LaSalle, Leland, Lomita Magnet and Point Fermin elementary schools travelled to L.A. Harbor College to participate in this program. Stars 4 Kids program is designed to enhance the 3rd and 5th grade science curriculum on constellations, planets and seasons. Groups are limited to 60 students due to the capacity of the planetarium.

It is hoped that students will not only become interested in the sciences, but also have a pleasant college campus experience, hopefully returning someday as a Harbor college student.

Our community partners contributing to the program (by providing busses) are: Valero, Watson Land Company, and the QED Project under Eunice Krinsky at CSU Dominguez Hills.

For more information, contact Math/Physical Science and Technology Division Chairman, Lauren McKenzie, Division Secretary, Angie Vega, at 310 233-4501.
<table>
<thead>
<tr>
<th>DIVISION PRIORITY AND SLO'S</th>
<th>COLLEGE STRATEGY AND SLO'S</th>
<th>OBJECTIVES</th>
<th>ACTIVITIES/TASKS</th>
<th>RESOURCES</th>
<th>COST</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-16</td>
<td></td>
<td><strong>DIVISION PRIORITIES</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1, A 7.3, 7.4</td>
<td></td>
<td>To facilitate student learning via qualified faculty and staff</td>
<td>Monitor/enforce contractual and participatory governance agreements involving administration, faculty and staff. Make periodic request through FHPC, Senate, Academic Affairs and President's Offices</td>
<td>Program 100</td>
<td>$1.23 M per year</td>
</tr>
<tr>
<td>2 2.4, 2.5</td>
<td></td>
<td>To provide students with up-to-date classroom/laboratory equipment and supplies</td>
<td>Purchase necessary contemporary classroom/laboratory equipment and supplies</td>
<td>Program 100, Bloc Grant</td>
<td>$15K per year</td>
</tr>
<tr>
<td>3, A 1.1, 1.3, 5.2</td>
<td></td>
<td>To provide a stable and viable student tutorial service</td>
<td>Hire peer tutors for Math Lab, student worker to assist in Chemistry stockroom and technology labs</td>
<td>Program 100</td>
<td>$8K per year</td>
</tr>
<tr>
<td>4, A 1.1, 1.3, 5.2</td>
<td></td>
<td>To provide quality instruction to students and aim for 54% class retention in all courses</td>
<td>Assign trained readers to classes to increase graded homework output. Perform periodic evaluation of course placement cut scores.</td>
<td>A pool of qualified readers. Viable research data. Cooperative staff</td>
<td>$4K per year</td>
</tr>
<tr>
<td>5 1.1, 1.3, 5.2</td>
<td></td>
<td>To expose students to current technology in and out of the classroom</td>
<td>Update classrooms and laboratories on a regular basis</td>
<td>Bloc Grant and VATEA funds</td>
<td>$60K</td>
</tr>
<tr>
<td>6 1.1, 1.3, 5.2</td>
<td></td>
<td>To increase student's science awareness in the community</td>
<td>Foster partnerships with LAUSD and PVUSD. Offer college courses in local HS for qualified students. Schedule college courses in such a way that qualified HS students can enroll. Schedule Chemistry 040</td>
<td>STARS for Kids Program, Drafting classes at Peninsula HS, PLTW program, Comp Sci courses at Narbonne HS, Comp Tech courses at Banning HS</td>
<td>$20K</td>
</tr>
<tr>
<td>DIVISION PRIORITY AND SLO'S</td>
<td>COLLEGE STRATEGY AND SLO'S</td>
<td>OBJECTIVES</td>
<td>ACTIVITIES/TASKS</td>
<td>RESOURCES</td>
<td>COST</td>
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<tr>
<td>7</td>
<td>1.1, 1.3, 5.2</td>
<td>To Support student success initiatives for basic skills and entry level courses</td>
<td>Lower class size limits for entry-level courses. Add skills/discussion lab TBA. Provide supplemental instruction. Assign peer tutors to work with faculty in the classroom. Enforce course pre-requisites. Explore new teaching techniques. Develop new courses such as Math Anxiety, Study Skills and Ethics. Reintroduce a self paced elementary algebra section. Offer short term courses during regular semesters. Offer on-going modules for entry-level courses.</td>
<td>Program 100, Admissions and records</td>
<td>Unk.</td>
</tr>
<tr>
<td>8</td>
<td>1.1, 1.3, 5.2</td>
<td>To address the college mission on workforce development by preparing students for immediate employment in local oil refineries</td>
<td>Restart Process Plant Tech Program Foster partnerships with local industry and trade unions. Submit PNPR for Process Pant AS degree and Instrumentation AS degree. Seek funding for an instrumentation laboratory.</td>
<td>State/Conoco Phillips/Valero/Mobil Oil/SBCC/AWU Grant to fund classes</td>
<td>Unk.</td>
</tr>
<tr>
<td>9</td>
<td>1.1, 1.3, 5.2</td>
<td>To address the college mission on workforce development by training students in craft skills that could lead to immediate employment or apprenticeship.</td>
<td>Add basic craft skills courses such as electrical. Continue to schedule drafting courses</td>
<td>Grants to fund classes and equipment. Program 100</td>
<td>$200K</td>
</tr>
<tr>
<td>10</td>
<td>1.1, 1.3, 5.2</td>
<td>To provide students with additional basic skills</td>
<td>Add more sections of existing basic skills courses. Introduce</td>
<td>Program100</td>
<td>$50K per</td>
</tr>
</tbody>
</table>

Physical Sciences 2008-09

42
<table>
<thead>
<tr>
<th>DIVISION PRIORITY AND SLO'S</th>
<th>COLLEGE STRATEGY AND SLO'S</th>
<th>OBJECTIVES</th>
<th>ACTIVITIES/TASKS</th>
<th>RESOURCES</th>
<th>COST</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>preparation</td>
<td>new courses related to math test taking skills, employment, GED, etc. (Math 140).</td>
<td></td>
<td>year</td>
</tr>
<tr>
<td>11</td>
<td>1.1, 1.3, 5.2</td>
<td>To address the college mission on workforce development by training students in craft skills that could lead to immediate employment or apprenticeship</td>
<td>Promote fiber optics courses and certificate</td>
<td>SCE Grant to fund classes and equipment.</td>
<td>$300K</td>
</tr>
<tr>
<td>12</td>
<td>2.3, 2.5, 6.1, 6.2</td>
<td>To provide students with easy to read and erase slate boards in classrooms and laboratories</td>
<td>Request through CPC. Monitor construction phase of new buildings</td>
<td>Prop A/AA funds.</td>
<td>$Unk.</td>
</tr>
<tr>
<td>13</td>
<td>2.3, 2.5, 6.1, 6.2</td>
<td>To provide students with up to date planetarium</td>
<td>Request through CPC. Monitor renovation phase. Work with College Foundation to find sponsors for a new planetarium projector</td>
<td>Prop A/AA funds. SFP grants and donations</td>
<td>$500K</td>
</tr>
<tr>
<td>14</td>
<td>2.4, 2.5, 6.3</td>
<td>To ensure that students have continual access to modern and leading edge laboratory equipment</td>
<td>Install security systems in locations housing laboratory equipment to protect costly investments.</td>
<td>Prop A/AA or State Deferred Maintenance funds</td>
<td>Unk.</td>
</tr>
<tr>
<td>15</td>
<td>1.1, 1.3, 5.2</td>
<td>To provide learning experiences for students using current technology.</td>
<td>Install Smart Board, computer projector in classroom and laboratories</td>
<td>Prop A/AA funds</td>
<td>Unk.</td>
</tr>
<tr>
<td>16</td>
<td>1.1, 1.3, 5.2</td>
<td>To introduce new student oriented programs such as hazardous disposal certification and allied health assistant programs (pharmacology, dental, biotechnology, etc)</td>
<td>Package existing college courses into a viable certificates and programs. Coordinate with Life Sciences Dept.</td>
<td>Faculty</td>
<td>$0</td>
</tr>
</tbody>
</table>

Physical Sciences 2008-09
### LOS ANGELES HARBOR COLLEGE

**FY 07-08 Operating Budget**

**MATH-PHY-SCI AND TECH DIVISION**

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>BUDGET</th>
<th>JUSTIFICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Salaries</strong></td>
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</tr>
<tr>
<td>110000</td>
<td>717,618</td>
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<tr>
<td>120000</td>
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<tr>
<td>140000</td>
<td>999,018</td>
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<tr>
<td>210000</td>
<td>37,718</td>
<td>Division secretary</td>
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<tr>
<td>220000</td>
<td>133,145</td>
<td>Chemistry, Math and Physics lab techs</td>
</tr>
<tr>
<td>230000</td>
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<tr>
<td>240000</td>
<td>170,863</td>
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<td><strong>Benefits</strong></td>
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<td><strong>Supplies</strong></td>
<td>5,849</td>
<td>Chemistry, Physics and Tech labs</td>
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<td>420000</td>
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<td></td>
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<td>440000</td>
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<tr>
<td>490000</td>
<td>5,849</td>
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<tr>
<td><strong>Operations</strong></td>
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<tr>
<td>540000</td>
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<td>590000</td>
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<td><strong>Cap Outlay/Build</strong></td>
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<tr>
<td>620000</td>
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<tr>
<td>650000</td>
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</tr>
<tr>
<td><strong>Miscellaneous</strong></td>
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<td>730000</td>
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<td>739000</td>
<td></td>
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<tr>
<td>790000</td>
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</tr>
<tr>
<td><strong>TOTAL BUDGET</strong></td>
<td>$1,353,426</td>
<td></td>
</tr>
</tbody>
</table>
EXECUTIVE SUMMARY

The Physical Sciences Pathway faculty thanks the external validation team for its thorough review of the documents submitted and addresses its recommendations as follows:

I. The pathway will continue to rely and build on the strengths noted by the validation team such as

a) encouraging more transfers students to pursue chemistry and physics degrees particularly with pending new State of California blended apportionment funding. See 2009-10 Unit Plan priority #4

b) Maintain the quality and rigor of science courses with current course outline content and SLO’s assessment. In priority #7 of the 2009-10 Unit Plan, faculty in the Math-Phy-Sci and Tech Division outline goals to improve teaching learning skills strategies that would benefit all students

c) Continue to reach out to the community via the Stars4Kids as soon as renovation of the college planetarium is complete. In priority #6 of the 2009-10 Unit Plan, the divisions desire to promote science awareness is clearly identified

d) Maintain realistic academic, staffing and enrollment goals. In priority #1 of the 2009-10 Unit Plan, the division emphasizes its intention to participate in the FHPC process to sustain a viable staffing level, and again in priority #7 the division states its intent to address class size limits to improve student learning

e) Maintain professional relationships with the college community to help students succeed. In priority #1, 7, 6, 9 and 10 of the 2009-10 Unit Plan, the division recognizes the need to include the college community when planning for student success

II. The pathway will address the external validation team recommendations as follows:

a) Continue to work with the Science Complex team to ensure that program space is correctly addressed and make a smooth transition into the new building. During 2007-09 the division fought an uphill battle with the college administration to replace the existing Physics Building. Due to the generosity of LA County taxpayers, the division will share a new building complex with the Life Sciences Division

b) Reducing the number of students in the chemistry laboratories will be a careful balancing act involving student safety, efficiency and budget limitations. Overall 32 students in a chemistry laboratory setting is a very reasonable number

c) In priority #1 of the 2009-10 Unit Plan, the division intends to address on an annual basis requests to the Staffing Committee to replace the physics laboratory technician and to FHPC to fill the astronomy and physics positions vacated by Charles Huff and Joan Fu

d) The division intends to create a Physical Sciences Pathway Advisory Committee involving local industries, businesses and schools in the service area. The division recognizes that the advisory committee mechanism is a good way to draw knowledgeable members of the community to participate in college planning and decision making.
Validation Team Duties

.. program review involves the visitation, observation and analysis of a program/discipline by a team with the purpose of providing suggestions for improvement.

Duties of the Team Member

Pre-Visit Responsibilities
- Study the self-study report prepared by the faculty.

Visit Responsibilities
- Meet with program/discipline faculty.
- Examine teaching materials, supplies, and equipment presently being used in the program.

Post-Visit Responsibilities
- Develop an executive summary of team findings and recommendations.

The Role of the Validation Team
The validation team has been selected to include professionals who can assist the program by reviewing the self-study and plan of action, then making comments and suggestions that will lead to program improvement. In addition to reviewing the materials included in the written packet, team members are asked to visit the facility which houses the program, talk with instructors and students in the program, and request any further informational materials which would be helpful in preparing the executive summary.

<table>
<thead>
<tr>
<th>Program Name: Process Plant Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAME</td>
</tr>
<tr>
<td>David Humphreys</td>
</tr>
<tr>
<td>Thomas Abbatiello</td>
</tr>
<tr>
<td>Ana Escandon</td>
</tr>
<tr>
<td>Beatriz Ruiz-Silva</td>
</tr>
<tr>
<td>Humberto Ortiz</td>
</tr>
</tbody>
</table>

Physical Sciences 2008-09  46
Validation Team Report  
Physical sciences pathway April 2010  

**Major Findings: Strengths:**  
The report prepared by the Department was clear very and complete.  
The department presents several strengths:  

a) It counts with chemistry and sciences degrees that offer the students an extra tool in their careers and a sense of accomplishment. These degrees also allow the department to keep track of transfer students, a task that is difficult otherwise.  

b) The courses offered are academically strong, as judged by the syllabus presented, and the department has developed assessments to evaluate those courses in an objective manner.  

c) The and flexible rotating schedules and offering are designed with students needs in mind.  

d) The Department is at the vanguard of the needs of the nursing program since they are the only community college in the District that offers Chemistry 066 allied health major's chemistry course.  

e) Unique to this Department is also the way they reach out to the high school students with the successful Stars4Kids program  

f) Lectures are held in technologically updated classroom and the department counts with a computer lab to have students updated in technology.  

g) The Department has realistic and important goals which include  

i) Offering biochemistry, chem. 221. With this course the Department will be serving all the population located in the southernmost part of the LACC system. Those students have to travel large distances to take those classes in downtown LA. This class will also be a great complement to the courses already offered by the department.  

ii) Add on line hybrid classes to be competitive with other community colleges  

ii) Coordinate schedules for efficient fulfillment of pre-requisites for transfer  

In summary, the department is doing an excellent job addressing and serving the needs of a diverse population of students, offering fully articulated courses and continuously improving  

**Major Findings: Concerns:**  

a) The department is housed in the NEA building sharing the facilities with other departments and has limited space  

b) 36 students in laboratories is a number much larger than the ACS recommendations  

c) There is no full time faculty in astronomy and no lab tech in physics.  

d) There is no involvement of the department with local industries  

**Recommendations:**  

a) The lack of space has been addressed and the department will count with its own building.  

To reduce the number of students in the chemistry laboratories. Considering the budget cuts and safety guidelines 32 students is a very reasonable number (In the over limit side)
c) To hire a physics lab tech and at least a full time physics professors
should develop a plan on how to sustain the department.

make an effort to involve the department with local industries
Los Angeles Harbor College

Program Review

DOCUMENTATION

PHYSICAL SCIENCES

PATHWAY
I. AA degree core curriculum, Chemistry 101, 102, 211, 212, Math 267 and Physics 039, and related course outlines can be found at https://ecd.laccd.edu/

Hard copies of these documents will be available during the Team Validation campus visit.

II. AA degree core curriculum, Chemistry 101, 102, Math 267, Physics 037, 038 and 039, and related course outlines can be found at https://ecd.laccd.edu/

Hard copies of these documents will be available during the Team Validation campus visit.

III. Program student learning outcomes assessment results can be found at

http://www.lahc.edu/facultystaff/slo/courseassessment.html

Hard copies of these documents will be available during the Team Validation campus visit.
Chemistry 101 – General Chemistry (0465)
Lecture MW 12:20 pm - 1:45 pm Room TR-101
Pre-Lab MW 7:50 am – 9:05 am Room PH-102
Lab MW 9:05 am – 11:00 am Room PH-102

Instructor: Dr. Arias
Phone: (310) 233-4493
Office: T-123
E-mail: arias@chem.ucla.edu
Office Hours: MW 11:00 am - 12:20 pm

TA: TBA

Textbooks and Supplies:
Laboratory Notebook (with duplicate sheets)
Laboratory safety glasses/goggles
Scientific Calculator (non-programable)
USB Flash Drive (optional)

Prerequisites: Satisfactory completion (C or better) of Chemistry 065 or the equivalent and Math 123C. Eligibility for English 101 or concurrent enrollment in English 28.

Course Description: This course is a 5 unit course transferable to both the UC and CSU systems. The topics covered will include the following: physical measurements, atomic theory, stoichiometry, chemical reactions, quantitative analysis, gas laws, thermochemistry, quantum theory, electron configuration, chemical periodicity, molecular bonding, VSEPR theory, valence bond theory, molecular orbital theory, states of matter, and solutions.

Grading: 

<table>
<thead>
<tr>
<th>Component</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework</td>
<td>50</td>
</tr>
<tr>
<td>Laboratory</td>
<td>200</td>
</tr>
<tr>
<td>Quizzes</td>
<td>70</td>
</tr>
<tr>
<td>Exams</td>
<td>300</td>
</tr>
<tr>
<td>Final</td>
<td>200</td>
</tr>
<tr>
<td>Total</td>
<td>820</td>
</tr>
</tbody>
</table>

Scale: 

<table>
<thead>
<tr>
<th>Grade</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>90 - 100%</td>
</tr>
<tr>
<td>B</td>
<td>80 - 89%</td>
</tr>
<tr>
<td>C</td>
<td>70 - 79%</td>
</tr>
<tr>
<td>D</td>
<td>60 - 69%</td>
</tr>
<tr>
<td>F</td>
<td>0 - 59%</td>
</tr>
</tbody>
</table>

Homework: 10 homework assignments will be collected during the semester. Each homework assignment is worth 5 points. Late homework will be accepted for half credit. Solutions to the homework will be posted after the due date for each assignment.

Quizzes: There will be 9 quizzes during the semester. The lowest 2 scores will be dropped. No make up quizzes will be given.

Exams: There will be 3 examinations given during the semester. Each exam will be worth 100 points. No make up exams will be given unless you have proof of a medical emergency.

Final: The final examination is worth 200 points and is cumulative. You must take the final examination to receive credit for the course. December 19, 10:30 – 12:30 pm.
Course Content:

Chapter 3. Stoichiometry.
Chapter 4. Classes of Chemical Reactions.
Chapter 5. Gases.
Chapter 6. Thermodynamics.
Chapter 7. Quantum Theory.
Chapter 8. Electron Configuration.
Chapter 9. Chemical Bonding.
Chapter 11. Covalent Bonding.
Chapter 12. Phase Changes.
Chapter 13. Solutions.

Academic Dishonesty: Cheating and or plagiarism will result in an F for the assignment and may result in an F grade for the course. The dishonest student may then be reported to the administration for further disciplinary action. All forms of communication with others are considered cheating during an exam. Cell phones, text messengers, and programmable calculators may not be used during an exam.

Attendance Policy: It is the responsibility of the student to attend lectures and labs. Failure to attend lecture may result in zeros on homework, quizzes, and exams due on those days. Failure to report to lab may result in no credit for the course. Attendance is worth 5 points per day for each lab session. Please arrive to lectures and labs on time.

Laboratory: You must be enrolled in a laboratory concurrently with the corresponding lecture. In order to pass the class, you must complete all laboratory assignments with a satisfactory score. Failure to pass the laboratory with a C or better will result in an F for the class. Bring safety glasses/ goggles and closed toed shoes to every lab section.

Bring a laboratory notebook (with duplicate pages) to each lab session. Leave the first few pages for a table of contents. The table should include the title of the experiment and the page number of the experiment. The lab notebook will include all pre-lab and raw data. One copy of the pre-lab assignment will be turned in to the lab instructor at the beginning of lab for each new experiment. A copy of the raw data will also be collected at the conclusion of each experiment.

Pre-lab: The pre-lab assignment should be completed before each new lab. The pre-lab should contain your name, date, title of the experiment, experiment objective, and flow-chart. The pre-lab will be signed at the beginning of each new lab.

Lab Data: At the conclusion of each lab period, the instructor will sign the raw data collected that day. Unsigned data will not receive credit. Data should include the title of the experiment and the date. The proper units for all measurements should also be included.

Lab Reports – Laboratory reports will be typed using a word processor (Word). All graphs must be done with an appropriate graphing program (Excel).
## Laboratory Schedule

<table>
<thead>
<tr>
<th>Date</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>9/3</td>
<td>Labor Day (No Lab)</td>
</tr>
<tr>
<td>9/5</td>
<td>Safety, and check in.</td>
</tr>
<tr>
<td>9/10</td>
<td><strong>Isotope Exercise (no pre-lab)</strong></td>
</tr>
<tr>
<td>9/12</td>
<td>Exp 2 Density</td>
</tr>
<tr>
<td>9/17</td>
<td>Exp 3 Experimental Accuracy</td>
</tr>
<tr>
<td>9/19</td>
<td>Exp 5 Avogadro’s Number</td>
</tr>
<tr>
<td>9/24</td>
<td>Ionic Reactions part 1</td>
</tr>
<tr>
<td>9/26</td>
<td>Ionic Reactions part 2</td>
</tr>
<tr>
<td>10/1</td>
<td>Exp 7 Limiting Reactant</td>
</tr>
<tr>
<td>10/3</td>
<td>Exp 7 Limiting Reactant (continue)</td>
</tr>
<tr>
<td>10/8</td>
<td>Exp 8 Aspirin part 1a</td>
</tr>
<tr>
<td>10/10</td>
<td>Exp 8 Aspirin part 1b</td>
</tr>
<tr>
<td>10/15</td>
<td>Exp 8 Aspirin part 2</td>
</tr>
<tr>
<td>10/17</td>
<td>Exp 9 Molar Mass by Vapor</td>
</tr>
<tr>
<td>10/22</td>
<td>Thermochemistry parts 1 and 2 (Handout)</td>
</tr>
<tr>
<td>10/24</td>
<td>Thermochemistry parts 3 and 4 (Handout)</td>
</tr>
<tr>
<td>10/29</td>
<td>Exp 13 Calorimetry</td>
</tr>
<tr>
<td>11/31</td>
<td>Exp 12 Crystal Structures</td>
</tr>
<tr>
<td>11/5</td>
<td>Exp 15 Freezing point</td>
</tr>
<tr>
<td>11/7</td>
<td>Exp 16 Solubility of Ionic Compounds</td>
</tr>
<tr>
<td>11/12</td>
<td>Holiday – Veterans Day (no lab)</td>
</tr>
<tr>
<td>11/15</td>
<td>Exp 17 Acid-Base Titrations part 1</td>
</tr>
<tr>
<td>11/19</td>
<td>Exp 17 Acid-Base Titrations part 2</td>
</tr>
<tr>
<td>11/21</td>
<td>Exp 17 Acid-Base Titrations part 3</td>
</tr>
<tr>
<td>11/26</td>
<td>Exp 17 Acid-Base Titrations part 4</td>
</tr>
<tr>
<td>11/28</td>
<td>Exp 20 Redox Titrations part 1a</td>
</tr>
<tr>
<td>12/3</td>
<td>Exp 20 Redox Titrations part 1b</td>
</tr>
<tr>
<td>12/5</td>
<td>Exp 20 Redox Titrations part 2</td>
</tr>
<tr>
<td>12/10</td>
<td>Finish all experiments</td>
</tr>
<tr>
<td>12/12</td>
<td>Lab Check Out</td>
</tr>
</tbody>
</table>

The lab is worth 200 points. To get the total points for lab, sum up all the points earned in lab and divide by the total possible points and multiply this number by 200.

### Lab Grading

<table>
<thead>
<tr>
<th>Category</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attendance/Safety</td>
<td>5 pts per day</td>
</tr>
<tr>
<td>Pre-lab</td>
<td>5 pts for each experiment</td>
</tr>
<tr>
<td>Data</td>
<td>5 pts for each experiment</td>
</tr>
<tr>
<td>Lab Report (typed)</td>
<td>15 pts for each</td>
</tr>
<tr>
<td>Isotope Exercise</td>
<td>20 pts</td>
</tr>
<tr>
<td>Lab Clean-up</td>
<td>20 pts</td>
</tr>
</tbody>
</table>

Lab reports are due one week after completion of the experiment. Late reports will lose points.
Title – Label the title of the experiment in bold print and in upper case. The Authors should follow the title and then the college.

Example:

Protein Isolation and Purification Assay
First Name Last Name*, Lab Partner (If any)
Department of Chemistry, California Institute of Technology

Abstract – In a few sentences briefly state the purpose of the experiment and a summary of the results obtained. (2 – 5 sentences) (Best when written last)

Example:
Enzyme A is easily isolated from the source cell upon lyses with reagent X. The protein was then isolated by gel filtration and purified by HPLC. The protein was collected in high yields and retained 80% of its enzyme activity.

Introduction – The introduction should give a brief background on the subject and should clearly state the goal of the experiment. A balance chemical reaction showing the chemical structures should be included. (1 page maximum)

Procedure – Skip

Results – This includes the raw data collected during the experiment and the calculations.

• Data – The data should be well organized and should include units. Data tables should be labeled at the top of the table. Plots (graphs) should be labeled at the bottom of the plot.
• Calculations – Show equations used for calculations.
• For synthesis reactions, Theoretical Yields and % Yields should be included.

Example:

Table 1. Assay Results.

<table>
<thead>
<tr>
<th>Reagent</th>
<th>Activity</th>
<th>Purity</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRX</td>
<td>77%</td>
<td>82%</td>
</tr>
<tr>
<td>XXX</td>
<td>45%</td>
<td>50%</td>
</tr>
</tbody>
</table>


Figure 1. Plot

Discussion – Summary of the experiment. (Were the state goals of the experiment obtained?) Conclusion. (2 – 5 sentences)

References - All published resources should be listed at the end.
Los Angeles Community College District

COURSE OUTLINE
(Replaces PNCR and Course Outline)

Section I: BASIC COURSE INFORMATION

OUTLINE STATUS: Course Update

1. COLLEGE: Harbor

2. SUBJECT (DISCIPLINE) NAME: Chemistry
   (40 characters, no abbreviations)

3. COURSE NUMBER: 101

4. COURSE TITLE: General Chemistry I

5. UNITS: 5

6. CATALOG COURSE DESCRIPTION -- Provide a description of the course, including an overview of the topics covered:
   First of two courses that introduces theory and laboratory topics dealing with general principles of chemistry. Chemical calculations are emphasized as well as laboratory precision and accuracy utilizing quantitative techniques.

7. CLASS SCHEDULE COURSE DESCRIPTION -- Provide a brief description of the course, including an overview of the topics covered:
   First of two courses that introduces theory and laboratory topics dealing with general principles of chemistry. Chemical calculations are emphasized as well as laboratory precision and accuracy utilizing quantitative techniques.

8. INITIAL COLLEGE APPROVAL DATE:

9. UPDATES (check all applicable boxes):
   - [X] Content Last Update: 10/17/09
   - [X] Objectives Last Update: 10/17/09
   - [ ] College Specific Course Attributes/Data Elements Last Update:
   - [ ] Districtwide Course Attributes/Data Elements Last Update:
   - [ ] Other (describe) Last Update:

10. CLASS HOURS:

   "Standard Hours" per Week (based on 18 weeks) | Total Hours per Term (hrs per week x 18) | Units

   

\[1\] Underlined course attributes are the same for the course throughout the LACCD; all other course attributes are college specific.
11. PREREQUISITES, COREQUISITES, ADVISORIES ON RECOMMENDED PREPARATION, and LIMITATION ON ENROLLMENT

Note: The LACCD's Policy on Prerequisites, Corequisites and Advisories requires that the curriculum committee take a separate action verifying that a course's prerequisite, corequisite or advisory is an "appropriate and rational measure of a student's readiness to enter the course or program" and that the prerequisite, corequisite or advisory meets the level of scrutiny delineated in the policy.

Prerequisites: **Yes** (If Yes, complete information below)

<table>
<thead>
<tr>
<th>Subject</th>
<th>Number</th>
<th>Course Title</th>
<th>Units</th>
<th>Validation Approval Date (official use only)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry</td>
<td>065</td>
<td>Introductory Chemistry</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

Corequisite: **None** (If Yes, complete information below)

Advisories: **None** (If Yes, complete information below)

12. REPETITIONS -- Number of times course may be repeated for credit (three maximum): 0 (see: Section V, #9)

13. OTHER LIMITATIONS ON ENROLLMENT (see Title 5, Section 58106 and Board Rule 6803 for policy on allowable limitations. Other appropriate statutory or regulatory requirements may also apply):

N/A
## Section II: Course Content and Objectives

### 1. Course Content and Objectives:

<table>
<thead>
<tr>
<th>COURSE CONTENT AND SCOPE - Lecture:</th>
<th>Hours per topic</th>
<th>COURSE OBJECTIVES - Lecture (if applicable):</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>If applicable</strong>, outline the topics included in the lecture portion of the course <em>(outline reflects course description, all topics covered in class).</em></td>
<td></td>
<td>Upon successful completion of this course, the student will be able to... <em>(Use action verbs – see Bloom's Taxonomy below for &quot;action verbs requiring cognitive outcomes.&quot;)</em></td>
</tr>
<tr>
<td>Atoms and elements</td>
<td>3</td>
<td>Construct a model of the atom and determine the correct amount of each sub-atomic particle including writing both electron configurations and orbital diagrams.</td>
</tr>
<tr>
<td>Molecules and compounds</td>
<td>3</td>
<td>Combine atoms and molecules to form compounds. Write molecular formulas from the formal name and name molecules from their formulas.</td>
</tr>
<tr>
<td>Chemical equations</td>
<td>3</td>
<td>Write and balance chemical equations.</td>
</tr>
<tr>
<td>Chemical quantities</td>
<td>3</td>
<td>Write and balance molecular equations, complete ionic equations and net ionic equations.</td>
</tr>
<tr>
<td>Aqueous Reactions</td>
<td>3</td>
<td>Calculate the amount of products in a chemical reaction given the amount of reactants. Calculate the amount of reactants given the amount of products formed in a chemical reaction.</td>
</tr>
<tr>
<td>Gas Laws</td>
<td>6</td>
<td>Solve gas problems using gas laws.</td>
</tr>
<tr>
<td>Themodynamics</td>
<td>6</td>
<td>Illustrate how atomic orbitals combine to form molecular bonds including the determination of bond order.</td>
</tr>
<tr>
<td>Quantum Mechanics</td>
<td>3</td>
<td>Draw molecules with the correct bond order and number of lone pairs in the correct molecular geometry.</td>
</tr>
<tr>
<td>Electron Configuration</td>
<td>3</td>
<td>Determine physical properties of compounds from their intermolecular forces.</td>
</tr>
<tr>
<td>Chemical Bonding</td>
<td>4</td>
<td>Use phase diagrams to determine changes in states and phases of molecules.</td>
</tr>
<tr>
<td>Valence Bond Theory</td>
<td>4</td>
<td>Solve problems involving colligative properties of solutions.</td>
</tr>
<tr>
<td>Molecular Orbital Theory</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Intermolecular Forces</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>States of Matter</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Solution Properties</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td><strong>Total Lecture hours</strong></td>
<td><strong>54.00</strong></td>
<td></td>
</tr>
</tbody>
</table>
2. REQUIRED TEXTS:
Provide a representative list of textbooks and other required reading; include author, title and date of publication:

Los Angeles Harbor Chemistry Laboratory Manual

3. SUPPLEMENTARY READINGS:
Reading assignments may include, but are not limited to the following:

None

4. WRITING ASSIGNMENTS:
Title 5, section 55002 requires grades to be "based on demonstrated proficiency in subject matter and the ability to demonstrate that proficiency, at least in part, by means of essays or, in courses where the curriculum committee deems them to be appropriate, by problem solving exercises or skills demonstrations by students." Writing assignments in this course may include, but are not limited to the following:

Short scientific article critiques such as The Other Half of the Brain. Scientific
6. REPRESENTATIVE ASSIGNMENTS THAT DEMONSTRATE CRITICAL THINKING:

Title 5, section 55002(a) requires that a degree-applicable course have a level of rigor that includes "critical thinking and the understanding and application of concepts determined by the curriculum committee to be at college level". Critical thinking may include, but is not limited to analysis, synthesis, and evaluation. Provide examples of assignments that demonstrate critical thinking.

- Analysis and calculations involving experimental data collected in the laboratory.

7. METHODS OF EVALUATION:

Title 5, section 55002 requires grades to be "based on demonstrated proficiency in subject matter and the ability to demonstrate that proficiency, at least in part, by means of essays, or, in courses where the curriculum committee deems them to be appropriate, by problem solving exercises or skills demonstrations by students." Methods of evaluation may include, but are not limited to the following (please note that evaluation should measure the outcomes detailed "Course Objectives" at the beginning of Section II):

- Exams, quizzes, written homework and laboratory assignments

8. METHODS OF INSTRUCTION:

Methods of instruction may include, but are not limited to the following:

- Lecture
- Discussion
- Laboratory
- Activity
- Field Experience
- Independent Study
- Other (explain)

9. SUPPLIES:

List the supplies the student must provide.

- Pens, scientific calculator, laboratory safety goggles, combination lock, textbook, laboratory manual.

10. COMPUTER COMPETENCY:

If applicable, explain how computer competency is included in the course.

- Use of a word processor to write reports and a graphing program to plot data on a graph.

11. INFORMATION COMPETENCY:

Information competency is the ability to find, evaluate use, and communicate information in all its various formats. It combines aspects of library literacy, research methods and technological literacy. Information competency includes consideration of the ethical and legal implications and requires the application of both critical thinking and communications skills. If applicable, explain how information competency is included in the course.

- Search the literature (books, journals, websites) to write an introduction section in the lab reports and to compare experimental laboratory results to known published results.
12. DIVERSITY:

If applicable, explain how diversity (e.g., cultural, gender, etc.) is included in the course.

N/A

13. SCANS COMPETENCIES (required for all courses with vocational TOP Codes; recommended for all courses):

SCANS (Secretary's Commission on Necessary Skills) are skills the Department of Labor identified, in consultation with business and industry leaders, which reflect the skills necessary for success in the workplace. Check the appropriate boxes to indicate the areas where students will develop the following skills (please note that all SCANS competencies do not apply to all courses):

RESOURCES

☒ Managing Time: Selecting relevant goal-related activities, ranking them in order of importance, allocating time to activities, and understanding, preparing and following schedules.

☐ Managing Money: Using or preparing budgets, including making cost and revenue forecasts; keeping detailed records to track budget performance, and making appropriate adjustments.

☐ Managing Material and Facility Resources: Acquiring, storing, allocating, and distributing materials, supplies, parts, equipment, space or final products in order to make the best use of them.

INTERPERSONAL

☐ Participating as Member of a Team: Working cooperatively with others and contributing to group’s efforts with ideas, suggestions and effort.

☐ Teaching Others New Skills: Helping others learn needed knowledge and skills.

☐ Exercising Leadership: Communicating thoughts, feelings, and ideas to justify a position, encouraging, persuading, convincing or otherwise motivating an individual or group, including responsibly challenging existing procedures, policies or authority.

☐ Negotiating: Working toward agreement that may involve exchanging specific resources or resolving divergent interests.

☒ Working with Cultural Diversity: Working well with men and women and with people from a variety of ethnic, social, or educational backgrounds.

INFORMATION

☒ Acquiring and Evaluating Information: Identifying a need for data, obtaining the data from existing sources or creating them, and evaluating their relevance and accuracy.

☒ Organizing and Maintaining Information: Organizing, processing and maintaining written or computerized records and other forms of information in a systematic fashion.

☒ Interpreting and Communicating Information: Selecting and analyzing information and communicating the results of others, using oral, written, graphic, pictorial, or multimedia methods.

☒ Using Computers to Process Information: Employing computers to acquire, organize, analyze and communicate information.

SYSTEMS
Understanding Systems: Knowing how social, organizational and technological systems work and operating effectively with them.

Monitoring and Correcting Performance: Distinguishing trends, predicting impacts of actions on system operations, diagnosing deviations in the functioning of a system/organization, and taking necessary steps to correct performance.

Improving or Designs Systems: Making suggestions to modify existing systems in order to improve the quality of products or services and developing new or alternative systems.

TECHNOLOGY

Selecting Technology: Judging which sets of procedures, tools or machines, including computers and their programs, will produce the desired results.

Applying Technology to Tasks: Understanding overall intent and proper procedures for setting up and operating machines, including computers and their reprogramming systems.

Maintaining and Troubleshooting Equipment: Preventing, identifying, or solving problems with equipment, including computers and other technologies.
Section III: RELATIONSHIP TO COLLEGE PROGRAMS

1. THIS COURSE WILL BE AN APPROVED REQUIREMENT FOR AN APPROVED ASSOCIATE DEGREE OR CERTIFICATE PROGRAM: Yes

a. If yes, the course will be a program requirement portion of the "approved program" listed on the State Chancellor's Inventory of Approved Programs (approved programs can be found on the State Chancellor's Office website at http://misweb.cccco.edu/esed/webprog/inv/prod/invmenu.htm

| Associate in Science Degree in Chemistry |

NOTE: In order for a course to be approved as a requirement for an associate degree or certificate program, the program must be listed on the State Chancellor's Office Inventory of Approved Programs AND the course must be listed in the college catalog as either a requirement or an elective for the program. If course is not part of an approved program at the college adopting the course, it will be considered to be a "stand-alone" course, and is subject to the State Chancellor's approval criteria. The college must complete and submit the Chancellor's Office "APPLICATION FOR APPROVAL OF CREDIT" form. Certain courses are granted "blanket approval" by the State Chancellor's Office and do not require separate approval. See the Chancellor's Office Program and Course Approval Handbook for details. LACCD Skills Certificates are not State approved programs and are not listed on the Chancellor's Office Inventory of Approved Programs.

2. GENERAL EDUCATION REQUIREMENTS FOR THE ASSOCIATE DEGREE STATUS:

a. Area requested: a. Natural Science Approval date:

If applicable, provide an explanation of how the course meets the General Education parameters for one of the five general education areas – Natural Sciences, Social and Behavioral Sciences, Humanities, Language and Rationality, Health and Physical Education – contained in Board Rule 6201.14 - General Education Requirements. http://marlin.laccd.edu/district/BoardRules_Adms/AdmRegs/boardrules.htm

a. 2nd Area requested: None Approval date:

If applicable, provide an explanation of how the course meets General Education parameters for an additional general education area – Natural Sciences, Social and Behavioral Sciences, Humanities, Language and Rationality, Health and Physical Education – contained in Board Rule 6201.14 - General Education Requirements. http://marlin.laccd.edu/district/BoardRules_Adms/AdmRegs/boardrules.htm
Section IV: Articulation Information

(Complete in consultation with College Articulation Officer)

1. Transfer Status:
   a. Transferable to the University of California: Yes
   b. UC approval date: 2008
   c. Transferable to the California State University: Yes
   d. College approval date: 2008

2. General Education For Transfer:

   IGETC Certification:
   a. Area requested: 5-A: Physical Sciences
   b. Date requested:
   c. IGETC approval date: 2008

   If applicable, provide an explanation of how the course meets the appropriate General Education parameters, as defined in IGETC Certification Guidelines.

   CSU Certification:
   a. Area requested: B-1: Physical Science
   b. Date requested:
   c. CSU approval date: 2008

   If applicable, provide an explanation of how the course meets the appropriate General Education parameters, as defined in CSU Certification Guidelines.

3. Major Requirement For Transfer – Will this course be articulated to meet lower division major requirements? No
   List college/university and the majors:

<table>
<thead>
<tr>
<th>College/University</th>
<th>Major(s)</th>
</tr>
</thead>
</table>

   CAN Number: CAN Sequence Number:
   CAN Approval -- Date requested: Date approved:
Section V: SUPPLEMENTAL COURSE INFORMATION

1. DEPARTMENT/DIVISION NAME: Chemistry

2. DEPARTMENT/DIVISION CODE: 45

3. SUBJECT CODE -- 3 characters, assigned by District Office: 123 (existing subject codes are available on the LACCD web site at http://www.laccd.edu/curriculum/directory-programs-courses/index.htm

4. SUBJECT ABBREVIATION -- 7 characters, assigned by District Office: Chem

5. SPC CODE -- 3 characters, assigned by District Office: 766

6. ABBREVIATION FOR TRANSCRIPTS -- 20 characters, assigned by District Office: Chem

7. DEGREE CREDIT: Indicate whether the course meet the "standards for approval" for degree credit course set forth in Title 5, section 55002(a)(2), which requires the course to have a degree of intensity, difficulty, and vocabulary that the curriculum committee has determined to be at the college level: This course is Degree Applicable

8. CREDIT/NO CREDIT GRADING: No

9. REPETITIONS -- Number of times course may be repeated for credit (three maximum): 0

   How does the repetition of this course meet Title 5, section 58161 requirements? A course may be repeatable when, "course content differs each time it is offered, and that the student who repeats it is gaining an expanded educational experience for one of the following reasons: (A) Skills or proficiencies are enhanced by supervised repetition and practice within class periods; or (B) Active participatory experience in individual study or group assignments is the basic means by which learning objectives are obtained."

10. PRIOR TO TRANSFERABLE LEVEL -- This course attribute applies to English, writing, ESL, reading and mathematics courses ONLY. If applicable, indicate how many levels below the transferable level this course should be placed: Not applicable

11. CREDIT BASIC SKILLS -- Title 5, section 55502(d) defines basic skills as "courses in reading, writing, computation, and English as a Second Language, which are designated as non-degree credit courses pursuant to Title 5, section 55002(b)." No If Yes, course must be non-degree applicable.

12. CROSS REFERENCE -- Is this course listed as equivalent in content to existing College/District courses in another discipline? No

   If Yes, list courses (documentation of cross-discipline agreement must be provided):

13. COURSE SPECIFICALLY DESIGNED FOR STUDENTS WITH DISABILITIES -- Title 5, section 56029 allows a course to be repeatable when continuing success of the students with disabilities is dependent on additional repetitions of a specific class. Is this course designated as an "approved special class" for students with disabilities? No
If yes, provide an explanation of how this course meets the requirements of Title 5, section 56029.

14. COOPERATIVE EDUCATION STATUS  -- Title 5, section 55262 allows for two types of Cooperative Education: 1) General Work Experience Education -- i.e., supervised employment, which is intended to assist students in acquiring desirable work habits, attitudes and career awareness, which need not be related to the students' educational goals; or 2) Occupational Work Experience Education -- i.e., supervised employment, extending classroom based occupational learning at an on-the-job learning station, which is related to the students' educational or occupational goal.  Is this course part of the college's approved cooperative work experience education program?  No

15. COURSE CLASSIFICATION: Liberal Arts Sciences

Note: A course's Classification, TOP Code and SAM code must be aligned -- e.g., Courses with an "Occupational" Course Classification must have an "Occupational" TOP Code and a SAM Code of A, B, C, or D; courses that do not have an "Occupational" Course Classification cannot have an Occupational TOP Code and must have an "E" SAM Code. Courses coded as "basic skills" in #11 should be coded "Adult and Secondary Basic Skills."

16. TOP CODE – (6 digits xxxx.xx) 1905.00

Course content should match discipline description in Taxonomy of Programs found at www.cccco.edu/cccc/esed/curric/curriculum.htm.

17. SAM CODE (Student Accountability Model): E -- Non-Occupational

SAM Codes (see CCC Chancellor's Office Student Accountability Model Operations Manual, 1984) should be assigned as follows:

Priority "A" -- Apprenticeship: Courses designed for an indentured apprentice must have the approval of the State of California, Department of Industrial Relations Department, Division of Apprenticeship Standards.

Priority "B" -- Advanced Occupational: Courses taken by students in the advanced stages of their occupational programs. Courses should be offered in one specific occupational area only. Priority letter "B" should be assigned sparingly; in most cases, no more than two courses in any one program should be labeled "B." "B"-level courses must have Priority "C" prerequisites in the same program area.

Priority "C" -- Clearly Occupational: Courses generally taken by students in the middle stages of their programs should have a difficulty level sufficient to detract "drop-ins." Courses may be offered in several occupational programs within a broad area. The "C" priority, however, should also be used for courses within a specific program area when the criteria for "B" classification are not met. A "C"-level course should provide the student with entry-level job skills.

Priority "D" -- Possibly Occupational: "D" courses are those taken by students in the beginning stages of their occupational programs. The "D" priority can also be used for service (or survey) courses for other occupational programs.

Priority "E" -- Non-occupational.
SECTION VI: APPROVAL STATUS

1. APPROVAL STATUS:

a. ☐ New Course  Board Approval Date:  Effective Semester:
b. ☐ Addition of Existing District Course  College Approval Date:  Effective Semester:
c. ☐ Course Change*  College Approval Date:  Effective Semester:
d. ☑ Outline Update  College Approval Date:  10/17/09

* Changes to a course require the completion of a "Course Change Request" form and approval by the college's Curriculum Committee. In some cases districtwide approval is also required; see, Administrative Regulation E-65, section 3(c) for details.

SECTION VII: APPROVAL INFORMATION FOR NEW OR ADDED COURSES
(complete in consultation with Department Chair and the appropriate Academic Administrator)

1. ORIGINATOR: Lauren McKenzie

2. DEPARTMENT: Chemistry

3. IF THIS IS A NEW COURSE, INDICATE HOW THE COLLEGE PLANS TO MEET THE EXPENSE OF THIS COURSE:

☐ By additional funds. Describe:

☐ By deleting courses from the college catalog and course database. List specific courses to be deleted:

☐ By deleting sections of existing courses. List courses and number of sections to be deleted:

   First year:  Second year:  Third year:

☐ By rotating sections of existing courses. List courses and number of sections to be rotated, as well as the semesters in which they will be offered:

4. IMPACT -- Will this course directly impact other course offerings and/or associate degree or certificate programs on campus?
   ☒ No  (If yes, briefly explain how)

5. METHOD OF SUPPORT -- Indicate how the college plans to support the proposed course:

   Additional staff -- List additional staff needed:
Classroom -- List classroom type needed:

- **Regular classroom and chemistry laboratory**

Equipment -- List new equipment needed and indicate funding source for any new equipment:

- **Equipment needed for demonstrations and laboratories is adequate**

Supplies-- List supplies and indicate dollar value:

- **Supplies needed for laboratories is adequate**

Library/Learning Resources- The course initiator shall consult with the College Librarian and review the college library, book, periodical, and electronic resource collections relevant to this course. List additional titles and resources to be considered for purchase as funding permits:

- **Titles needed for the course are adequate**
CERTIFICATION AND RECOMMENDATION

☒ This course meets Title 5 requirements for Associate Degree applicable college credit towards an Associate of Arts Degree.

☐ This course meets Title 5 requirements but does not satisfy the requirements for an Associate Degree applicable course.

We certify that the information and answers above properly represent this course.

Originator

Date

Department/Cluster Chairperson

Date

Articulation Officer

Date

Librarian

Date

Dean (if applicable)

Date

Curriculum Committee Chairperson

Date

Academic Senate President

Date

Vice President, Academic Affairs

Date

College President

Date
**CREDIT**

Indicate whether the course meets the "standards for approval" for degree credit courses set forth in Title 5, section 55002(a)(2), which requires the course to have a degree of intensity, difficulty, and vocabulary that the curriculum committee has determined to be at the college level.

This course is **Degree Applicable**.

**THIS COURSE WILL BE AN APPROVED REQUIREMENT FOR AN APPROVED ASSOCIATE DEGREE OR CERTIFICATE PROGRAM:** Associate in Science in Chemistry

If yes, the course will be a program requirement portion of the "approved program" listed on the State Chancellor's Inventory of Approved Programs (approved programs can be found on the State Chancellor's Office website at...)

**GENERAL EDUCATION FOR TRANSFER:** Yes

Area requested: a. Natural Science
GENERAL EDUCATION REQUIREMENTS FOR THE ASSOCIATE DEGREE STATUS:
Area requested: a. Natural Science Approval date:

TRANSFER STATUS:
Transferable to the University of California: Yes UC approval date:
Transferable to the California State University: Yes College approval date: 2008

GENERAL EDUCATION FOR TRANSFER: Yes

IGETC
Area requested: 5-A: Physical Sciences
Date requested:
IGETC approval date:

CSU CERTIFICATION Yes
Date requested:
CSU approval date: 2008

ABBREVIATION FOR TRANSCRIPTS – 20 characters, assigned by District Office: Chem

COURSE CLASSIFICATION: Liberal Arts Sciences

TOP CODE – (6 digits xxxx.xx) 1905.00

SAM CODE (Student Accountability Model): E – Non-Occupational

PREREQUISITES, COREQUISITES, ADVISORIES ON RECOMMENDED PREPARATION, and LIMITATION ON ENROLLMENT
Prerequisites: Yes (If Yes, complete information below)
Corequisite: None (If Yes, complete information below)

CREDIT/NO CREDIT GRADING: No

REPETITIONS – Number of times course may be repeated for credit (three maximum): 0

CROSS REFERENCE – Is this course listed as equivalent in content to existing College/District courses in another discipline? No.

CREDIT BASIC SKILLS – Title 5, section 5502(d) defines basic skills as “courses in reading, writing, computation, and English as a Second Language, which are designated as non-degree credit courses pursuant to Title 5, section 5502(b).” No
If Yes, course must be non-degree applicable

COURSE SPECIFICALLY DESIGNED FOR STUDENTS WITH DISABILITIES – Title 5, section 5602 allows a course to be repeatable when continuing success of the students with disabilities is dependent on additional repetitions of a specific class. Is this course designated as an “approved special class” for students with disabilities? No

APPROVAL STATUS:
New Course

Board Approval Date:
Effective Semester:

Addition of Existing District Course

College Approval Date:

COOPERATIVE EDUCATION STATUS  -- Title 5, section 55252 allows for two types of Cooperative Education: 1) General Work Experience Education -- i.e., supervised employment, which is intended to assist students in acquiring desirable work habits, attitudes and career awareness, which need not be related to the students’ educational goals; or 2) Occupational Work Experience Education -- i.e., supervised employment, extending classroom based occupational learning at an on-the-job learning station, which is related to the students’ educational or occupational goal. Is this course part of the college’s approved cooperative work experience education program?  No

CATALOG COURSE DESCRIPTION  -- Provide a description of the course, including an overview of the topics covered:

First of two courses that introduces theory and laboratory topics dealing with general principles of chemistry. Chemical calculations are emphasized as well as laboratory precision and accuracy utilizing quantitative techniques.

CLASS SCHEDULE COURSE DESCRIPTION  -- Provide a brief description of the course, including an overview of the topics covered:

First of two courses that introduces theory and laboratory topics dealing with general principles of chemistry. Chemical calculations are emphasized as well as laboratory precision and accuracy utilizing quantitative techniques.

SPC CODE  -- 3 characters, assigned by District Office: 766
Prerequisite

All courses: Content Review Validation

Provide evidence that skills and knowledge acquired in the proposed prerequisite course are necessary for student success in the course by completing the Content Validation Table below.

1. List the skills or knowledge contained in the prerequisite course. (These items should be incorporated into the learning objectives of this course).

2. List skills or knowledge necessary for students to succeed in the requisite course for which the Prerequisite is proposed.

Certified by:

<table>
<thead>
<tr>
<th>Requisite Course Subject, Number, Title:</th>
<th>Target Course Subject, Number, and Title:</th>
<th>Check box where match occurs or list the number(s) of the matching exit skills on the left</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry 065 – Introductory Gen Chem.</td>
<td>Chemistry 101 – General Chemistry I</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>COLUMN 1: COURSE OBJECTIVES - EXIT SKILLS (List all exit skills, repeat if needed)</th>
<th>COLUMN 2: TARGET COURSE - ENTRY SKILLS (List all entry skills, repeat if needed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metric system, finding relationships between metric units, conversion factors, problem solving, density, specific gravity, temperature.</td>
<td>Metric system, finding relationships between metric units, conversion factors, problem solving, density, specific gravity, temperature.</td>
</tr>
<tr>
<td>Elements and symbols, the periodic table parts of the atom, atomic number, and mass number, isotopes, Atomic Mass, electron arrangement, periodic law, energy-level changes, biological reactions to sunlight.</td>
<td>Elements and symbols, the periodic table parts of the atom, atomic number, and mass number, isotopes, Atomic Mass, electron arrangement, periodic law, energy-level changes, biological reactions to sunlight.</td>
</tr>
<tr>
<td>Outermost electrons, electron dot structures, ions, octet rule, cations, anions, ionic formulas, naming of ionic compound, covalent compounds, double and triple bonds, Lewis dot structures, polyatomic ions, types of covalent bonding.</td>
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</tr>
<tr>
<td>Chemical quantities and equations. The mole concept, Avogadro's number, conversions between number of moles and mass, molecular mass, mass of 1 mole of a compound, physical and chemical change; chemical equations, balancing equations; calculations based on balanced chemical equations.</td>
<td>Chemical quantities and equations. The mole concept, Avogadro's number, conversions between number of moles and mass, molecular mass, mass of 1 mole of a compound, physical and chemical change; chemical equations, balancing equations; calculations based on balanced chemical equations.</td>
</tr>
<tr>
<td>Nuclear radiation and symbols, natural radioactivity; nuclear reactions, radiation detection and protection; artificial radioactivity, half-life of a radio-isotope; units of radiation measurement; uses in medicine</td>
<td>Nuclear radiation and symbols, natural radioactivity; nuclear reactions, radiation detection and protection; artificial radioactivity, half-life of a radio-isotope; units of radiation measurement; uses in medicine</td>
</tr>
<tr>
<td>States of matter, changes of state, energy heat, other forms of energy; potential and kinetic energy, gasoline as fuel, work measuring heat energy; energy in changes of state, calorimetry.</td>
<td>States of matter, changes of state, energy heat, other forms of energy; potential and kinetic energy, gasoline as fuel, work measuring heat energy; energy in changes of state, calorimetry.</td>
</tr>
<tr>
<td>Kinetic molecular theory, gas pressure, properties of gases, pressure and volume, blood gases and respiratory therapy; gas laws.</td>
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</tr>
<tr>
<td>Solutions, nature of solute and solvent; water as a solvent; solubility, ionic equations for solution formation; electro-lytes; soluble and insoluble salts; reactions of salts in solution.</td>
<td>Solutions, nature of solute and solvent; water as a solvent; solubility, ionic equations for solution formation; electro-lytes; soluble and insoluble salts; reactions of salts in solution.</td>
</tr>
<tr>
<td>Percent concentration, calculations using percent concentration, dilutions, molarity diffusion and osmosis, isotonic solutions, dialysis.</td>
<td>Percent concentration, calculations using percent concentration, dilutions, molarity diffusion and osmosis, isotonic solutions, dialysis.</td>
</tr>
<tr>
<td>Acids and bases; ionization of water, pH scale.</td>
<td>Acids and bases; ionization of water, pH scale.</td>
</tr>
<tr>
<td>Calculation of pH; neutralization reactions, buffers.</td>
<td>Calculation of pH; neutralization reactions, buffers.</td>
</tr>
<tr>
<td>-----------------------------------------------------</td>
<td>-----------------------------------------------------</td>
</tr>
<tr>
<td>The saturated hydro-carbon; an introduction to the study of organic compounds; properties of organic and inorganic compounds, carbon, condensed f formulas, naming the alkanes.</td>
<td>The saturated hydro-carbon; an introduction to the study of organic compounds; properties of organic and inorganic compounds, carbon, condensed f formulas, naming the alkanes.</td>
</tr>
<tr>
<td>Organic reactions and functional groups reactions of alkanes, haloalkanes; unsaturated hydrocarbons, reactions of alkenes, naming of alkenes, aromatic compounds, naming of aromatic compounds.</td>
<td>Organic reactions and functional groups reactions of alkanes, haloalkanes; unsaturated hydrocarbons, reactions of alkenes, naming of alkenes, aromatic compounds, naming of aromatic compounds.</td>
</tr>
</tbody>
</table>

Select the most appropriate basis for validation and provide the necessary documentation: (Mouse over • for details.)

- □ Advisories/recommended prerequisites. •
- X Course within the same discipline. •
- □ Course outside of discipline closely related but not English or Math. •
- □ Required by a four year transfer institution. •
- □ Computation or Communication Skill courses outside of a discipline. •
- □ Health and Safety. •
- □ Imposed by law or contract. •
- □ Program prerequisites •
- □ Recency, GPA, and Other Measures of Readiness Prerequisites. •
- □ Placement based on skills assessment •

DISCIPLINE FACULTY HAVE REVIEWED THE PREREQUISITE/COREQUISITE AND TARGET COURSE SKILLS LISTED ABOVE AND HAVE DETERMINED THAT TAKING THE PREREQUISITE/COREQUISITE COURSE WILL PROVIDE CONCEPTS/SKILLS NECESSARY FOR SUCCESS IN THE TARGET COURSE. FOR ADVISORY COURSES, THE DISCIPLINE FACULTY HAVE DETERMINED THAT TAKING THE ADVISORY COURSE WILL BROADEN AND/OR DEEPEN STUDENT LEARNING, BUT IS NOT REQUIRED FOR SUCCESS IN THE TARGET COURSE.

Discipline Faculty:

__________________________  _______________________
Signature  Date

__________________________  _______________________
Signature  Date

__________________________  _______________________
Division Chairperson  Date

__________________________  _______________________
Curriculum Committee Chairperson  Date
LA HARBOUR COLLEGE  
Student Learning Outcomes (SLOs) Assessment Report  
Course Assessment

Division: Math Physical Science  
Course Number and Name: CHEM 101 General Chemistry I  
Program Contact Person: Joachin Arias  
Reviewed by: __________________________, Academic Dean  
Date: __________________________

<table>
<thead>
<tr>
<th>Institutional Mission &amp; Goals</th>
<th>Course Intended Outcomes</th>
<th>Means of Assessment and Criteria for Success</th>
<th>Summary of Data Collected</th>
<th>Use of Results</th>
</tr>
</thead>
</table>
| 2                            | 1) Demonstrate knowledge of atomic structure including modern quantum theory and electron configurations.  
                                | 2) Display knowledge of molecular structure, chemical bonding including valence bond theory and molecular orbital theory.  
                                | 3) Balance chemical equations.  
                                | 4) Solve chemical reaction stoichiometry problems.  
                                | 5) Solve problems involving chemical thermodynamics.  
                                | 6) Solve problems involving solution properties.  
                                | 7) Solve problems in solid state chemistry.  
                                | 8) Display an understanding of phase diagrams. | Means: Summarize an | |
|   | 9) Interpret a chemical laboratory procedure. | experimental procedure into a flow-chart which will include a clearly stated objective for the experiment.  
Criteria: 90% of the students will score 80% or higher on a department analytic rubric. |
|---|---|---|
| 1 | 10) Compose a scientific report. | Means: On a word processor type a scientific report from collected laboratory data.  
Criteria: 70% of the students will score 70% or higher on a department analytic rubric. |
| 2 | 11) Collect, organize and analyze laboratory data. | Means: The organization of data/observations into data tables which include proper labels and units.  
Criteria: 90% of the students will score 80% or higher on a department analytic rubric. |
| 2 | 12) Demonstrate proper laboratory skills. | Means: Solve for an unknown sample by qualitative or quantitative techniques.  
Criteria: 70% of the students will score 70% or higher on a department analytic rubric. |
17. COURSE CONTENT (MATH 216)
(Please outline by topics or activities and include time schedule or week)
(Distributive-Learning courses: Allocation of time may [or may not] be consistent with traditional course
hours/weeks. It will vary from student to student. See approved course outlines for examples.)

<table>
<thead>
<tr>
<th>Time Allocated</th>
<th>Topic or Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>7 hours</td>
<td>Basic probability: counting techniques, definitions and formulas</td>
</tr>
<tr>
<td>4 hours</td>
<td>Basic statistics: descriptive and inferential formulas</td>
</tr>
<tr>
<td>6 hours</td>
<td>Pedagogy of basic geometric concepts</td>
</tr>
<tr>
<td>3 hours</td>
<td>Introduction to Networks</td>
</tr>
<tr>
<td>7 hours</td>
<td>Geometric congruency and similarity</td>
</tr>
<tr>
<td>3 hours</td>
<td>Geometric constructions</td>
</tr>
<tr>
<td>3 hours</td>
<td>Cartesian coordinate system. Solution of linear systems of equations</td>
</tr>
<tr>
<td>7 hours</td>
<td>Pedagogy of linear measurement, volume and Pythagorean Theorem</td>
</tr>
<tr>
<td>7 hours</td>
<td>Motion geometry</td>
</tr>
<tr>
<td>7 hours</td>
<td>Introduction to tessellations</td>
</tr>
</tbody>
</table>

Note: The Carnegie Rule and Title 5 section 55002 sets forth the minimum standards which require:
1 hour lecture with 2 hours homework = **1 unit**  
Lecture also includes discussion and/or demonstration
2 hours of lab with homework = **1 unit**  
3 hours of lab without homework = **1 unit**.
Laboratory includes activity and/or studio hours.

State number of hours (54) for activities if scheduled in less than one semester.

Use additional pages if necessary.
Los Angeles Community College District

COURSE OUTLINE
(Replaces PNCR and Course Outline)

Section I: BASIC COURSE INFORMATION

OUTLINE STATUS: Course Update

1. COLLEGE: Harbor

2. SUBJECT (DISCIPLINE) NAME\(^1\): Chemistry
   (40 characters, no abbreviations)

3. COURSE NUMBER: 211

4. COURSE TITLE: Organic Chemistry for Science Majors I

5. UNITS: 5

6. CATALOG COURSE DESCRIPTION -- Provide a description of the course, including an overview of the topics covered:

   This course introduces organic chemistry emphasizing the structure, stereochemistry and reactions of carbon compounds. Laboratory work covers preparation and isolation of organic compounds and the determination of their physical and chemical properties.

7. CLASS SCHEDULE COURSE DESCRIPTION -- Provide a brief description of the course, including an overview of the topics covered:

   This course introduces organic chemistry emphasizing the structure, stereochemistry and reactions of carbon compounds. Laboratory work covers preparation and isolation of organic compounds and the determination of their physical and chemical properties.

8. INITIAL COLLEGE APPROVAL DATE:

9. UPDATES (check all applicable boxes):

   - [x] Content
   - [ ] Objectives
   - [ ] College Specific Course Attributes/Data Elements
   - [ ] Districtwide Course Attributes/Data Elements
   - [ ] Other (describe)

   Last Update:

10. CLASS HOURS:

    | "Standard Hours" per Week (based on 18 weeks) | Total Hours per Term (hrs per week x 18) | Units |
    |---------------------------------------------|----------------------------------------|-------|

\(^1\) Underlined course attributes are the same for the course throughout the LACCD; all other course attributes are college specific.
11. PREREQUISITES, COREQUISITES, ADVISORIES ON RECOMMENDED PREPARATION, and LIMITATION ON ENROLLMENT

Note: The LACCD's Policy on Prerequisites, Corequisites and Advisories requires that the curriculum committee take a separate action verifying that a course's prerequisite, corequisite or advisory is an "appropriate and rational measure of a student's readiness to enter the course or program" and that the prerequisite, corequisite or advisory meets the level of scrutiny delineated in the policy.

Prerequisites: Yes  (If Yes, complete information below)

<table>
<thead>
<tr>
<th>Subject</th>
<th>Number</th>
<th>Course Title</th>
<th>Units</th>
<th>Validation Approval Date (official use only)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry</td>
<td>102</td>
<td>General Chemistry II</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

Corequisite: None  (If Yes, complete information below)

Advisories: None  (If Yes, complete information below)

12. REPETITIONS — Number of times course may be repeated for credit (three maximum): 0 (see: Section V, #9)

13. OTHER LIMITATIONS ON ENROLLMENT (see Title 5, Section 58105 and Board Rule 6803 for policy on allowable limitations. Other appropriate statutory or regulatory requirements may also apply):

N/A
Section II: COURSE CONTENT AND OBJECTIVES

1. COURSE CONTENT AND OBJECTIVES:

<table>
<thead>
<tr>
<th>COURSE CONTENT AND SCOPE – Lecture:</th>
</tr>
</thead>
<tbody>
<tr>
<td>If applicable, outline the topics included in the lecture portion of the course (outline reflects course description, all topics covered in class).</td>
</tr>
<tr>
<td>Hours per topic</td>
</tr>
<tr>
<td>COURSE OBJECTIVES - Lecture (If applicable):</td>
</tr>
<tr>
<td>Upon successful completion of this course, the student will be able to... (Use action verbs – see Bloom’s Taxonomy below for “action verbs requiring cognitive outcomes.”)</td>
</tr>
<tr>
<td>Bonds and bond characters, Lewis structure electronegativity, polarity of organic compounds</td>
</tr>
<tr>
<td>Organic molecules, hybridization, empirical formula, molecular weight</td>
</tr>
<tr>
<td>Alkanes, reactions of alkanes, conformational analysis, cycloalkanes, alkane nomenclature, mechanism of halogenation, structures</td>
</tr>
<tr>
<td>Study of chemical reactions</td>
</tr>
<tr>
<td>Stereochemistry, chirality of organic molecules</td>
</tr>
<tr>
<td>Alkyl halides, nucleophiles, nucleophilic reactions, mechanisms and reaction kinetics</td>
</tr>
<tr>
<td>Structure and nomenclature, reactions and reactivity</td>
</tr>
<tr>
<td>Unsaturation in organic chemistry, alkenes nomenclature.</td>
</tr>
<tr>
<td>Alkynes, reactions of alkynes</td>
</tr>
<tr>
<td>Alcohols, preparation and reactivity</td>
</tr>
<tr>
<td>Total Lecture hours*</td>
</tr>
</tbody>
</table>

2 In general “activity” courses or portions of courses are classified "laboratory."

<table>
<thead>
<tr>
<th>COURSE CONTENT AND SCOPE – Laboratory:</th>
</tr>
</thead>
<tbody>
<tr>
<td>If applicable, outline the topics included in the laboratory portion of the course (outline reflects course description, all topics covered in class).</td>
</tr>
<tr>
<td>Hours per Topic</td>
</tr>
<tr>
<td>COURSE OBJECTIVES - Laboratory (If applicable):</td>
</tr>
<tr>
<td>Upon successful completion of this course, the student will be able to... (Use action verbs – see Bloom’s Taxonomy below for “action verbs requiring cognitive outcomes.”)</td>
</tr>
<tr>
<td>Interpreting and presenting physical constants of organic compounds. Using reference books.</td>
</tr>
<tr>
<td>Solubility and melting point determination and correlation with purity of organic compounds.</td>
</tr>
<tr>
<td>Molecular modeling: Making and drawing models of conformations of cyclohexane, cyclohexene, butane, and 2-butene.</td>
</tr>
<tr>
<td>Column chromatography</td>
</tr>
<tr>
<td>Isolation of Eugenol from cloves</td>
</tr>
<tr>
<td>Isolation of caffeine from tea bags</td>
</tr>
<tr>
<td>Refractive index</td>
</tr>
<tr>
<td>4-methylcyclohexene</td>
</tr>
<tr>
<td>Ethanol from sucrose</td>
</tr>
<tr>
<td>TLC of analgesic drugs</td>
</tr>
</tbody>
</table>

Demonstrate observational skills while performing laboratory experiments

Utilize modern chemical equipment in the laboratory

| Interpreting and presenting physical constants of organic compounds. Using reference books. | 6 |
| Solubility and melting point determination and correlation with purity of organic compounds. | 9 |
| Molecular modeling: Making and drawing models of conformations of cyclohexane, cyclohexene, butane, and 2-butene. | 6 |
| Column chromatography | 9 |
| Isolation of Eugenol from cloves | 9 |
| Isolation of caffeine from tea bags | 9 |
| Refractive index | 6 |
| 4-methylcyclohexene | 9 |
| Ethanol from sucrose | 9 |
| TLC of analgesic drugs | 9 |
2. REQUIRED TEXTS:
   Provide a representative list of textbooks and other required reading; include author, title and date of publication:

   K. Pavia et al, Introduction to Organic Laboratory Techniques, a small scale approach, Thompson Learning, 2003

3. SUPPLEMENTARY READINGS:
   Reading assignments may include, but are not limited to the following:

   None

4. WRITING ASSIGNMENTS:
   Title 5, section 55002 requires grades to be "based on demonstrated proficiency in subject matter and the ability to demonstrate that proficiency, at least in part, by means of essays or, in courses where the curriculum committee deems them to be appropriate, by problem solving exercises or skills demonstrations by students." Writing assignments in this course may include, but are not limited to the following:

   Short scientific article critiques such as The Other Half of the Brain. Scientific

5. REPRESENTATIVE OUTSIDE ASSIGNMENTS:
   Out of class assignments may include, but are not limited to the following:

   Write a short paper on unsaturation in organic chemistry

6. REPRESENTATIVE ASSIGNMENTS THAT DEMONSTRATE CRITICAL THINKING:
   Title 5, section 55002(a) requires that a degree-applicable course have a level of rigor that includes "critical thinking and the understanding and application of concepts determined by the curriculum committee to be at college level". Critical thinking may include, but is not limited to analysis, synthesis, and evaluation. Provide examples of assignments that demonstrate critical thinking.

   Compare and contrast the value and hazards of analgesic drugs

7. METHODS OF EVALUATION:
   Title 5, section 55002 requires grades to be "based on demonstrated proficiency in subject matter and the ability to demonstrate that proficiency, at least in part, by means of essays, or, in courses where the curriculum committee deems them to be appropriate, by problem solving exercises or skills demonstrations by students." Methods of evaluation may include, but are not limited to the following (please note that evaluation should measure the outcomes detailed "Course Objectives" at the beginning of Section I):

   Exams, quizzes, written homework assignments, laboratory experiments
8. METHODS OF INSTRUCTION:

Methods of instruction may include, but are not limited to the following:

- Lecture
- Discussion
- Laboratory
- Activity
- Field Experience
- Independent Study
- Other (explain)

9. SUPPLIES:

List the supplies the student must provide.

- Notebook, writing utensil, textbook, laboratory manual

10. COMPUTER COMPETENCY:

If applicable, explain how computer competency is included in the course.

- Students will be asked to research a topic of interest using the Internet

11. INFORMATION COMPETENCY:

Information competency is the ability to find, evaluate use, and communicate information in all its various formats. It combines aspects of library literacy, research methods and technological literacy. Information competency includes consideration of the ethical and legal implications and requires the application of both critical thinking and communications skills. If applicable, explain how information competency is included in the course.

- Students will be asked to compare and contrast topics presented in class with information found on the Internet

12. DIVERSITY:

If applicable, explain how diversity (e.g., cultural, gender, etc.) is included in the course.

- N/A

13. SCANS COMPETENCIES (required for all courses with vocational TOP Codes; recommended for all courses):

SCANS (Secretary’s Commission on Necessary Skills) are skills the Department of Labor identified, in consultation with business and industry leaders, which reflect the skills necessary for success in the workplace. Check the appropriate boxes to indicate the areas where students will develop the following skills (please note that all SCANS competencies do not apply to all courses):

- **Managing Time:** Selecting relevant goal-related activities, ranking them in order of importance, allocating time to activities, and understanding, preparing and following schedules.

- **Managing Money:** Using or preparing budgets, including making cost and revenue forecasts; keeping detailed records to track budget performance, and making appropriate adjustments.
INTERPERSONAL

☐ Participating as Member of a Team: Working cooperatively with others and contributing to group's efforts with ideas, suggestions and effort.

☐ Teaching Others New Skills: Helping others learn needed knowledge and skills.

☐ Exercising Leadership: Communicating thoughts, feelings, and ideas to justify a position, encouraging, persuading, convincing or otherwise motivating an individual or group, including responsibly challenging existing procedures, policies or authority.

☐ Negotiating: Working toward agreement that may involve exchanging specific resources or resolving divergent interests.

☒ Working with Cultural Diversity: Working well with men and women and with people from a variety of ethnic, social, or educational backgrounds.

INFORMATION

☒ Acquiring and Evaluating Information: Identifying a need for data, obtaining the data from existing sources or creating them, and evaluating their relevance and accuracy.

☒ Organizing and Maintaining Information: Organizing, processing and maintaining written or computerized records and other forms of information in a systematic fashion.

☒ Interpreting and Communicating Information: Selecting and analyzing information and communicating the results of others, using oral, written, graphic, pictorial, or multimedia methods.

☒ Using Computers to Process Information: Employing computers to acquire, organize, analyze and communicate information.

SYSTEMS

☐ Understanding Systems: Knowing how social, organizational and technological systems work and operating effectively with them.

☐ Monitoring and Correcting Performance: Distinguishing trends, predicting impacts of actions on system operations, diagnosing deviations in the functioning of a system/organization, and taking necessary steps to correct performance.

☐ Improving or Designs Systems: Making suggestions to modify existing systems in order to improve the quality of products or services and developing new or alternative systems.

TECHNOLOGY

☐ Selecting Technology: Judging which sets of procedures, tools or machines, including computers and their programs, will produce the desired results.

☐ Applying Technology to Tasks: Understanding overall intent and proper procedures for setting up and operating machines, including computers and their reprogramming systems.

☐ Maintaining and Troubleshooting Equipment: Preventing, identifying, or solving problems with equipment, including computers and other technologies.
Section III: RELATIONSHIP TO COLLEGE PROGRAMS

1. THIS COURSE WILL BE AN APPROVED REQUIREMENT FOR AN APPROVED ASSOCIATE DEGREE OR CERTIFICATE PROGRAM: Yes

   a. If yes, the course will be a portion of the "approved program" listed on the State Chancellor’s Inventory of Approved Programs (approved programs can be found on the State Chancellor’s Office website at http://misweb.cccco.edu/esed/webproginv/prod/invmenu.htm

Associate of Science Degree in Chemistry

NOTE: In order for a course to be approved as a requirement for an associate degree or certificate program, the program must be listed on the State Chancellor’s Office Inventory of Approved Programs AND the course must be listed in the college catalog as either a requirement or an elective for the program. If course is not part of an approved program at the college adopting the course, it will be considered to be a "stand-alone" course, and is subject to the State Chancellor’s approval criteria. The college must complete and submit the Chancellor’s Office "APPLICATION FOR APPROVAL OF CREDIT" form. Certain courses are granted "blanket approval" by the State Chancellor’s Office and do not require separate approval. See the Chancellor’s Office Program and Course Approval Handbook for details. LACCD Skills Certificates are not State approved programs and are not listed on the Chancellor’s Office Inventory of Approved Programs.

2. GENERAL EDUCATION REQUIREMENTS FOR THE ASSOCIATE DEGREE STATUS:

   a. Area requested: None Approval date:

If applicable, provide an explanation of how the course meets the General Education parameters for one of the five general education areas – Natural Sciences, Social and Behavioral Sciences, Humanities, Language and Rationality, Health and Physical Education -- contained in Board Rule 6201.14 - General Education Requirements.

http://marlin.laccd.edu/district/BoardRules_AdmRegs/boardrules.htm

   a. 2nd Area requested: None Approval date:

If applicable, provide an explanation of how the course meets General Education parameters for an additional general education area – Natural Sciences, Social and Behavioral Sciences, Humanities, Language and Rationality, Health and Physical Education -- contained in Board Rule 6201.14 - General Education Requirements.

http://marlin.laccd.edu/district/BoardRules_AdmRegs/boardrules.htm
Section IV: Articulation Information

1. Transfer Status:
   a. Transferable to the University of California: Yes
   b. UC approval date: 2008
   c. Transferable to the California State University: Yes
   d. College approval date: 2008

2. General Education for Transfer:

   IGETC Certification:
   a. Area requested: None
   b. Date requested:
   c. IGETC approval date:

   CSU Certification:
   a. Area requested: None
   b. Date requested:
   c. CSU approval date:

   If applicable, provide an explanation of how the course meets the appropriate General Education parameters, as defined in IGETC Certification Guidelines.

3. Major Requirement for Transfer – Will this course be articulated to meet lower division major requirements? Yes

   List college/university and the majors:

<table>
<thead>
<tr>
<th>College/University</th>
<th>Major(s)</th>
</tr>
</thead>
</table>

   CAN Number: CAN Sequence Number:
   CAN Approval – Date requested: Date approved:
Section V: SUPPLEMENTAL COURSE INFORMATION

1. DEPARTMENT/DIVISION NAME: Chemistry

2. DEPARTMENT/DIVISION CODE: 45

3. SUBJECT CODE -- 3 characters, assigned by District Office: 123 (existing subject codes are available on the LACCD web site at http://www.laccd.edu/curriculum/directory-programs-courses/index.htm

4. SUBJECT ABBREVIATION -- 7 characters, assigned by District Office: Chem

5. SPC CODE -- 3 characters, assigned by District Office: 766

6. ABBREVIATION FOR TRANSCRIPTS -- 20 characters, assigned by District Office: Chem

7. DEGREE CREDIT: Indicate whether the course meet the “standards for approval” for degree credit course set forth in Title 5, section 55002(a)(2), which requires the course to have a degree of intensity, difficulty, and vocabulary that the curriculum committee has determined to be at the college level:

This course is Degree Applicable

8. CREDIT/NO CREDIT GRADING: No

9. REPETITIONS -- Number of times course may be repeated for credit (three maximum): 0

How does the repetition of this course meet Title 5, section 58161 requirements? A course may be repeatable when, “course content differs each time it is offered, and that the student who repeats it is gaining an expanded educational experience for one of the following reasons: (A) Skills or proficiencies are enhanced by supervised repetition and practice within class periods; or (B) Active participatory experience in individual study or group assignments is the basic means by which learning objectives are obtained.”

10. PRIOR TO TRANSFERABLE LEVEL -- This course attribute applies to English, writing, ESL, reading and mathematics courses ONLY. If applicable, indicate how many levels below the transferable level this course should be placed: Not applicable

11. CREDIT BASIC SKILLS -- Title 5, section 55002(d) defines basic skills as “courses in reading, writing, computation, and English as a Second Language, which are designated as non-degree credit courses pursuant to Title 5, section 55002(b).” No

If Yes, course must be non-degree applicable.

12. CROSS REFERENCE -- Is this course listed as equivalent in content to existing College/District courses in another discipline? No

If Yes, list courses (documentation of cross-discipline agreement must be provided):

13. COURSE SPECIFICALLY DESIGNED FOR STUDENTS WITH DISABILITIES -- Title 5, section 56029 allows a course to be repeatable when continuing success of the students with disabilities is dependent on additional repetitions of a specific class. Is this course designated as an “approved special class” for students with disabilities? No
If yes, provide an explanation of how this course meets the requirements of Title 5, section 56029.

14. COOPERATIVE EDUCATION STATUS — Title 5, section 55252 allows for two types of Cooperative Education: 1) General Work Experience Education — i.e., supervised employment, which is intended to assist students in acquiring desirable work habits, attitudes and career awareness, which need not be related to the students’ educational goals; or 2) Occupational Work Experience Education — i.e., supervised employment, extending classroom based occupational learning at an on-the-job learning station, which is related to the students’ educational or occupational goal. Is this course part of the college’s approved cooperative work experience education program? No

15. COURSE CLASSIFICATION: Liberal Arts Sciences

Note: A course’s Classification, TOP Code and SAM code must be aligned – e.g., Courses with an “Occupational” Course Classification must have an “Occupational” TOP Code and a SAM Code of A, B, C, or D; courses that do not have an “Occupational” Course Classification cannot have an Occupational TOP Code and must have an “E” SAM Code. Courses coded as “basic skills” in #11 should be coded “Adult and Secondary Basic Skills.”

16. TOP CODE — (6 digits xxxx.xx) 1905.00

Course content should match discipline description in Taxonomy of Programs found at www.cccco.edu/c CCCo/esed/curric/curriculum.htm.

17. SAM CODE (Student Accountability Model): E - Non-Occupational

SAM Codes (see CCC Chancellor’s Office Student Accountability Model Operations Manual, 1984) should be assigned as follows:

Priority “A” – Apprenticeship: Courses designed for an indentured apprentice must have the approval of the State of California, Department of Industrial Relations Department, Division of Apprenticeship Standards.

Priority “B” – Advanced Occupational: Courses taken by students in the advanced stages of their occupational programs. Courses should be offered in one specific occupational area only. Priority letter “B” should be assigned sparingly; in most cases, no more than two courses in any one program should be labeled “B.” “B”-level courses must have Priority “C” prerequisites in the same program area.

Priority “C” – Clearly Occupational: Courses generally taken by students in the middle stages of their programs should have a difficulty level sufficient to deterdrop-ins.” Courses may be offered in several occupational programs within a broad area. The “C” priority, however, should also be used for courses within a specific program area when the criteria for “B” classification are not met. A “C”-level course should provide the student with entry-level job skills.

Priority “D” – Possibly Occupational: “D” courses are those taken by students in the beginning stages of their occupational programs. The “D” priority can also be used for service (or survey) courses for other occupational programs.

Priority “E” – Non-occupational.
SECTION VI: APPROVAL STATUS

1. APPROVAL STATUS:
   a. ☐ New Course
   b. ☐ Addition of Existing District Course
   c. ☐ Course Change*
   d. ☑ Outline Update

   Board Approval Date: ___________________________ Effective Semester:
   College Approval Date: ___________________________ Effective Semester:
   College Approval Date: ___________________________ Effective Semester:
   09/01/09

* Changes to a course require the completion of a "Course Change Request" form and approval by the college’s Curriculum Committee. In some cases districtwide approval is also required; see, Administrative Regulation E-65, section 3(c) for details.

SECTION VII: APPROVAL INFORMATION FOR NEW OR ADDED COURSES
(complete in consultation with Department Chair and the appropriate Academic Administrator)

1. ORIGINATOR: Lauren McKenzie

2. DEPARTMENT: Chemistry

3. IF THIS IS A NEW COURSE, INDICATE HOW THE COLLEGE PLANS TO MEET THE EXPENSE OF THIS COURSE:
   ☐ By additional funds. Describe:

   ☐ By deleting courses from the college catalog and course database. List specific courses to be deleted:

   ☐ By deleting sections of existing courses. List courses and number of sections to be deleted:
       First year: __________________ Second year: __________________ Third year: __________________

   ☐ By rotating sections of existing courses. List courses and number of sections to be rotated, as well as the semesters in which they will be offered:

4. IMPACT — Will this course directly impact other course offerings and/or associate degree or certificate programs on campus?
   ☑ Yes (If yes, briefly explain how)

5. METHOD OF SUPPORT — Indicate how the college plans to support the proposed course:
   Additional staff -- List additional staff needed:
   Existing staff
Classroom – List classroom type needed:

- **Regular classroom and chemistry laboratory**

Equipment – List new equipment needed and indicate funding source for any new equipment:

- **Equipment needed for demonstrations is adequate**

Supplies – List supplies and indicate dollar value:

- **Supplies needed for demonstrations is adequate**

Library/Learning Resources – The course initiator shall consult with the College Librarian and review the college library, book, periodical, and electronic resource collections relevant to this course. List additional titles and resources to be considered for purchase as funding permits:

- **Titles needed for the course are adequate**
CERTIFICATION AND RECOMMENDATION

☒ This course meets Title 5 requirements for Associate Degree applicable college credit towards an Associate of Arts Degree.

☐ This course meets Title 5 requirements but does not satisfy the requirements for an Associate Degree applicable course.

We certify that the information and answers above properly represent this course.

__________________________________________________________________________

Originator                        Date

__________________________________________________________________________

Department/Cluster Chairperson     Date

__________________________________________________________________________

Articulation Officer               Date

__________________________________________________________________________

Librarian                          Date

__________________________________________________________________________

Dean (if applicable)               Date

__________________________________________________________________________

Curriculum Committee Chairperson   Date

__________________________________________________________________________

Academic Senate President          Date

__________________________________________________________________________

Vice President, Academic Affairs   Date

__________________________________________________________________________

College President                  Date
DEPARTMENT/ DIVISION NAME: Chemistry/Math- Phy-Sci and Technology

DEPARTMENT/ DIVISION CODE: Chemistry

SUBJECT (DISCIPLINE) NAME: Chemistry

SUBJECT CODE – 3 characters, assigned by District Office: 123

SUBJECT ABBREVIATION — 7 characters, assigned by District Office: Chem

COURSE TITLE: Organic Chemistry for Science Majors I

COURSE NUMBER: 211

UNITS:

CLASS HOURS:

<table>
<thead>
<tr>
<th></th>
<th>Hours per week (based on 18 weeks)</th>
<th>Total Hours per term (hrs per week x 18)</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture</td>
<td>3</td>
<td>54</td>
<td>3</td>
</tr>
<tr>
<td>Lab/activity (w/ homework)</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Lab/activity (w/o homework)</td>
<td>6</td>
<td>108</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>3</td>
<td>162</td>
<td>5</td>
</tr>
</tbody>
</table>

DEGREE CREDIT: Indicate whether the course meets the "standards for approval" for degree credit course set forth in Title 5, section 55002(a)(2), which requires the course to have a degree of intensity, difficulty, and vocabulary that the curriculum committee has determined to be at the college level. This course is Degree Applicable.

THIS COURSE WILL BE AN APPROVED REQUIREMENT FOR AN APPROVED ASSOCIATE DEGREE OR CERTIFICATE PROGRAM: Associate in Science Degree in Chemistry

If yes, the course will be a program requirement portion of the "approved program" listed on the State Chancellor's Inventory of Approved Programs (approved programs can be found on the State Chancellor's Office website at

GENERAL EDUCATION FOR TRANSFER: No

Area requested: None Approval date: 
GENERAL EDUCATION REQUIREMENTS FOR THE ASSOCIATE DEGREE STATUS:
Area requested: None Approval date:

TRANSFER STATUS:
Transferable to the University of California: Yes UG approval date:
Transferable to the California State University: Yes College approval date: 2008

GENERAL EDUCATION FOR TRANSFER: No

IGETC
Area requested: None
Date requested: IGETC approval date:

CSU CERTIFICATION None
Date requested: CSU approval date:

ABBREVIATION FOR TRANSCRIPTS -- 20 characters, assigned by District Office: Chem

COURSE CLASSIFICATION: Liberal Arts Sciences

TOP CODE -- (6 digits xxxx.xx) 1905.00

SAM CODE (Student Accountability Model): E - Non-Occupational

PREREQUISITES, COREQUISITES, ADVISORIES ON RECOMMENDED PREPARATION, and LIMITATION ON ENROLLMENT:
Prerequisites: Yes (If Yes, complete information below)
Corequisite: None (If Yes, complete information below)

CREDIT/NO CREDIT GRADING: No

REPETITIONS -- Number of times course may be repeated for credit (three maximum): 0

CROSS REFERENCE -- Is this course listed as equivalent in content to existing College/District courses in another discipline? No

CREDIT BASIC SKILLS -- Title 5, section 5502(d) defines basic skills as "courses in reading, writing, computation, and English as a Second Language, which are designated as non-degree credit courses pursuant to Title 5, section 5502(b)." No If Yes, course must be non-degree applicable

COURSE SPECIFICALLY DESIGNED FOR STUDENTS WITH DISABILITIES -- Title 5, section 56029 allows a course to be repeatable when continuing success of the students with disabilities is dependent on additional repetitions of a specific class. Is this course designated as an "approved special class" for students with disabilities? No

APPROVAL STATUS:
Board Approval Date:

Effective Semester:

Addition of Existing District Course:

College Approval Date:

COOPERATIVE EDUCATION STATUS — Title 5, section 55252 allows for two types of Cooperative Education: 1) General Work Experience Education — i.e., supervised employment, which is intended to assist students in acquiring desirable work habits, attitudes and career awareness, which need not be related to the students' educational goals; or 2) Occupational Work Experience Education — i.e., supervised employment, extending classroom based occupational learning at an on-the-job learning station, which is related to the students' educational or occupational goal. Is this course part of the college's approved cooperative work experience education program? No.

CATALOG COURSE DESCRIPTION — Provide a description of the course, including an overview of the topics covered:

This course introduces organic chemistry, emphasizing the structure, stereochemistry and reactions of carbon compounds. Laboratory work covers preparation and isolation of organic compounds and the determination of their physical and chemical properties.

CLASS SCHEDULE COURSE DESCRIPTION — Provide a brief description of the course, including an overview of the topics covered:

This course introduces organic chemistry emphasizing the structure, stereochemistry and reactions of carbon compounds. Laboratory work covers preparation and isolation of organic compounds and the determination of their physical and chemical properties.

SPC CODE — 3 characters, assigned by District Office: 766
CHEMISTRY 212: COURSE SYLLABUS
INSTRUCTOR: BASIL O. IBE, Ph.D. PHONE: (310) 233-4495
OFFICE HRS: PH 107; T/Th, 8:30 - 10:00 p.m., Fri 3:00 pm-5:00 p.m.
E-mail #1: ibebasil@yahoo.com or e-mail #2: ibebo@lahc.edu

Lecture

Course Structure: Lecture: T/Th 5:20-6:45 p.m. PH 206
Four (4) regular in-class exams to be given at lecture time each normalized to 100%.

THERE WILL BE NO MAKE UP EXAMS. IF YOU MISS ONE EXAM,
THE NEXT EXAM COUNTS DOUBLE. This does not apply to the final exam.
Teacher must be notified ahead of time by phone or by e-mail if unable to take
scheduled exam.

Final Examination: The final exam is worth 200 points, to be given in week of finals.
By College rule, every student must take the final exam.

Regular in-class unannounced quizzes, to be normalized to 100% at end of semester.
( THERE WILL BE NO MAKE UP QUIZ. IF YOU MISS ONE QUIZ, THE NEXT
QUIZ COUNTS DOUBLE.)

Regular take-home quizzes, to be normalized to 100% at end of semester.
Class Recitation: To be presented during laboratory session (as assigned). Scored at 100%.

Laboratory Sessions: Tu/Th 6:50-10:05 p.m. PH101
Lab Manual: Organic lab techniques A small scale approach. 2nd Ed. Pavia,

Students should prepare for the lab. Instructions will be given in lab and lab techniques will be
demonstrated when necessary.

Each student will need the following supplies: Hard cover, bound notebook for
lab data, blue or black pens for lab, closed toe shoes, and approved type of
goggles. Please no pencil and no colored pens.
You will also need a combination padlock (BLUE DIAL), MUST BE PURCHASED FROM
THE COLLEGE BOOKSTORE.

LAB REPORTS WILL BE NORMALIZED TO 100 POINTS AT THE END OF
THE SEMESTER. THERE WILL BE NO MAKE UP LABS.

Pre-lab Quiz: Unannounced pre-lab quiz will be given before lab. Scores will be
normalized to 100% at the end of the semester.

Cell phones, beepers or pagers must be turned off during class or lab. You lose 5 points for
each noncompliance, or a visit to the Dean’s office.
POINTS SUMMARY:
- 4 Exams x 100 points each 400 points
- Final exam 200 points
- Take home quizzes 100 points
- In-class unannounced quiz 100 points
- Laboratory report 100 points
- In-lab unannounced pre-lab quizzes 100 points
Total points possible 1,000 points

The grading curve.
GRADE ASSIGNMENT:  
920 - 1000 A
800 - 919 B
700 - 799 C
600 - 699 D
500 - 599 F

EXAM SCHEDULE SUMMARY
Please note that exams cover materials discussed in class as well as sections of textbook chapter covered in lectures and lab.

EXAM 1, Thursday March 8, 2007.
Chapters 13, 14, 15, and related laboratory sessions: Cyclic aliphatic compounds: conformational analysis, reactivity and stability. Aromatic compounds: aromaticity, reactions and reactivity of aromatic compounds

EXAM 2, Thursday April 12, 2007.
Chapters 16, 17, 18, and related laboratory sessions: Arenes: aromaticity, reactions and reactivity. Instrumental analysis: gas chromatography, mass spectroscopy, nuclear magnetic resonance spectroscopy (both proton and carbon-13 spectroscopy). Reaction of aldehydes and ketones.

Chapters 19, 20, 21, and related laboratory sessions: Functional groups in organic chemistry continued: Carboxylic acids and functional derivatives of carboxylic acid: structure, acidity, reactivity and identification of carboxylic acids. Carbanions, aldol and Claisen condensation

Chapters 22, 23, 24 and related laboratory sessions: Amines: reactions, preparation and properties, basicity and reactivity of amines, reductive amination, Hofmann reactions.

FINAL EXAM: Tuesday June 5, 2007 5:30-7:30 p.m.
Comprehensive examination of semester course work.
Have a safe and happy summer vacation.
<table>
<thead>
<tr>
<th>WEEK &amp; DATE</th>
<th>LECTURE TOPIC AND TEXTBOOK CHAPTER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1, 2/6</td>
<td>Chapter 13: Cyclic aliphatic hydrocarbons.</td>
</tr>
<tr>
<td>Week 2, 2/13</td>
<td>Chapter 13: Cyclic aliphatic hydrocarbons continued, begin chapter 14.</td>
</tr>
<tr>
<td>Week 3, 2/20</td>
<td>Chapter 14, aromatic compounds, aromaticity, stability and reactivity.</td>
</tr>
<tr>
<td>Week 4, 2/27</td>
<td>Chapter 14 continued, begin chapter 15.</td>
</tr>
<tr>
<td>Week 5, 3/6</td>
<td>Chapter 15: Electrophilic aromatic substitution, mechanisms and reactivity. Exam 1: Thursday March 8, 2007 @ 5:20 -6:45 p.m.</td>
</tr>
<tr>
<td>Week 6, 3/13</td>
<td>Chapter 16: Aromatic-aliphatic compounds, polynuclear aromatic hydrocarbons</td>
</tr>
<tr>
<td>Week 7, 3/20</td>
<td>Chapter 16 continued, begin chapter 17</td>
</tr>
<tr>
<td>Week 8, 3/27</td>
<td>Chapter 17 continued; spectroscopy and structure. March 31, 2006; Cesar Chavez day, school holiday.</td>
</tr>
<tr>
<td>Week 9, 4/3</td>
<td>SPRING BREAK SPRING BREAK</td>
</tr>
<tr>
<td>Week 10, 4/10</td>
<td>Chapter 18. Exam #2: Thursday April 12, 2007 @ 5:20 – 6:45 p.m.</td>
</tr>
<tr>
<td>Week 11, 4/17</td>
<td>Begin chapter 19. Chapters 19 and 20 are very related and are treated together. Carboxylic acids, structure properties and reactivity</td>
</tr>
<tr>
<td>Week 12, 4/24</td>
<td>Chapters 19 and 21 continued.</td>
</tr>
<tr>
<td>Week 13, 5/1</td>
<td>Chapter 21. Exam 3: Tuesday May 8, 2007 @ 5:20-6:45 p.m.</td>
</tr>
<tr>
<td>Week 14, 5/8</td>
<td>Chapter 22</td>
</tr>
<tr>
<td>Week 15, 5/15</td>
<td>Chapter 23.</td>
</tr>
<tr>
<td>Week 16, 5/22</td>
<td>Chapter 24.</td>
</tr>
<tr>
<td>Week 17, 5/29</td>
<td>Exam 4: Thursday May 31, 2007 @ 5:20-6:45 p.m.</td>
</tr>
<tr>
<td>Final Exam</td>
<td>Thursday June 5, 2007 @ 5:30-7:30 p.m. PH 106.</td>
</tr>
</tbody>
</table>
LAB EXPERIMENT

Note: Laboratory reports are due on the stated dates. (10 points will be deducted for lateness). Assigned problems in each lab should be done on a separate sheet of paper and turned in on the due date.

<table>
<thead>
<tr>
<th>Week/Date</th>
<th>Tuesday</th>
<th>Thursday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1, 2/6</td>
<td>Lecture: chapter 13 continued.</td>
<td>Lecture, Complete chapter 13. Assign lab lockers</td>
</tr>
<tr>
<td>Week 2, 2/13</td>
<td><strong>Experiment 1: Lab manual</strong> Exp. 17 page 135. Preparation of ethanol from sucrose. Please read pages 132 to 139 of lab manual.</td>
<td><strong>Experiment 2: Thin Layer Chromatography</strong> (TLC) of organic compounds. Page 38 of lab manual PART B. (Basil please see Sally before lab)</td>
</tr>
<tr>
<td>Week 3, 2/20</td>
<td>Complete Experiment #1. <em>(Lab report of exp. #2 due today)</em></td>
<td><strong>Experiment 3: Preparation of acetaminophen</strong>. <em>Lab manual pg 68-71. Lab report of Experiment #1 due today.</em></td>
</tr>
<tr>
<td>Week 4, 2/27</td>
<td><strong>Experiment 4: Organic qualitative analysis; tests for elements N, S, X. Experiment 55B of lab manual, pg 479-485</strong></td>
<td>Lecture followed by Exam 1 discussion: Lab report of experiment #3 is due today.</td>
</tr>
<tr>
<td>Week 5, 3/6</td>
<td><strong>Experiment 5: Organic qualitative analysis, tests for alcohols. Experiment 55H of lab manual, page 507-512. Lab report of experiment 4 is due today.</strong></td>
<td>Student recitation: As assigned</td>
</tr>
<tr>
<td>Week 6, 3/13</td>
<td><strong>Experiment 6: Diels-Alder reaction of cyclopentadiene with maleic anhydride. Experiment 49, page 417 of lab manual. Do questions 1and 3 page 421.</strong></td>
<td><strong>Experiment 7: Luminol. Experiment 51, page 435 of lab manual, parts A, B, C. Lab report of Experiment 5 is due today.</strong></td>
</tr>
<tr>
<td>Week 7, 3/20</td>
<td><strong>Experiment 7: Friedel-Crafts acylation of ethylbenzene. Experiment 59 pg 530 of lab manual. Do questions 2, 4, and 5, page 536-537, Lab report of Experiment 6 is due today.</strong></td>
<td><strong>Experiment 8: Aldol condensation reaction, prep of benzalacetophenones (chalcones). Exp 38 pg 322 of lab manual. Do questions 1 and 2 page 325. Lab report of experiment 7 is due today.</strong></td>
</tr>
<tr>
<td>Week 8, 3/27</td>
<td>Lecture/Dry lab</td>
<td>Recitation Lab report of experiment 8 due today.</td>
</tr>
<tr>
<td>Week 9, 4/3</td>
<td>SPRING BREAK</td>
<td>SPRING BREAK</td>
</tr>
<tr>
<td>Week</td>
<td>Activity</td>
<td>Notes</td>
</tr>
<tr>
<td>-----------</td>
<td>--------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>10, 4/10</td>
<td>Lecture, then review exam #2.</td>
<td>Experiment 9: Aldehydes and ketones. Experiment 55D lab manual pg 491-496.</td>
</tr>
<tr>
<td>11, 4/17</td>
<td><strong>Experiment 10</strong>: Coenzyme synthesis of benzoin. Exp 34A page 288 of lab manual.</td>
<td><strong>Complete experiment 10</strong> <strong>Do questions 1 and 4 page 293-294. Lab report of experiment 9 is due today.</strong></td>
</tr>
<tr>
<td>12, 4/24</td>
<td><strong>Experiment 11</strong>: Preparation of sulfanilamide. <strong>Experiment 46 pages 379-384 of lab manual.</strong> (Parts A and B).</td>
<td><strong>Complete experiment 11. Do questions 1 and 2, page 384. Lab report of Experiment 10 due today.</strong></td>
</tr>
<tr>
<td>14, 5/8</td>
<td>Exp 12 cont'd</td>
<td><strong>Complete Exp 12 if needed. Do questions 4 and 5 on page 340.</strong></td>
</tr>
<tr>
<td>15, 5/15</td>
<td>Discuss project if possible. <strong>Lab report of Experiment 12 due today.</strong></td>
<td><strong>Begin group project.</strong></td>
</tr>
<tr>
<td>16, 5/22</td>
<td>Complete group project.</td>
<td><strong>Sample Exam 4 and final Exam review.</strong></td>
</tr>
<tr>
<td>17, 5/29</td>
<td>Exam 4 @ 5:20-6:45 p.m. Check out of lab lockers.</td>
<td><strong>Comprehensive semester final Exam at 5:30-7:30 p.m. LA 127. Hand in lab report of group project.</strong></td>
</tr>
</tbody>
</table>
Spanish 001 Assessment Report

Fall 2008

BACKGROUND

In fall 2008, the Spanish 001 SLO Assessment committee developed an assessment project for Spanish 001. The committee met for the first time on September 6, 2008 from 1pm-4pm at Harbor in Drama Speech 102 (DS 102). The members of the committee are William Hernández, Chair, Kenneth Luna, Co-Chair, Delia Rentería, Co-Chair, Marlene Koven, and Edith Dimo. During this initial meeting, we discussed the following topics.

- Examination and any modifications of SLOs (Modifications were made and Lauren McKenzie, Chair of Curriculum Committee was notified)
- Selection of the SLO to be assessed
- The exercise or assignment that was to be used to assess the SLO
- The scoring rubric that was to be used in the assessment
- The final report due at the end of Fall 2008 semester

As a committee we chose to assess the third Student Learning Outcome (found below) for the course; it represents one of the four principle skills that students are expected to develop in the target language.

1. Reproduce simple patterns of speech based on classroom model with acceptable pronunciation.
2. Respond orally or in written form to simple questions on various topics and situations using basic elementary grammar and vocabulary.

3. Write simple sentences in Spanish that demonstrate appropriate use of first level elementary grammar structures, syntax, and vocabulary.

4. Demonstrate the ability to read, comprehend, and interpret simple narratives.

5. Identify and name some of the unique characteristics of Hispanic people, their countries, and cultures.

As a committee, we divided the SLO into four areas to be assessed:

- Vocabulary
- Grammar
- Syntax
- Spelling

MEANS

We created a question for students in all eight sections of Spanish 001 to answer. The question was to be given in the second exam of the semester. All Spanish 001 instructors were contacted by email and were provided with a copy of the scoring rubric and test question for the assessment. The second exam in Spanish 001 courses is given in mid October. By that time, students will have been exposed to basic sentence structure, subject pronouns, the verb ser (to be), subject verb agreement, and various descriptive adjectives. The test question was as follows.

Escríbete. Imagine that you’re Andrea, a Spanish 1 student like yourselves, who decides to say hello to a pen pal in Madrid. Write a five-sentence letter to tell her about your life at the university. Make sure to include the following:

- Introduce and describe yourself (minimum 2 adjectives)
• Describe your classes (minimum 2 adjectives)
• Describe your professors (minimum 2 adjectives)
• Describe a friend (minimum 2 adjectives)

You must use different adjectives in your descriptions.

Querida amiga:

________________________________

________________________________

________________________________

________________________________

Abrazos,

Andrea

CRITERIA
All 8 Spanish 001 instructors in all 8 sections of Spanish 001 were asked to give the test question to all students in their classes and randomly select a sampling comprising of 70% of their class population. The student population was based on class enrollments as of mid October 2008. Students who were formally enrolled but stopped attending were excluded from the assessment as well as students who audited the classes. In addition, 70% of each class population was to score a minimum of 60%. The committee approved 60% as the passing score by following other similar scoring systems, like, for example, the one used in the Advanced Placement Exam in Spanish. A passing score in the Advanced Placement Exam in Spanish is 3 out of 5, a 60%.

**Table 1**

<table>
<thead>
<tr>
<th>Class</th>
<th>Section#</th>
<th>Instructor</th>
<th>Class Enrollment</th>
<th>70% of Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spanish 001</td>
<td>0263</td>
<td>W. Hernandez</td>
<td>33 Students</td>
<td>23 Test Questions</td>
</tr>
<tr>
<td>Spanish 001</td>
<td>0264</td>
<td>E. Dimo</td>
<td>35 Students</td>
<td>24 Test Questions</td>
</tr>
<tr>
<td>Spanish 001</td>
<td>0261</td>
<td>C.P. Garay</td>
<td>28 Students</td>
<td>20 Test Questions</td>
</tr>
<tr>
<td>Spanish 001</td>
<td>3200</td>
<td>E. Heredia</td>
<td>25 Students</td>
<td>18 Test Questions</td>
</tr>
<tr>
<td>Spanish 001</td>
<td>3202</td>
<td>D. Renteria</td>
<td>25 Students</td>
<td>17 Test Questions</td>
</tr>
<tr>
<td>Spanish 001</td>
<td>6013</td>
<td>M.E. Villegas</td>
<td>15 Students</td>
<td>10 Test Questions</td>
</tr>
<tr>
<td>Spanish 001</td>
<td>3201</td>
<td>M. Koven</td>
<td>26 Students</td>
<td>18 Test Questions</td>
</tr>
<tr>
<td>Spanish 001</td>
<td>6026</td>
<td>M. Barrio De Mendoza</td>
<td>24 Students</td>
<td>17 Test Questions</td>
</tr>
</tbody>
</table>

**Total Students= 211**

**70% of 211= 147 Test Questions**
Furthermore, all instructors were asked to grade the test questions using the scoring rubric developed by the committee. Please refer to the next page. All 8 instructors read and graded the test questions. By November 5, 2008, they handed them in to the Chair of the assessment committee in sealed envelopes. On November 7, 2008, we, the assessment committee, met again in Office Village 8 (OV 8) from 4pm-9pm to read and score the test questions once more to assure proper accuracy and clear up any evident discrepancies in the previous scoring done by the instructors. We first normed ourselves to the rubric, as all 8 instructors did, but we made necessary changes to it. Although minor changes were made to the rubric, the scoring made by the instructors and the committee was very close. We read the test questions only looking for how well the students met the criteria in the four areas: Vocabulary Skills, Grammar Skills, Syntax, and Spelling.

**SCORING RUBRIC**

**Vocabulary Skills**

5 – Excellent

Student exceeds expectations

4 – Good

Student meets expectations (missing half of a criteria)

3 – Average

Student conveys message (missing one whole criteria)

2 – Deficient

Student demonstrates some problems in conveying message (missing two criteria)

1 – Incomprehensible

Student demonstrates unsatisfactory work (missing more than two criteria)

**Grammar Skills**
5 – Excellent

Student exceeds expectations; knows proper usage of grammar structures with zero errors

4 – Good

Student meets expectations with minimal errors (up to two errors)

3 – Average

Student conveys message with some errors (up to four errors)

2 – Deficient

Grammar structure usage impedes communication (more than four errors)

1 – Incomprehensible

Student demonstrates unsatisfactory work; student does not convey message

Syntax

5 – Excellent

Student uses proper word order

4 – Good

Student displays knowledge of word order with minimal errors (up to two errors)

3 – Average

Student displays knowledge of word order with some errors (up to four errors)

2 – Deficient

Word order impedes communication (more than four errors)

1 – Incomprehensible

Word order inhibits communication
Spelling

5 – Excellent
  No errors

4 – Good
  Up to 3 errors

3 – Average
  Up to 4 errors

2 – Deficient
  Up to 5 errors

1 – Incomprehensible
  More than 5 errors

RESULTS AND CONCLUSIONS

Assessment Data Breakdown

Overall Scores

Table 3

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Score</th>
<th>Number of Students</th>
<th>Number of Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>100%</td>
<td>20</td>
<td>6</td>
<td>120</td>
</tr>
<tr>
<td>95%</td>
<td>19</td>
<td>16</td>
<td>304</td>
</tr>
<tr>
<td>90%</td>
<td>18</td>
<td>20</td>
<td>360</td>
</tr>
<tr>
<td>85%</td>
<td>17</td>
<td>28</td>
<td>476</td>
</tr>
<tr>
<td>80%</td>
<td>16</td>
<td>25</td>
<td>400</td>
</tr>
<tr>
<td>75%</td>
<td>15</td>
<td>14</td>
<td>210</td>
</tr>
<tr>
<td>70%</td>
<td>14</td>
<td>25</td>
<td>350</td>
</tr>
<tr>
<td>%</td>
<td>Test Questions Read</td>
<td>Student Exceeds Expectations (5)</td>
<td>Student Meets Expectations (4)</td>
</tr>
<tr>
<td>-------</td>
<td>---------------------</td>
<td>----------------------------------</td>
<td>---------------------------------</td>
</tr>
<tr>
<td>65%</td>
<td></td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>60%</td>
<td></td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>55%</td>
<td></td>
<td>11</td>
<td>0</td>
</tr>
<tr>
<td>50%</td>
<td></td>
<td>10</td>
<td>1</td>
</tr>
<tr>
<td>45%</td>
<td></td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td>40%</td>
<td></td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>35%</td>
<td></td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>30%</td>
<td></td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>25%</td>
<td></td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>20%</td>
<td></td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Points Earned = 2,372

2,372 ÷ 2,940 = 81%

Scores By Criteria

Table 4

<table>
<thead>
<tr>
<th>Vocabulary Skills</th>
<th>Test Questions Read</th>
<th>Student Exceeds Expectations (5)</th>
<th>Student Meets Expectations (4)</th>
<th>Average (3)</th>
<th>Deficient (2)</th>
<th>Incomprehensible (1)</th>
<th>Percentage Demonstrating Competency</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>147</td>
<td>60</td>
<td>40</td>
<td>32</td>
<td>13</td>
<td>2</td>
<td>90%</td>
</tr>
<tr>
<td>Grammar Skills</td>
<td>147</td>
<td>46</td>
<td>53</td>
<td>30</td>
<td>16</td>
<td>2</td>
<td>88%</td>
</tr>
<tr>
<td>----------------</td>
<td>-----</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td>---</td>
<td>-----</td>
</tr>
<tr>
<td>Test Questions Read</td>
<td>Student Exceeds Expectations (5)</td>
<td>Student Meets Expectations (4)</td>
<td>Average (3)</td>
<td>Deficient (2)</td>
<td>Incomprehensible (1)</td>
<td>Percentage Demonstrating Competency</td>
<td></td>
</tr>
<tr>
<td>Syntax</td>
<td>147</td>
<td>122</td>
<td>21</td>
<td>3</td>
<td>0</td>
<td>1</td>
<td>99%</td>
</tr>
<tr>
<td>Test Questions Read</td>
<td>Student Exceeds Expectations (5)</td>
<td>Student Meets Expectations (4)</td>
<td>Average (3)</td>
<td>Deficient (2)</td>
<td>Incomprehensible (1)</td>
<td>Percentage Demonstrating Competency</td>
<td></td>
</tr>
<tr>
<td>Spelling</td>
<td>147</td>
<td>17</td>
<td>81</td>
<td>22</td>
<td>16</td>
<td>11</td>
<td>82%</td>
</tr>
</tbody>
</table>

After examining the data, the committee arrived at the following conclusion. The overall scores told us that the comprehensive achievement of the population assessed was 81%, a percentage that surpassed the required 60%. We arrived at this conclusion by taking the number of students assessed (147) multiplied by the maximum score that each one of them could achieve (20). This gives us a total amount of 2,940 overall maximum points. The population of students assessed (147) earned a total of 2,372 points (Please see Table 2). By dividing 2,372 by the total overall 2,940 possible points we get an 81%.

Although the overall score told us that students overwhelmingly surpassed the required goal of 60% by earning an overall 81%, we can see that some students achieved passing scores or higher by scoring higher in some categories over others (Vocabulary Skills, Grammar Skills, Syntax, and Spelling) and not achieving the same consistent score in all categories. Please see Table 4. Analyzing the scores in each category enabled us, the committee, to see where students need additional attention. The data tells us that students demonstrated high to average skills in all categories (vocabulary skills, grammar skills, syntax, and vocabulary). Students scored the highest in syntax, followed by vocabulary but still show the highest level of
deficiency and in comprehensibility in spelling, despite showing a high number of them meeting expectations in this category.

RECOMMENDATIONS

Based on the results of the assessment and the input from the members of the committee and instructors who participated in the assessment, we make the following recommendations to the Spanish discipline.

- We need to encourage instructors to require additional assignments that will help students strengthen their spelling skills.
- We need to encourage more testing in which a large focus is placed on spelling.

SAMPLE STUDENT TEST QUESTIONS AND SCORES

The following test questions are samples in which the students earned the same or very close to the same consistent score on all four criteria. Included are also samples in which students earned inconsistent scores across all four categories. For example, the 20 score paragraph received a “5” on providing clear evidence in relation to vocabulary skills, grammar skills, syntax, and spelling.

Spanish 001 Assessment Paragraph/Test Question- 20 Score

Vocabulary- 5 Score

Grammar- 5 Score

Syntax-5 Score

Spelling-5 Score
Me llamo Andrea. Soy alta y rubia. Mis clases son interesantes y difíciles. Mis profesores son excelentes y fascinantes. Mi amiga es rica y bonita.

Spanish 001 Assessment Paragraph/Test Question- 19 Score

Vocabulary- 5 Score
Grammar- 4 Score
Syntax-5 Score
Spelling-5 Score

Me llamo Andrea. Soy alta y rubia. Mis clases son excelentes y interesantes. Mis profesores son simpáticos y inteligentes. Mi amigo es guapo y popular.

Spanish 001 Assessment Paragraph/Test Question- 18 Score

Vocabulary- 4 Score
Grammar- 5 Score
Syntax-5 Score
Spelling-4 Score

Spanish 001 Assessment Paragraph/Test Question- 17 Score

Vocabulary- 4 Score
Grammar- 4 Score
Syntax-5 Score
Spelling-4 Score

Yo me llamo Andrea y soy rubia y alta. Soy muy simpático y tengo que hacer tres clases. Yo estudio biología, inglés y español. Mi profesores son muy inteligentes. Tengo una amiga y ella es muy simpática, extrovertida y interesante.

Spanish 001 Assessment Paragraph/Test Question- 16 Score

Vocabulary- 4 Score
Grammar- 4 Score
Syntax-4 Score
Spelling-4 Score


Mi nombre es Andrea. Soy fea y alta. Mis clases es geografía, música, y español. Mi profesor de la clases de español es interesante y bueno. Mi clase de español es no aburrida o mala. Mi amiga es bonita y baja.


Me llamo Andrea. El negro. Soy de tall
```
ACADEMIC SENATE OF LOS ANGELES HARBOR COLLEGE
FACULTY HIRING PRIORITIES COMMITTEE

Request for Position Fall 2008

DIVISION: Communications

DIVISION CHAIR: Carmen Carrillo

DEPARTMENT: Foreign Languages

POSITION REQUESTED: Full Time Foreign Language Instructor

NAME OF PERSON MAKING REQUEST: William Hernandez

NAME OF PERSON PRESENTING 10/24: William Hernandez

PHONE NUMBER/E-MAIL OF PRESENTER: Ext 4081/ whrmzd@aol.com

PREFERRED PRESENTATION TIMES:

1. 10am  2. 11am  3. 1pm

The Committee will attempt to take teaching schedules into consideration
when creating the calendar for questions and answers.
```
Please send one copy of your request to each of the FHPC committee members by Friday, October 10, 2008. Prepare your packets carefully, as the individual named above as the person presenting will be invited to a 15 minute question/answer period before the complete committee on Friday, Oct. 24 beginning at 8:30 in the President’s Conference Room. The last scheduled presentation will begin at 4:40 p.m. if needed. Thanks for your cooperation.
FACULTY HIRING REQUESTS for Academic Year 2008-2009

Division of Requested tenure track hire: Communications

Position requested: ___ Full Time Foreign Language Instructor

Presenter: (Must be someone other than the division representative to FHPC)

William Hernandez

Please refer to the “Guidelines/Timelines for Presenters”. Use ONLY this form. Destroy all old forms/copies. They will not be accepted. Please use 12-point type to complete your form. You will need to prepare 20 copies of this form for committee members. You may attach three additional pages of support. Please use standard 8½ x 11˝ paper.

NOTE: All Objective Criteria must address the mission and strategic goals of the College and should be reflected in unit plans.

Objective Criteria I: WSCH/FTE or Some Other Measure of Productivity: Give figures for the discipline of the requested hiring for each of the previous three years. Use the figure given at the first census.

<table>
<thead>
<tr>
<th></th>
<th>Fall 2005:</th>
<th>Fall 2006:</th>
<th>Fall 2007:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spanish</td>
<td>548</td>
<td>466</td>
<td>399</td>
</tr>
<tr>
<td>French</td>
<td>416</td>
<td>320</td>
<td>189</td>
</tr>
</tbody>
</table>
Objective Criteria II: WSCH: Provide discipline WSCH and trends for the previous three years.

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Fall 2005</th>
<th>Fall 2006</th>
<th>Fall 2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spanish</td>
<td>2,303</td>
<td>2,050</td>
<td>2,154</td>
</tr>
<tr>
<td>French</td>
<td>277</td>
<td>427</td>
<td>188</td>
</tr>
<tr>
<td>Japanese</td>
<td>147</td>
<td>199</td>
<td>202</td>
</tr>
</tbody>
</table>

Objective Criteria III: Waiting Lists: Explain how students are accommodated in the requested discipline with documentation or explanation.

All foreign language courses have a wait list of ten students per course.
**Objective Criteria IV: FT/PT RATIO:** Provide the ratio of full-time to part-time faculty for the Discipline of the requested hiring.

Currently there is 1 Full Time Spanish instructor and 11 adjunct Spanish instructors. Also, there is 1 Japanese adjunct instructor and 2 French adjunct instructors. In addition to Spanish, the Department’s goal is to expand in other languages such as French, Italian, and Asian languages.

**Objective Criteria #V: Program Vitality:** Explain how this request contributes to program vitality.

Extremely vital program. It serves the needs of transfer and occupational programs during the day and evening hours.

**Objective Criteria VI: College Balance:** Explain how the position requested is needed to maintain college balances for (I) introductory, intermediate, and advanced levels of course work; and/or for (ii) remedial, vocational, and transfer qualities.
It supports A.A. requirements (Both General AA Degree and the Spanish AA Degree) and General Education.

**Objective Criteria VII: Master Plan/Accreditation:** Explain how the requested discipline fulfills recommendations of the College Strategic Plan and Accreditation.

It meets the expectations of a well-rounded academic program. It also meets the college mission statement.

**Objective Criteria VIII: Advisory Committee and/or Program Review and Evaluation:** Explain how the requested hiring fulfills Advisory Committee/Program Review recommendations.

It has been completed. Full Time position has been in unit plan and program review since 2005.

**Objective Criteria IX: Efficient Use of Facilities:** Explain facilities use.
All foreign language classes are held in classrooms of 35+ seats.

**Objective Criteria X: Program Requirements:** Explain how the request meets program requirements.

Many transfer and certificated programs require a foreign language to fulfill Humanities. Students who major in Liberal Studies or in a teacher certification program must fulfill a foreign language requirement.

**Objective Criteria XI: Program Integration and Coordination:** Explain how request integrates/coordinates with other programs.

Foreign languages facilitate competency in a second language, especially those entering fields that require bilingualism.

**Objective Criteria XII: Program Impact:** Explain the anticipated results of not receiving a position priority this year.
The Foreign Languages Department as well as the newly created Spanish AA Degree is currently managed by 1 Full Time instructor and a total of 14 adjunct faculty members. This includes French and Japanese. Expanding a department to provide students with various course offerings in multiple languages requires additional Full Time faculty to help maintain a degree program like the Spanish AA previously mentioned, with curriculum development, textbook selection, writing course outlines, and other vital aspects. By not expanding the program, no new offerings can be made in foreign languages. As a result, students will not be offered an ample selection of courses and thus not meet their academic needs, causing them to enroll elsewhere.

The following objectives are optional.

Objective Criteria XIII: Compliance: If the program involves a state or federal compliance issue, explain and verify the nature of the compliance requirement with documentation.

N/A

Objective Criteria XIV: Position History: Provide details below. You may cover a maximum of three years.

_____ New  _____X___Replacement
FHPC Request prepared by: William Hernandez

Discipline presenter: William Hernandez

Division chair sign-off: 

Date: 10/8/08

Approved by FHPC 5/2002
During 2008-2009, the LAHC Department of Foreign Languages has engaged in two principle activities: Curriculum revision and the creation and assessment of measurable student learning outcomes.

Course outlines for Spanish and French courses have been reviewed and revised along with the student learning outcomes for each course; this was implemented by committees comprised of faculty members who teach and specialize in these two languages. Japanese course outlines and their student learning outcomes are scheduled to be reviewed, revised, and updated during the current semester; these student learning outcomes are also set to be assessed as well during the current semester.

In order to perform accurate assessments, faculty committees designed, are currently designing and solidifying measurable student learning outcomes for each course within their discipline, as previously pointed out. These student learning outcomes are not only found in this program review, but they are also posted on the campus Web page: they may be found at http://www.lahc.edu/facultystaff/slo/. The courses that currently have undergone the assessment process are Spanish 1 and 2 and French 1 and 2. Courses to be assessed during the current fall semester are Spanish 3 and 35 as well as Japanese 21. Once the assessments are concluded, complete reports will be available at the end of the current semester. Additional Spanish courses are scheduled to be assessed during the next semesters.

During fall 2008, one student learning outcome was measured for all sections of Spanish 1. In spring 2009, a total of three learning outcomes were measured for all sections of Spanish 2. Also in spring 2009, three student learning outcomes were assessed for French 1 and all six French 2 student learning outcomes were assessed as well during the same semester. Assessment measures have been written in narrative and chart formats. The reports give detailed descriptions on the appropriate tools and rubrics of evaluation for the student learning outcomes of each of the courses and present recommendations for improvement. Also, some of the reports review committee discussions, they show the students’ competence versus incompetence related to particular criteria of the student learning outcomes assessed and present samples of students’ work.

Outcomes have been measured through the development of specific rubrics, also created by committee faculty members who teach the languages in which they specialize. For example, the rubric used in the assessment of writing activities in Spanish 1 and 2 chart the student’s performance in the said assessment activities as excellent, good, average, deficient or incomprehensible. This reflects a 1-5 grading system. The one used in the French 2 writing assessment was very similar with a 1-5 grading system as well. In some of the assessments, students’ performance was measured on an overall general level and also by specific criteria of the student learning outcomes. For example, looking again at the assessment of the Spanish 1 & 2 student learning outcome on writing; it was based on

Appendix C
four different areas: vocabulary skills, grammar skills, syntax, and spelling. The one for
French 2 was based on mechanics and structure, vocabulary, content, and fluency. In
some cases, however, the rubrics were simpler and less complex, as we were looking for
objective t/f and short answers. For example, the rubric used to assess a cultural reading
activity in Spanish 2 had a 1-10 grading scale, with true/false and short answer questions.
The essential purpose of these rubrics is that they serve as effective tools to assess the
course student learning outcomes. Like the student learning outcomes, the reports related
to these assessments may be viewed on the college Web page.

Results have been analyzed by each of the student outcome committees made up of the
faculty who teach the Spanish and French elementary courses. And although the overall
results from assessments in both language courses, Spanish and French, indicate student
success that surpasses the initially set goals to be achieved in the assessments, the data
also indicates that there is room for improvement in certain areas. For example, one
common area where improvement is needed in both languages, Spanish and French, is
spelling. From these results and conclusions, committees have implemented teaching
strategies based on the recommendations and findings from the report.
Recommendations have included more classroom and homework assignments in which
spelling will be enforced more; other recommendations include changing textbooks, and
additional testing, again where additional attention is placed on spelling.

Lastly, the department has created program student learning outcomes that apply to all
languages: Spanish, French, and Japanese. These student learning outcomes represent an
additional layer in the assessment process that will be considered soon.

As mentioned earlier, all course outlines have been revised for Spanish and French, and
the ones for Japanese are currently undergoing revision. Furthermore, modifications
have been made concerning the student learning outcomes for all Spanish and French
courses, and are underway in Japanese courses. Some of the original student learning
outcomes needed to be revised for the purpose of measurability. The specific language
course committees created five to six measurable student learning outcomes for each
language course under their discipline. Some of the student learning outcomes have been
assessed and these assessments have yielded results that have been documented in reports
that are available for viewing. Lastly, and also previously pointed out, is that other
Spanish courses are being assessed this semester and others are due to be assessed during
the upcoming semesters. One Japanese course is set to be assessed this semester and
another one in spring 2010.
Communications Division
Partial Program Review
Department of Foreign Languages
Environmental Scan
Fall 2009

MISSION STATEMENT:

The mission of the Department of Foreign Languages is to foster growth and learning that raises the student’s awareness of various languages and cultures. This awareness fulfills the general education requirements for graduation and transfer. Students in department courses develop intellectual and cultural awareness, engage in critical and independent thought, and become productive members of the communities served.

To fulfill this mission, the Department of Foreign Languages established its student learning outcomes that apply to all students enrolled in Spanish, French, and Japanese. The Student Learning Outcomes will vary depending upon the language and the level of the courses.

Upon completion of the course in Spanish, French, and Japanese, students will be able to:

1. Demonstrate fluency and accuracy in listening comprehension skills in the target language.
2. Demonstrate fluency and accuracy in writing skills in the target language.
3. Demonstrate the ability to read and comprehend texts in the target language.
4. Express themselves orally with fluency and accuracy in the target language.
5. Demonstrate knowledge of the culture and customs of countries in which the target language is spoken.

Appendix D
ENVIRONMENTAL SCAN

Matriculated students enrolled in courses at LAHC take courses in Spanish, French, and Japanese in order to fulfill the requirements of an AA or AS degree or transfer to a four-year college or university. According to the LAHC Fact Book 2009, the Department of Foreign Languages’ retention rate in 2008 was 70% or higher (Spanish 78.4%, French 70.0%, and Japanese 79.4%). This indicates student need and demand for these language courses. Thus, it is indispensable that the Department of Foreign Languages review trends and changes that may affect student success. Some of the important areas to consider are economic trends, student and faculty demographics, technological trends, and competition in virtual space.

ECONOMIC TRENDS

The LAHC Fact Book 2009 indicates that students have clear educational goals. In 2008, 31.3% sought a career and technical education; 32.6% seek to transfer; 11.0% desire an Associate’s degree while 8.4% are working towards improving their basic skills. Approximately 19.2% of students are undecided as their educational goals. The Department of Foreign Languages is studying the 2008-2018 service area demographics and economic trends, including changes in occupations and changes in the industry as fastest growing occupations from 2008-2018 require a post-secondary degree.

Although projections that reflect the recession are currently unavailable, the 2008-2018 economic trends still show some growth in government related jobs, jobs in education, and in the health care industry. Please see the chart on the next page entitled Percent change in employment from Feb '08 to Feb. '09 by industry provide by the LAHC Office of Research. These are areas in the world of employment in which bilingualism is undoubtedly crucial.
Furthermore, the need for language specialists will continue to be in high demand. For example, according to the US Bureau of Labor Statistics, employment of interpreters and translators is projected to increase by 24 percent over the 2006-16 decade. “Demand will remain strong in languages referred to as “PFIGS”-Portuguese, French, Italian, German, and Spanish; other languages in demand will be the principle Asian languages-Chinese, Japanese, and Korean”. Also, according to the Bureau of Labor Statistics, “[t]his growth will be driven partly by strong demand in healthcare settings and work related to homeland security. Additionally, higher demand for interpreters and translators results directly from the broadening of international ties and the increase number of foreign language speakers in the United States. Both of these trends are expected to continue, contributing to relatively rapid growth in number of jobs for interpreters”. Please see charts on the next page.

Moreover, after the White-Non Hispanic population, the Asian population will also be a large population within the LAHC service area, as stated in the LAHC Fact Book 2009. As

Appendix D
pointed out by the Japanese consulate in our meeting at LAHC in November 2008, the growing number of Japanese companies and increase in population of Japanese and Japanese American who live and work in our service area is driving the demand for more course offerings in Japanese as well as an AA Degree in Japanese. The Japanese consulate supported his statements with statistics from the Japan Business Association of Southern California. For example, in the Los Angeles County, there are a total of 781 Japanese companies; this accounts for 65.9% of Japanese companies in southern California. In, the City of Torrance alone, there are 254 Japanese companies; this constitutes 21.4% of Japanese companies in southern California. Another important factor to consider is the increase in the numbers reflected in the Class Size Summary in the LAHC FACT Book 2009 for Japanese classes from 2006-2008. Class sizes have increased form 33.1 in 2006, to 33.7 in 2007, to 37.9 in 2008.

To meet these demands, the Department of Foreign Languages has created an AA Degree in Spanish, is also proposing the creation of an AA Degree in Japanese, and will be requesting an increase in Saturday classes to target students who have complicated week day schedules. Further, the department will propose additional conversation and community outreach courses. All of these proposals will help in meeting the future economic demands related to foreign languages in the job industry.

### Projections data from the National Employment Matrix

<table>
<thead>
<tr>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Interpreters and translators</td>
<td>27-3091</td>
<td>41,000</td>
<td>51,000</td>
<td>9,700</td>
<td>24</td>
</tr>
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</table>

NOTE: Data in this table are rounded. See the discussion of the employment projections table in the Handbook introductory chapter on Occupational Information Included in the Handbook.

### Projections data from the National Employment Matrix

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Teachers—preschool</td>
<td>--</td>
<td>3,954,000</td>
<td>4,433,000</td>
<td>479,000</td>
</tr>
</tbody>
</table>

Appendix D
## Projections data from the National Employment Matrix

<table>
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</thead>
<tbody>
<tr>
<td>kindergarten, elementary, middle, and secondary</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Preschool and kindergarten teachers</td>
<td>25-2010</td>
<td>607,000</td>
<td>750,000</td>
<td>143,000</td>
<td>23 PDF zipped XLS</td>
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<tr>
<td>Preschool teachers, except special education</td>
<td>25-2011</td>
<td>437,000</td>
<td>552,000</td>
<td>115,000</td>
<td>26 PDF zipped XLS</td>
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<tr>
<td>Kindergarten teachers, except special education</td>
<td>25-2012</td>
<td>170,000</td>
<td>198,000</td>
<td>28,000</td>
<td>16 PDF zipped XLS</td>
</tr>
<tr>
<td>Elementary and middle school teachers</td>
<td>25-2020</td>
<td>2,214,000</td>
<td>2,496,000</td>
<td>282,000</td>
<td>13 PDF zipped XLS</td>
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<tr>
<td>Elementary school teachers, except special education</td>
<td>25-2021</td>
<td>1,540,000</td>
<td>1,749,000</td>
<td>209,000</td>
<td>14 PDF zipped XLS</td>
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<tr>
<td>Middle school teachers, except special and vocational education</td>
<td>25-2022</td>
<td>658,000</td>
<td>732,000</td>
<td>74,000</td>
<td>11 PDF zipped XLS</td>
</tr>
<tr>
<td>Vocational education teachers, middle school</td>
<td>25-2023</td>
<td>16,000</td>
<td>15,000</td>
<td>-800</td>
<td>-5 PDF zipped XLS</td>
</tr>
<tr>
<td>Secondary school teachers</td>
<td>25-2030</td>
<td>1,133,000</td>
<td>1,187,000</td>
<td>54,000</td>
<td>5 PDF zipped XLS</td>
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<tr>
<td>Secondary school teachers, except special and vocational education</td>
<td>25-2031</td>
<td>1,038,000</td>
<td>1,096,000</td>
<td>59,000</td>
<td>6 PDF zipped XLS</td>
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<tr>
<td>Vocational education teachers, secondary school</td>
<td>25-2032</td>
<td>96,000</td>
<td>91,000</td>
<td>-4,000</td>
<td>-5 PDF zipped XLS</td>
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</table>

Appendix D
FACULTY DEMOGRAPHICS

Since fall 2001, the Department of Foreign Languages finds itself with an appalling imbalance between full-time and part-time instructors. Currently, the ratio stands at 1 full time faculty member and 13 adjunct faculty members. In sum, part-time accounts for 93% of the department members while full time stands at 7%. Therefore, adjunct faculty make up nearly the entire Department of Foreign Languages. By having such a disproportionate ratio, it negatively impacts the integrity of the courses and the program as a whole, as many of the adjuncts teach at other institutions and cannot attend important departmental meetings to acquire valuable information firsthand or do not follow approved course outlines or student objectives. Further, this puts the entire responsibility, pedagogical/curriculum related, and administrative, on one single faculty member. In turn, this causes departmental duties and projects to be accomplished at a much slower rate than preferred. The Department of Foreign Languages must request more hiring of full-time faculty.

STUDENT DEMOGRAPHICS

According to the LAHC FACT Book 2009, the ethnicity of students in 2008 reveals the following: Hispanic 45.3%; Asian 20.0%; African American 14.9%; White 17.8%; and other 2.0%. This trend is set to continue through 2018. The percentage of Hispanics/Latinos and Asians will increase, while the percentage of Whites and African-Americans will decrease. If we consider these statistics with the overall ethnicity of full-time faculty of Harbor, we see a disparity. The ethnicity of full-time faculty reveals the following: Hispanic 14.9%; Asian 11.4%; African American 15.8%; White 53.5%; and Other/Unknown 4.4%. These statistics indicate that the ethnic population of faculty should parallel the population it serves. Currently, the ethnicity of the Department of Foreign Languages faculty (full-time/part-time) almost parallels the 2008-2018 student ethnicity trends.

Another important fact pointed out by the LAHC Office of Research is that a great majority of LAHC students are engaging in the use of technology as indicated in the following section of this report.

Therefore, the Department of Foreign Language must continue to be proactive in the hiring process and focus on incorporating more technology in its curriculum in order to best serve our future student population.

TECHNOLOGICAL TRENDS
Technology is expected to change education both within the traditional campus and classroom, and in the expansion of offerings in online classes and in virtual universities. Within the "bricks and mortar" system, students, instructors, and administrators will continue to have greater reliance on computer technology. This continues a trend that has been going on for some time.

A 2004 survey by the National Education Technology Plan found that 90% of children between five and seventeen years of age use computers. The researchers concluded that students rely on technology and see it as an "essential and preferred component" of their daily lives. A 2007 Harbor College student survey reported that 86% of the students at Harbor College often or sometimes use a computer at home to do school work, 82% often or sometimes use the Internet for an assignment and 76% used the Internet to apply, register, check grades, add or drop classes. A study by the Los Angeles Community Colleges Office of Institutional Research states that there is an increase in online classes. Another interesting fact from that study is that more Los Angeles Harbor College students transfer to the University of Phoenix than to any other private college or university.

It seems rather safe to say that technology is here to stay. In fact, computer technology is changing the concept of school itself and the way students study. It also questions the traditional methodology of teaching in higher education and forces us to search for a system that allows us to include and consider the ever changing technological environment. In addition, educators and administrators will have to consider the psychological and sociological impact of the steady stream of changing technology that could influence students.

Online instruction is gaining in popularity in higher education. There will be a need to develop more and better online courses. Online instruction has many positive aspects such as easy accessibility and good quality instruction if the instructor is well prepared and sensitive to the students' needs. There will be a need for well trained instructors who are skillful in the use of this developing technology and who will produce interesting and engaging online classes.
According the article: “The Future of Online Teaching and Learning in Higher Education: The Survey Says...,” by Kyong-Jee Kim and Curtis J. Bonk, Online learning will be superior by 2013.
Table 4
Predictions About How the Quality of Online Learning Will Be Measured

<table>
<thead>
<tr>
<th>Response Options</th>
<th>Number of Respondents</th>
<th>Response Rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comparison of student achievement with those in live or face-to-face classroom settings</td>
<td>237</td>
<td>43.8</td>
</tr>
<tr>
<td>Student performance in simulated tasks of real-world activities</td>
<td>80</td>
<td>14.8</td>
</tr>
<tr>
<td>Student course evaluations</td>
<td>47</td>
<td>8.7</td>
</tr>
<tr>
<td>Course completion rates</td>
<td>36</td>
<td>6.6</td>
</tr>
<tr>
<td>Course interactivity ratings and evaluations</td>
<td>24</td>
<td>4.4</td>
</tr>
<tr>
<td>Other</td>
<td>24</td>
<td>4.4</td>
</tr>
<tr>
<td>Student placement into jobs</td>
<td>23</td>
<td>4.3</td>
</tr>
<tr>
<td>Student satisfaction questionnaires</td>
<td>17</td>
<td>3.1</td>
</tr>
<tr>
<td>Computer log data of student usage and activity</td>
<td>1</td>
<td>0.2</td>
</tr>
<tr>
<td>Subtotal</td>
<td>541</td>
<td>97.5</td>
</tr>
<tr>
<td>No response</td>
<td>21</td>
<td>2.5</td>
</tr>
<tr>
<td>Total</td>
<td>562</td>
<td>100.0</td>
</tr>
</tbody>
</table>

The virtual environment has the potential to turn instruction into a highly student-centered process leading to individual customization. A student will have the flexibility to choose classes from all over the world with the possibility of designing his/her own curriculum and even create his/her own discipline. This raises the issue of accreditation. Also the role of administrators as well as traditional faculty will need to be clarified. It’s seems reasonable to assume that a new generation of students will be looking for flexibly designed degrees that are recognized and valued but that they will still need the help and support of administrators and faculty to reach those goals.

Cloud computing is a new form of handling business at colleges. A Web-based word processor called Google Docs and similar programs offer colleges a new way to operate tasks by using their web services. This service is also available to instructors and scholars. The significant aspect of this program is that students and professors do not work from local computers but use the Internet where they can share their work with others and have unlimited
memory space. Possible problems with privacy and other computer concerns from natural disasters to willful tampering are in the process of being discussed.

The Harbor College Department of Foreign Languages has begun to enter into this new emphasis on technology. Several rooms are now equipped with computers and projectors and have the possibility of Internet connection. In addition, the Spanish and French disciplines have started to use a more computer friendly textbook. Furthermore, the possibility of offering online courses has been discussed and is currently being investigated. Of course, more funds are needed for computer innovation and to train instructors.

In addition, the department highly believes in implementing e-portfolios for future student success. For example, there are several colleges that are using e-portfolios and are reporting greater student success and higher retention rates; one college is LaGuardia Community College. This allows technologically savvy students to build on their current skills and allow those students with limited technological skills to develop them. Instructors can create their own discipline and course website so that students can work on posted assignments or exercises before class meetings.

Last but not least, in order have an effective foreign language program for the 21st century, it is imperative for the Department of Foreign Languages to create a technologically advanced foreign language laboratory like the ones at El Camino College, Long Beach City College, and Santa Monica College, just to name a few. This will allow students to further increase their reading, writing, listening, and oral skills in the foreign language of their choice by way of Web-based programs and activities.

**COMPETITION IN VIRTUAL SPACE**

Comprised of nine campuses in Los Angeles County, the Los Angeles Community College District is the largest community college district in the United States and one of the largest in the world. While all nine campuses in the system offer online classes, according to statistics from the LACCD’s Office of Institutional Research, it is striking that only four colleges (44%) in the LACCD offer, or are in the process of developing, online degrees, compared with nearly three-quarters (74%) of colleges statewide as reported in the 2008 Distance Education Survey. Also of note is that of the Los Angeles Harbor College students who transfer to private colleges or universities, more transfer to the University of Phoenix (which offers a variety of online degree programs) than any other private college or university, as previously mentioned. LACCD’s survey also cites data indicating that online classes and degrees are the fastest growing part of higher education and that today’s students see online programs as a viable choice in continuing their education. The chart below illustrates growth in online enrollment at six LACCD campuses as compared to all community colleges in California.
Given student interest in online education, and local and national trends indicating overall growth in this area, LAHC is well-placed to expand its online offerings in foreign languages. This is especially true, given that neither of the public 2-year or 4-year intuitions in LAHC’s immediate service area (El Camino College, CSUDH) currently offer online foreign language classes or degrees in the field. Harbor could fill this void by offering online or hybrid courses targeted to attract specific populations. One such population is high school students in Harbor’s service area whose schools do not have a variety or depth of foreign language offerings, or do not have advanced placement courses. Another potential target group would be university students looking to satisfy language requirements at a lower cost, or to study less frequently offered languages. Since Spanish and French, and in the near future Japanese, are moving to texts that offer web based support, it seems natural that department begin to consider broadening its course offerings to include online courses.
Department of Foreign Languages
Strengths
Fall 2009

What are the strengths of the program? Include reference to SLO assessment results.

Many of our students at LAHC take foreign language courses (Spanish, Japanese, and French) to fulfill their Associate of Arts Degree requirement, while others take them as part of their transfer program requirements. We offer first and second elementary level classes in Spanish (Spanish 1 or the combination of Spanish 21 and 22 and Spanish 2) and in French (French 1 and 2). In Japanese, we offer first level elementary course (Japanese 21 and 22). The focus in these beginning level courses is the fundamental development of the four principle skills that are the necessary foundation in the learning and application process of the target language. These skills are listening comprehension, writing, reading, and oral proficiency. Furthermore, focus is also placed in the students’ development of cultural awareness.

At the intermediate level, we offer courses in Spanish (Spanish 3 and recently updated, Spanish 4). These courses allow students to continue their studies in Spanish by completing the grammatical study of the language and learning new complex structures, while at the same time increasing their reading comprehension and critical thinking skills by reading cultural narratives, reading excerpts from popular works of literature by Hispanic writers, learning how to perform literary analysis of them, expand their cultural awareness, and learn the fundamental conventions of writing. For those students who wish to improve their conversational skills, the department offers Spanish conversation (Spanish 8). The department even offers a course on Mexican contemporary literature (Spanish 12) for those who wish to further their knowledge on culture, history, and literary trends throughout history in Mexico.

The Department of Foreign Language has also fulfilled a goal that was set many years ago. With the expected growing population of Hispanics in our service area, as indicated by the FACT Book 2009, there was a need for classes designed for heritage speakers of Spanish. Most of these students have an innate foundation in the language and thus need classes that will help them further develop it. In fall 2006, two sequential courses for Spanish Speakers were created: Spanish 35 (Spanish for Spanish Speakers 1) and Spanish 36 (Spanish for Spanish Speakers 2).

We also offer an Associate of Arts major in Spanish for students wishing to specialize in the field at the community college level. Additionally, because of the growing population of Asian speaking communities in our service area, particularly Japanese speaking populations, there is the need to further develop the Japanese program. To meet
this demand, the department has recommended the creation of an Associate of Arts Degree in Japanese.

Furthermore, in keeping up with technological trends, the department has had a constructive dialog pertaining to the offering of online and hybrid courses in the near future to reach out and accommodate students who cannot schedule regular traditional classroom courses due to scheduling conflicts and to the technologically savvy ones who are already here at LAHC, as pointed out by the LAHC Office of Research. Also, the newly adopted Spanish and French textbooks offer Web-based activities that are tied to new technology in foreign language pedagogy.

At the same time, the strengths of the Department of Foreign Languages come from the strong support from our Communications Division Chair and our enthusiastic, inventive, and committed teachers. Even during our current economic downturn, our Division Chair has found ways to maintain our department intact without having to cut too many classes. This has allowed us, the department, to meet our students' scheduling and educational needs, while at the same time maintaining the integrity of our program. The success and strong effort of our language teachers is clear by the results of the SLO assessments that have been done thus far. For example, in Spanish 1 and 2 and French 1 and 2, student success and achievement have been high as indicated in the SLO assessments. For information on the Spanish 1 and 2 and the French 1 and 2 SLO assessment results, please visit the LAHC Website http://www.lahc.edu. Moreover, most of our faculty members stay current in their field by attending conferences, professional development workshops, and symposiums. Some have traveled to or taught in foreign countries in which the target language that they teach and specialize in is spoken. For example, one of our French teachers travels to France each year and has taken language courses in universities in that same country. Another example is that one of our Spanish instructors has taught in universities in Spain and in Argentina. This is very important because they, these instructors, bring needed valuable firsthand knowledge and experience to our institution.

Another positive aspect of the Department of Foreign Languages is the reinstatement of the Chi chapter of the foreign language honor society of Alpha Mu Gamma that was established at Harbor on May 26, 1951. The Department of Foreign Languages is currently filing the necessary paperwork to reinstate the Chi chapter of this prestigious honor society that ended its existence in 1979 at Harbor, the year in which this chapter of Alpha Mu Gamma initiated its last group of students into this society. Such organization encourages students to initiate and continue their studies in foreign languages. It also offers financial help to many by providing scholarships, while at the same time honoring students for their hard work.

Last but not least is the issue of SLO and SLO assessment. We have completed some SLO assessments for some of our foreign language courses; however, we are still working on SLO assessments for other various classes. Again, work is progressing, and, as the assessment results tell us thus far, in the first and second elementary level courses in Spanish (Spanish 1 & 2) and French (French 1 & 2), the large majority of our students

Appendix E
are succeeding. For example, in Spanish 1, students’ ability to describe and apply correct grammar, and word order, assessed by way of a writing exercise on an exam, showed that the majority of the students assessed met the SLO goal. In Spanish 2, student’s ability to properly express themselves in writing in the preterit tense, as it was proven by a writing exercise on an exam, as well as read cultural texts at the second level of elementary language and identify and name cultural information after the said reading by way of reading comprehension check questions, also on an exam, showed that the majority of students met the goals of the SLOs assessed in Spanish 2. The same can be said about French 1 and French 2 students.

**What areas of the program need strengthening? Include reference to SLO assessment results.**

While the program has various strengths, it also has areas that need strengthening. First, the department has lost the majority of its full-time faculty. Around a decade and a half ago, in the early to mid 1990s, we had four full-time instructors. We had one German instructor, a French instructor, and two Spanish instructors. This number was reduced to one, as retiring faculty was not replaced. More alarming is that from 2001-2006, the Department of Foreign Languages operated without a full-time faculty member. At the present time, the department has one full-time instructor who was hired in fall 2006 and thirteen adjunct instructors, a very disproportionate imbalance. The majority of the classes are taught by adjunct faculty who most, because of their commitment at other institutions, cannot participate in out-of-class activities (SLO and curricula development, curricula review, campus committee work, etc.). Furthermore, this situation causes a lack of departmental meetings, as there are not enough full-time faculty to organize and head them. Department meetings are vital; they are the settings in which faculty can accomplish current goals and set new ones. Without a doubt, we are in difficult economic times with a limited budget; however, increasing full-time faculty would not only increase the ratio of full-time to adjunct faculty. It will also create a stronger work force to further develop our program, to complete departmental projects within a reasonable time without stretching faculty thin, and provide additional valuable services to students such as additional office hours and tutoring.

A second weakness in the program is the lack of a true foreign language laboratory. The department has been and is still in dire need of a facility and equipment (computers and similar technology) that can be allocated for language lab work. This is a problem that has been in existence for many years. While we lack a language lab, other colleges within our service area and ones not far from it have language labs. It is vital that our department have one. Although Spanish 1, Spanish 2, French 1, and French 2 SLO assessment demonstrate a high student success rate, there are areas that require improvement. For example, spelling is an area that SLO assessments in Spanish and French showed a need for improvement. Improvement starts with having students spend additional time with materials and with the adequate equipment. Additional time studying can include the use of a language lab or language center to improve this skill and others that need strengthening.
Third, is that there is an imbalance between the amount of course offerings that we have in Spanish and the course offerings in French and Japanese. As mentioned in the beginning of this narrative, our department offers a small but fundamental variety of Spanish courses that start at the beginning levels, some that are at the intermediate level, ones tailored for Spanish native speakers, ones that focus on conversation and Mexican contemporary literature. However, when we compare these course offerings to the ones in French and Japanese, we find that we have a very disproportionate department. For example, the course offerings in French only cover the first two elementary levels of instruction (French I and II). More alarming, considering the current and future demographics and economic trends (please see environmental scan), are the course offerings in Japanese. Our department only offers first level Japanese, covered in two courses, Japanese 21 and 22.

A fourth weakness in the department is related to the budget. Budget limitations are slowing the further development of the department. Without a doubt, it makes a negative impact in student success. Unfortunately, we cannot afford to cut existing classes. Cuts have been made in the past. Further cuts would hurt the integrity of the department and make it more difficult for students to complete the requirement of the Associate of Arts Degree for transfer or completion of their two year studies or to complete the newly offered Associate of Arts Degree in Spanish. Degree programs are created based on economic and demographics trends. It’s a matter of how best we can serve our students. If a degree program is offered, there should be courses available to complete it and full-time faculty to revise its curricula. The same can be said about our proposal to begin an Associate of Arts Degree in Japanese. Current and future economic and demographic trends point to a need to offer a degree program in Japanese. To staff some of the course offerings that would satisfy the requirements related to these degrees require the hiring of new full-time faculty, which during the current economic climate would not be possible. We have also engaged in the rotation of courses in order to offer new course offerings. This is what we did in order to make Spanish 35 and Spanish 36 available. For example, instead of offering eight sections of Spanish 1 classes, we replaced one with Spanish 35 in the fall and another with Spanish 36 in the spring. However, there is a limit to class rotation. Class offerings cannot exist only through the rotation of courses. Of course, money is not going to appear out of nowhere, but redirecting existing resources to fulfill these needs is a possibility.

A fifth weakness is the lack of placement exams to see where students are in terms of their knowledge in the foreign language of their choice. There have been cases in which students who have completed previous foreign language courses at other colleges take foreign language classes at L.A.H.C, but realize that the curriculum from the courses taken at the other college does not correspond with the one at Harbor. By having placement exams, instructors will have a clear picture as to where students stand in the courses and allow for improvement.

Appendix E
Executive Summary of Visitation Team’s Assessment of the Los Angeles Harbor College Foreign Language Program for the purpose of Academic Program Review

Name of discipline: Foreign Languages

Division chair: Carmen Carrillo Phone number: 310-233-4250

Names and types of program:

☐ Degree program: Associate of Arts in Spanish

Visitation Team:

Dr. José Nunez, Long Beach City College (Spanish Professor, Interim Dean)

Dr. Benito Gomez, CSU, Dominguez Hills, (Spanish Professor)

Dr. Clorinda Donato, CSU Long Beach (French and Italian Professor)

Dr. Lawrence McKenzie, Curriculum Committee Chair, LAHC

I. Description of Visit: On Friday, February 26, 2010, the three team members listed above visited Harbor College.

Prior to their visit they were sent the following documents:

1) Academic Program Review for Foreign Languages
2) A Strengths and Weaknesses Assessment of the Program, 2009, authored by William Hernandez
3) Communications Division, Partial Program Review, Department of Foreign Languages, Environmental Scan, Fall 2009

At the onset of the visit the evaluation team was presented with all of the course syllabi.
The meeting began at 10:00 am, when the review team met with:

Prof. Carmen Carrillo, Division Chair
Prof. William Hernandez, Spanish
Prof. Seongok Bae, French
Prof. Ryoko Onishi, Japanese

The Division Chair introduced herself and the faculty present. She told the team the work schedule for the day and where we could find these faculty members in case we needed to ask questions.

II. Evaluation of syllabi, assessment program, and self study documents and technology

1. Evaluation of Syllabi

Harbor Community College provided us with a copy of a syllabus for every course offered by the department of Foreign Languages. Dr. Carmen Carrillo also sent us electronic copies for further evaluation. The syllabi for the course reflect the intention of the department to meet the General Education parameters. They appear to meet the requirements to be transferable to the UC and CSU systems. The instructors selected relevant goal-oriented activities, allocating appropriate time for their completion. The desire to infuse the syllabi with activities that promote cooperative learning in a culturally diverse environment to learn new knowledge and skills. Students are encouraged to select and analyze information and information and communicate the results of others, using oral, written and multimedia methods. For example, students use computers to acquire, analyze and communicate information. In conclusion, the syllabi are concise, well-written and ambitious. It was our impression that if the instructors and students are able to complete what is planned in the syllabus, the students of Harbor Community College will be very well prepared to advance to the next stage of language development.

2. Assessment Program:

The Foreign Language department has done an outstanding job developing Student Learning Outcomes and their assessment. We would like to point out that the tools developed to assess those outcomes are both simple and thorough; it is a model to follow. After examining the rubrics created for this task and the results, we encourage the department to present them to other foreign language departments in conferences and/or symposiums.
3. Self Study Documents:

The Committee would like to commend the Department for preparing such thorough, well-organized documentation, which greatly facilitated our job.

We have the following observations about the content of these documents:

1. The Mission Statement discusses student learning outcomes without mentioning the importance of the level of a particular course. While the sentence preceding the actual outcomes states that: "The Student Learning Outcomes will vary depending upon the language and the level of the courses." The outcomes themselves do not reflect this notion and could be misleading. We recommend adding the following phrase to each learning outcome: "commensurate with the level of the course and the difficulty of the target language for speakers of English." This will assure that there is no confusion about the use of terms such as "fluency" and "accuracy" when the four skills are being discussed. See the pertinent section of the mission statement in footnote one for reference.¹

¹ MISSION STATEMENT:

The mission of the Department of Foreign Languages is to foster growth and learning that raises the student's awareness of various languages and cultures. This awareness fulfills the general education requirements for graduation and transfer. Students in department courses develop intellectual and cultural awareness, engage in critical and independent thought, and become productive members of the communities served.

To fulfill this mission, the Department of Foreign Languages established its student learning outcomes that apply to all students enrolled in Spanish, French, and Japanese. The Student Learning Outcomes will vary depending upon the language and the level of the courses.

Upon completion of the course in Spanish, French, and Japanese, students will be able to:

1. Demonstrate fluency and accuracy in listening comprehension skills in the target language.

2. Demonstrate fluency and accuracy in writing skills in the target language.

3. Demonstrate the ability to read and comprehend texts in the target language.

4. Express themselves orally with fluency and accuracy in the target language.

5. Demonstrate knowledge of the culture and customs of countries in which the target language is spoken.
III. Program Strengths (Benito, José, Clorinda)

The capable leadership of William Hernandez constitutes an overarching strength of the Department. His ability to manage between 12 and 15 part-time faculty members every semester, weather the budgetary crisis through hard work, and map a future for the program is commendable.

1. The program has an AA degree in Spanish and is planning an AA degree in Japanese. This is important for communicating to students the importance of completing a full cycle of language study culminating in a degree. The documentation provided offers the statistical basis regarding the need for professionals in a variety of areas with particular emphasis on the three languages taught at Harbor College. We hope that the AA degree remains on track for Japanese, and that French may also be considered as a candidate for AA status. Students who have French, Spanish and English have the three languages of the Americas, which could open up doors for them.

2. The self-study report shows that the Foreign Language department has a clear understanding of the importance that technology has acquired during the last ten years in the teaching of foreign language. The commitment of the department is obvious; the report specifies the steps necessary to achieve a broader integration of all available technology tools for the teaching of foreign languages.

3. The Program has taken assessment seriously and has presented a well-conceived and executed plan for the present and the future.

IV. Program Concerns

• Imbalance between the number of full-time faculty and part-time. The self-study describes the difficulties faced by the full-time faculty member who runs a section of part-time faculty. There is never any opportunity for meetings to strategize collectively about how to move forward. This leaves the entire burden of planning for the future entirely upon the full-time faculty member. Two full-time faculty members are needed to move these programs in the proper direction.

• No AA degree for French nor Japanese; this makes these languages less attractive for students. The self-study document indicates that the AA in Japanese is underway. We recommend implementing this new degree as quickly as possible. French should also move in this direction. Students need concrete degree goals in the area of foreign language if they are to be competitive later on.
V. Recommendations

1. Faculty Hires: The most urgent need in the program is for two full-time faculty members in the section. We recommend that one be in Spanish and the other in Spanish-French or Spanish-Japanese. In order to build the French and Japanese programs, a full-time faculty member with half-time responsibilities is needed. We cannot stress enough the need for hires of full-time faculty.

2. Lab Component: The first and second semesters of French, Japanese, and Spanish are transferable to the CSU and UC systems. IGERTC requires the lab component that these two courses have. However, the lab component is not included in the course outline. We recommend that its description and accompanying activities be included in it. The lab component should be a section linked to the main section of the course, assigned to an instructor of the language, who would work with the students enrolled in that section while they attend the lab.

3. Improving Retention Rates: The slide in retention rates, particularly in French, should be examined. The Committee recommends closer monitoring of the performance of part-time faculty in this area. Evaluations, materials, and teaching performance should be reviewed.

4. Teaching a section of French for Spanish speakers: If one of your part-time faculty members in French is a Spanish speaker as well, a French for Spanish speakers class could attract to the study of French a cohort of students who have heritage or high school knowledge of Spanish. This places a positive value on knowledge of Spanish as a bridge to French.

5. Add on-line courses in French and Japanese culture taught in English to attract students to the language. There are some excellent examples that could be adapted. For example, Irvine Valley College has an online course in French Culture and Civilization that attracts students to continue with French.

6. Contact Japanese businesses for scholarship funds for students of Japanese or internships.

7. Career Information in first year classes: Students should be made aware of the career options that exist for those who know other languages. Information about teaching, careers in foreign service and international business should be part of the introductory lessons in any language program.

8. Change the mission statement as suggested in our discussion of documents submitted to the review team.
TO: Academic Dean

FROM: CARMEN CARRILLO, CHAIR, COMMUNICATIONS

Program review – Validation Team Members

Date: Nov 2, 2009

We recommend the following persons for consideration for validation team:

Department: Foreign Language
Program: Foreign Language

The validation team should be comprised of the dean of the area, one faculty member from a related discipline/program, two faculty members from unrelated disciplines, and two members from outside of the college.

<table>
<thead>
<tr>
<th>(Name)</th>
<th>(Related discipline/program)</th>
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<tr>
<td>Dr. Benito Gomez, Spanish (CSUDH)</td>
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<th>(Name)</th>
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<td>Lauren McKenzie, Mathematics</td>
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<td>Paul Grady, ESL</td>
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In addition to the above, the validation team should also include at least two individuals from outside of the institution. This may be someone from a four-year institution in the same discipline, someone from another community college in the same discipline, a high school instructor in the same discipline, or a member of college community employed in the area of the program.

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<tbody>
<tr>
<td>Dr. Jose Nunez, Dean, Language Arts</td>
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<tr>
<td>Long Beach City College</td>
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<tr>
<td>4901 East Carson Street</td>
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<tr>
<td>Long Beach, CA 90808</td>
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<td>562-938-4695</td>
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<tr>
<td>Dr. Clorinda Donato, Professor of French/Italian</td>
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<tr>
<td>California State University, Long Beach</td>
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<tr>
<td>1250 Bellflower Boulevard</td>
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<tr>
<td>Long Beach, CA 90840</td>
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<td>310-985-4316</td>
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Validation Team Duties

A program review involves the visitation, observation and analysis of a program/discipline by a team with the purpose of providing suggestions for improvement.

Duties of the Team Member

Pre-Visit Responsibilities
- Study the self-study report prepared by the faculty.

Visit Responsibilities
- Meet with program/discipline faculty.
- Examine teaching materials, supplies, and equipment presently being used in the program.

Post-Visit Responsibilities
- Develop an executive summary of team findings and recommendations.

The Role of the Validation Team
The validation team has been selected to include professionals who can assist the program by reviewing the self-study and plan of action, then making comments and suggestions that will lead to program improvement. In addition to reviewing the materials included in the written packet, team members are asked to visit the facility which houses the program, talk with instructors and students in the program, and request any further information materials which would be helpful in preparing the executive summary.
EXECUTIVE SUMMARY
(Validation Team Report)

(Discipline)
(Year)

Team Members

MAJOR FINDINGS

Strengths regarding the program/discipline:

Concerns regarding the program/discipline:

RECOMMENDATIONS
Plan of Action – Pre/Post Validation
(Six-Year Evaluation)

Department ____________________ Program_Foreign Languages

In preparing this document, refer to the discipline or program data collected during the self-study and the recommendations of the validation team. Identify the actions the discipline or program will take during the next six years. Be as specific as possible and indicate target date. Additionally, indicate by the number each institutional goal and objective which is addressed by each action plan. (See Institutional Goals and Objectives.) The completed final plan should be reviewed by the department as a whole. Be sure the signature page is attached.

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<tr>
<th>Recommendations to improve desired student outcomes and improve student performance</th>
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<td>Recommendations that require <em>additional resources</em></td>
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