 Physical Sciences Department

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**Chemistry Dual Credit Faculty Liaison Curriculum and Assessment Statement of Equivalency**

**Introductory Paragraph:**

I, Dr. Karlos Moreno, Chemistry Instructor and Physical Science Department Assistant Chair, serve as Faculty Liaison for South Texas College’s (STC) Chemistry dual credit program, and have done so since August 2017. I work together with the Physical Science Department Chair (Dr. Ravindra Nandigam), the Math and Science Assistant Dean (Dr. Enriqueta Cortez) and faculty within the department to ensure the course learning outcomes align with the course learning outcomes developed by the Texas Coordinating Board (THECB). These course-learning outcomes are included in the Master Syllabus distributed to all chemistry traditional, dual credit, and adjunct faculty teaching for the Physical Science department. I can attest that the chemistry dual credit courses adhere to South Texas College’s General Education Life and Physical Science Core Objective requirement and to the state’s course learning outcomes for the discipline.

1. **Academic Freedom**

South Texas College’s policy on Academic Freedom and Responsibility (Policy 3030) commits the college to provide “uninhibited search for truth and its open expression”. The policy further recognizes that “mastery of a subject makes a faculty member a qualified authority in that discipline and competent to choose how to present its information and conclusions to students. The following are among the freedoms and responsibilities which should reside primarily with the faculty: shared participation in planning and revising curricula, selecting supplemental readings, selecting classroom films and other teaching materials.” Moreover, “Individual faculty members will be responsible for choosing instructional methodologies, assigning grades, and maintaining classroom discipline.”

The summary of STC’s academic freedom policy and faculty obligations is given below:

“It is the policy of South Texas College to (1) entitle each faculty member freedom in the classroom in discussing the subject which he or she teaches; (2) hold each faculty member responsible for judicious use of controversial material in the classroom and limit introduction of such material only as it has clear relationship to the approved curriculum and subject; (3) hold faculty responsible for maintenance of competencies, exercising professional integrity, being professional in conduct with students, and recognizing and exercising that the faculty member's right to freedom of expression must be balanced with the interest of the state as an employer, so as not to nullify constitutional protection.”

The Chemistry program complies with this policy by involving the faculty in the development of the curriculum for each course. The textbooks, lab manuals, and topics covered in the chemistry classes selected by the college chemistry faculty reflect the material needed to support the course learning outcomes for the chemistry courses offered by STC at college campuses and dual credit high school partners. All traditional and adjunct faculty teaching the same course use the same textbook for a three year period, while dual credit faculty use the same textbook for a maximum of a four year period as per the Memorandum of Understanding (MOU) between STC and the dual credit partner. The chemistry faculty whether traditional, adjunct, or dual credit have access to course materials that include exams, quizzes, and practice problems that were developed by STC’s chemistry faculty. The faculty receive access to the publisher related materials as well. All faculty have the freedom to not use the provided exams, quizzes, and practice problem and to develop additional activity worksheets, introduce supplemental material and to choose how to deliver the material to their students. The faculty are encouraged to engage the students in the learning process irrespective of the instructional method the faculty selects.

To ensure the dual credit chemistry courses align with STC’s on campus chemistry course standards while complying with the college’s policy on academic freedom, I perform the following tasks:

* Schedule and conduct interviews for prospective dual credit faculty;
* Establish an interview committee that consists of myself, one additional chemistry faculty, and one faculty member outside the department;
* Develop interview questions for prospective dual credit faculty and assign topics for teaching demonstration;
* Provide one on one new dual credit teacher trainings prior to the instructor teaching the first course;
* Assist with the department afternoon professional development meeting at the beginning of each semester to update new and returning dual credit faculty of any changes and to reiterate the chemistry program’s expectations;
* Arrange for Blackboard and the textbook publisher online grading system trainings;
* Conduct dual credit faculty site visits to observe in-class instruction, review graded material, and address any concerns the dual credit faculty may raise;
* Schedule lab grading review sessions with dual credit faculty as needed;
* Review the department Lab Coordinator’s finding regarding lab equipment and safety measures available at each high school offering STC dual credit chemistry courses.
1. **Student Learning Outcomes**

The course learning outcomes (CLO’s) adopted for the chemistry courses are those developed by the Texas Higher Education Coordinating Board (THECB). STC’s chemistry faculty mapped these course-learning outcomes to program learning outcomes (PLO’s) the faculty developed. To ensure the course learning outcomes for students taking chemistry courses are assessed in the same manner, the chemistry faculty developed common assessment assignments, which are administered in the same manner by traditional, adjunct and dual credit faculty teaching chemistry courses. The assessment tool for CHEM 1411 consists of six CLO quizzes that correspond to the six lecture related course learning outcomes in the course and a laboratory report that corresponds to the four lab related course learning outcomes in the course. In CHEM1412 the assessment tool consists of six CLO quizzes that correspond to the seven lecture related course learning outcomes in the course and a laboratory report that corresponds to the five lab related course learning outcomes in the course. For students to have mastered course-learning outcomes for which quizzes are administered, the student must successfully complete the three of the five questions for each CLO. For mastery of the lab related CLO’s, the student must participate in the lab experiment and submit a formal laboratory report that includes an objective/abstract/introduction, summary of experimental procedures, prelab questions, data collection, calculation, analysis, post lab questions, and a conclusion. The faculty inputs the student results on the college’s reporting system, JagPRIDE.

In addition to meeting the THECB course learning outcomes, chemistry courses at STC must implement and measure four general education life and physical science core objectives: Critical Thinking Skills, Communication Skills, Empirical and Quantitative Skills, and Teamwork Skills. To ensure all chemistry classes at South Texas College measure these objectives in the same manner, the chemistry faculty agreed to common assessment tools for each objective. For CHEM 1411 and CHEM1412 the assessment tools are set of problems, group presentation, and lab reports. In Fall 2018, South Texas College faculty developed new standard college rubrics to assess each core objective. The faculty input the data obtained for each student on the college’s reporting system, JagPRIDE, for specific courses selected by the college. In the chemistry program, courses not selected for reporting through JagPRIDE still require the faculty to implement and assess the core objectives using the standard college rubrics and report the finding to the department chair.

To ensure the dual credit faculty are informed and understand the chemistry programs expectations regarding course learning outcomes and general education core objectives, I perform the following:

* Meet with each new concurrent enrollment instructor and review the course learning outcomes, the curriculum, assessment tools for course learning outcomes and core objectives.
* Discuss the course learning outcomes and core objectives with new and continuing dual credit faculty prior to the beginning of each semester during the Dual Credit Professional Development Day afternoon session.
* Share the college standard rubrics with each dual credit faculty prior to the beginning of each semester;
* Resend each dual credit faculty an email with the core objective assessments three weeks prior to end of the semester,
* Schedule training on how to use the college standard rubrics and report findings using JagPRIDE
* Resend all dual credit faculty the assessment tools for each course learning outcome and the instructions for implementing and measuring mastery for each outcome three weeks prior to the end of each semester;
* Schedule training on how to report course-learning outcomes using JagPRIDE as needed
1. **Syllabus Review**

Master syllabus templates for chemistry courses are reviewed and updated each semester in collaboration with the chemistry faculty and the department chair. All dual credit faculty are required to utilize this template to prepare their course section outline (syllabus). For new dual credit faculty, I schedule a one on one meeting to review the syllabus and course requirements prior to the beginning of the academic year. For continuing dual credit faculty any questions regarding the syllabus are addressed via email during the afternoon session of the Dual Credit Professional Development day held before the semester begins.

The syllabus must include instructor information, course description, course location, office hours, room location, Chemistry Program Learning outcomes, Course Learning Outcomes, Required Core Objectives, required textbook, required materials, course pre-requisites, tentative course timeline, grading scale, grading timeline, class policies, rules, and guidelines. The faculty have the freedom to adjust the timeline; however, the topics must remain the same. For chemistry courses, the faculty have the academic freedom do establish their own grading scale and grading timeline; however 75% of the grade must be allocated to the lecture portion of the class and 25% must be allocated to the laboratory portion of the course.

In addition to the above requirements, South Texas College Development Studies Policy Statement, Equal Education and Equal Employment Opportunity statement, Title IX statement, Pregnant and Parenting Student statement, Alternative format statement, ADA statement, and Veteran Statement must be included in each syllabus.

As faculty liaison, I collect the dual credit faculty syllabi at the beginning of each semester. I review each syllabus to ensure all the required components are included and meet college standards, ensure the file name complies with college specifications, return any syllabi with issues to the respective faculty for corrections, and forward the completed syllabi to the department chair for submittal to the curriculum office.

1. **Assessment Review**

The dual credit courses are required to cover the same material and to maintain the same level of rigor as on-campus chemistry courses. The chemistry program dual credit faculty and college faculty have the academic freedom to develop the course materials that satisfy the course learning outcomes for the course. The faculty also have the academic freedom to choose the method of instruction that will best serve the students in their courses. As previously mentioned, the faculty are encourage to engage students in the learning process. Local high schools do require high school teachers to utilize 5 E (Engage, Explore, Explain, Extend or Elaborate, and Evaluate) lesson plans. The dual credit faculty incorporate these types of lesson plans in teaching the college chemistry courses.

To ensure assessments are comparable in rigor for dual credit and campus courses are comparable I have implemented the following measures for the dual credit chemistry program:

* Ensure that the dual credit faculty credentials meet the chemistry program standards by reviewing faculty transcripts, requiring the dual credit faculty undergo an interview process that includes a teaching demonstration on a general chemistry topic and requiring the candidate answer questions related to teaching philosophy.
* Dual credit faculty are required to use the same textbook and perform the same laboratory experiments as the college campus courses.
* Meet with each new dual credit instructor and review the course learning outcomes, the curriculum, assessment tools for course learning outcomes and core objectives.
* Provide access to cloud-stored teaching resources to the dual credit faculty, which contain instructional materials that include PowerPoint slides, exams, quizzes, and practice exercises for CHEM1411 and CHEM1412. The dual credit faculty are also given access to publisher related materials. The dual credit faculty and college faculty have the academic freedom not use the materials and/or to modify the as needed to assist their students; however, the dual credit faculty are expected to review the material to become familiar the programs expectations.
* Provide the Core Objective Common Assessment assignments to the dual credit faculty early in the semester, reviewed with the dual credit faculty during the Dual Credit Professional Development Day afternoon session, and training on college Core Objectives Rubrics is provided at a department meeting during the semester.
* Provide Course learning outcome common assessment assignments to dual credit faculty prior to the beginning of each semester and resent three weeks prior to the end of the semester. Instructions on how to administer the assignment are also provided.
* Program chair collects the final exam, copy of gradebook, and sample student work for review at the end of each term. He and I meet to review the material prior to the next full term.

When the rigor of the course material being taught by dual credit chemistry faculty is in question, I organize a training workshop for the entire dual credit chemistry faculty to review their course material and those of the traditional faculty. This allows the dual credit faculty to understand the level of rigor that is taught by the traditional chemistry faculty. In the event the workshop does not help increase the rigor for any particular dual credit faculty, the dual credit faculty member is not allowed to teach a dual credit chemistry course for one year. During this year, a traditional chemistry faculty will teach the dual credit classes and the dual credit faculty member would sit in the lectures and be mentored by the traditional chemistry faculty. After the one-year period, the dual credit faculty member is allowed to teach the dual credit classes with additional site visits and mentoring.

1. **Grading Standards**

Chemistry courses at South Texas College are 4 credit hour courses that include both a lecture and lab component. The dual credit chemistry courses as well as the on-campus courses are required to allocate 75% of the grade to the lecture portion of the grade and 25% of the grade to the lab portion of the grade. The lecture component may include lecture quizzes, homework, presentation, and exams. Additionally, the homework, presentation, and exams are required components while the quizzes are optional. The instructor decides the weight each component contributes to the lecture final average. In Fall 2017 the on-campus courses introduced on-line homework with the dual credit courses expected to add on-line homework no later than Spring 2019 unless the schools budget prevented implementation until Fall 2019. As of this writing, only one school had budgetary issues. This timeframe allowed our dual credit partners time to purchase the codes needed for the course. The faculty did agree that the homework grade should be a minimum of 5% and a maximum of 10% of the grade. The laboratory component of the courses require at least three (3) formal lab reports be required. The same laboratory experiments are selected for formal reports. The faculty may choose to request the remaining lab reports be submitted as either formal or informal reports.

To ensure the grading standards for dual credit and campus courses are comparable, I have implemented the following measures for the dual credit chemistry program:

* Conduct dual credit faculty site visits to observe in-class instruction, review graded material, and address any concerns the dual credit faculty may raise;
* Arrange for dual credit faculty to receive training on the OWLv2 homework system used in CHEM1411 and CHEM 1412 for implementation in the Spring 2019 term. The college faculty implemented the homework system in Fall 2018. The training was held prior to the beginning of the Fall 2018 term and attendance for the training was recorded by me.
* Arranged for blackboard certification for new and continuing Chemistry faculty prior to the beginning of the semester. The training was provided by the Distance Learning office prior to the beginning of the Fall semester. This training enabled dual credit chemistry faculty to web enhance their courses and post grades online.
* Arrange for dual credit faculty to participate in a training on how to grade formal lab reports for CHEM1411. The department faculty assisted in the training. This training clarified department expectations for lab reports and allowed concurrent faculty and college faculty to share ideas;
* Organize a workshop where the dual credit faculty perform the lab experiments for the CHEM1411 or CHEM1412 courses.
* Review the department Lab Coordinator’s findings regarding lab equipment and safety measures available at each high school offering STC dual credit chemistry courses.
* Make every effort to timely provide workshops requested by dual credit faculty to cover a specific topic/procedure/policy from the department for which they may need assistance on how to implement.
* Program chair collects the final exam, copy of gradebook, and sample graded student work for review at the end of each term. He and I meet to review the material prior to the next full term.

**VI. Theoretical/Philosophical Orientation**

The mission of the chemistry program at South Texas College is to provide students a solid foundation in general and organic chemical concepts in order for the students to develop a better understanding of both the living and physical world. In the process of accomplishing this mission, the program’s goal is to create life-long learners with the ability to think critically, communicate effectively, collaborate with others, and problem solve. The Physical Science Department and the Division of Math, Science, & Bachelor Programs fully support my role as Chemistry Dual Credit Faculty Liaison. As faculty liaison, I work to develop a professional and positive work environment that encourages the traditional and dual credit faculty to share ideas, activities, and concerns. I believe it is my responsibility to develop a positive relationship with the dual credit faculty. The chemistry faculty are vital in assisting me to develop a strong relationship with the dual credit faculty. The chemistry faculty serve on the dual credit interview committees, invite the dual credit to visit their class while in progress, share assignments when requested, prepare and share the online homework assignments, and assist with performing site visits when a dual credit chemistry course conflicts with my teaching schedule. The chemistry faculty that conduct site visits on my behalf are instructed to observe the dual credit faculty teaching, review graded material for the course and to relay their experience to me. I promptly address any issues that I observed when conducting a site visit or issues relayed to me by faculty that conducted a site visit. I also take note of any activity or teaching modality I observe or was shared with me that was particularly effective and request dual credit faculty share their experience with other traditional and dual credit faculty during a department meeting or during the Dual Credit Professional Development Day meeting. I make every effort to have an open line of communication with all the chemistry dual credit faculty. I encourage them to send me emails or call me as needed. I initiate contact with them at least three times a semester.

In addition to enlisting the help of the chemistry faculty, I rely on the help of the Physical Science Lab coordinator to inspect the dual credit sites to ensure the proper equipment and chemicals are available to conduct the required experiments. The Physical Science Lab Coordinator works with the dual credit faculty and administration to review the list of required material prior to a program being approved to offer a chemistry course. He/She visits the dual credit sites prior to the beginning of the each semester and relays any concerns to me. If a dual credit partner is missing equipment or materials, I work with them to find other suitable chemical or arrange with them to check out equipment from an STC campus at a time that will least affect courses in progress on campus. We then work with the dual credit partner to obtain the equipment or material for the next academic year or as soon as their budget allows.

The Physical Science Department Chair, Dr. Ravindra Nandigam, and the Math and Science Assistant dean, Dr. Enriqueta Cortez, also have a crucial role in ensuring a strong relationship with the dual credit chemistry faculty. The Physical Science Department Chair approves the mileage reimbursements for me, the chemistry faculty, and the lab coordinator who visit the dual credit chemistry sites. He schedules the afternoon session of the Dual Credit Faculty Professional Development Day and ensures I have sufficient time to meet with the chemistry dual credit faculty. He collects the dual credit faculty final exams, gradebooks, and sample graded student work to review with me prior to the next full term. The department chairs invites the chemistry dual credit faculty to at least one department meeting per semester including the Thanksgiving Day potluck celebration. Moreover, he allows me the freedom to schedule professional development meetings for the chemistry dual credit faculty as needed. Equally important to the success of the chemistry dual credit program is the mentoring I have received from the current Math & Science Assistant Dean. The assistant dean served as Faculty Liaison for chemistry, engineering, and physics dual credit programs for approximately ten (10) years. She initiated a majority of the dual credit processes that I use today. She continues to mentor me in my role as faculty liaison and encourages me to improve and augment the process as needed.

The dedication of the traditional and dual credit chemistry faculty to providing quality instruction and the considerable support the department and division provide makes it possible for me to attest that the dual credit chemistry program at South Texas College maintains the same rigor as the on campus college courses.

Should the committee require any further information please do not hesitate to contact me.

Sincerely,

Dr. Karlos Moreno

November 30, 2018