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ALAMO
COLLEGES

ST. PHILIP'S COLLEGE

Office of the President

December 8, 2011

Dr. Belle Wheelan, President
Commission on Colleges
Southern Association of Colleges and Schools
1866 Southern Lane
Decatur, GA 30033

Dear Dr. Wheelan:

Per your request in your letter dated March 28, 2011, St. Philip's College is submitting prospectuses for the implementation of two new programs, Associate of Applied Science in Biotechnology and an Associate of Applied Science in Chemistry Research Assistant. The Board of Trustees approved the programs on September 23, 2011. The Texas Higher Education Coordinating Board approved the programs on November 29, 2011.

The college will implement these two new programs in August 2012 with the completion of the current renovation of the Science Building.

I look forward to hearing from you regarding this submission. Please let me know if you have any additional questions or concerns.

Sincerely,

Adena Williams Loston, Ph.D.
President

XC: Ruth Dalrymple, Vice President of Academic Affairs, St. Philip's College

Substantive Change Prospectus:
Implementation of a New Degree Program:
Biotechnology

Prepared by St. Philip's College

Submitted to Commission on Colleges of the
Southern Association of Colleges and Schools

November 18, 2011

Substantive Change Prospectus
Cover Sheet

Include name phone number and e-mail address of person to be contacted with questions regarding the prospectus

Mecca Salahuddin
Director of Planning Research and Effectiveness
210-486-2897
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List degrees that the institution is authorized to grant. As a subset of each degree list majors available

St. Philip's College is authorized to grant the Associate of Applied Science degree in the following programs:

Accounting Technician	Early Childhood Studies
Accreditation Leadership (2598)	Electrical Trades
Administrative Office Technology	General Motors Automotive Service Educational Program (ASEP)
Air Conditioning and Heating	Health Information Technology
Aircraft Technician Airframe	Hospitality Event Management
Aircraft Technician Powerplant	Hotel Management
Automotive Technology - Option II Ford ASSET AAS	Industrial Maintenance Management
Automotive Technology	Invasive Cardiovascular Technology
Baking and Pastry Arts	Language and Literacy in Preschool (2563)
Biomedical Equipment Technology	Medical Laboratory Technician
Business Management and Technology (2739)	Network Administrator
CNC Manufacturing Technician	Network Security Administrator
Collision/Refinishing Technician	Occupational Therapy Assistant
Computer Aided Drafting (Architectural)	Occupational Safety and Health Association
Computer Maintenance Technology with Network Specialization	Physical Therapist Assistant
Computer Maintenance Technology	Power Generation and Alternative Energy
Construction Business Management (2755)	Precision Metal Workers: Manufacturing Operations Technician
Construction Technology	Radiography Technologist
Culinary Arts	Refrigeration Technology
Desktop Support Specialist	Respiratory Care Technology
Diagnostic Medical Sonography	Restaurant Management
Diesel Construction Equipment Technician	Web Developer
Diesel/Light to Heavy Truck Technology (2524)	Welder/Welding Technologist

St. Philip's College is authorized to grant the Associate of Arts degree in the following programs:

Business Administration	Kinesiology
Ceramics and Sculpture	Liberal Arts
Comic Book Illustration	Mathematics
Computer Science	Music
Criminal Justice	Philosophy
Design	Pre-Engineering
Digital Media	Pre-Social Work
Drawing and Painting	Psychology
Economics	Sociology
English	Speech
Foreign Language (Spanish)	Stage Craft
General Studies	Statistics
Government	Teacher Education
History	Theatre Performance
Humanities	

St. Philip's College is authorized to grant the Associate of Science degree in the following programs:

Biology	Mechanical Engineering
Chemistry	Physics
Earth Sciences and Natural Energy Resources	Pre-Dentistry
Environmental Science	Pre-Medicine
General Science	Pre-Nursing
Health Professions Degree	Pre-Optometry

St. Philip's College is authorized to grant Certificates in the following programs:

Advanced Cisco Systems Networking	Health Information Specialist
Air Conditioning and Heating	Heating and Air Conditioning Specialist
Aircraft Mechanic Airframe	Histologic Technician
Aircraft Mechanic Powerplant	Home Building
Aircraft Structures Mechanic	Hotel Limited Service Property Management
Aircraft Turbine Mechanic	Legal Word Processing Specialist
Architectural Drafting 3D Enhanced Skills	Machinist/Machine Technologist
Automotive Technology	Manual/Semi-Manual Inert Gas Welding GTAW/GMAW Welder
Avionics	Microsoft Office Specialist (MOS)
Baking Principles	Network Professional *
Brake and Front End Specialist	Network Professional: Server+
Building Trades	Network Systems Technician
Child Development Associate National Credential (CDA)	Office Assistant
Cisco Systems Networking	Payroll Clerk
CNC Operator	Performance Specialist
Coding Specialist	Plastics
Collision Technology	Plumber's Helper
CompTIA Linux+ Certification Preparation (MSAC)	Plumbing Trades
Computer Aided Drafting Technician (Architectural)	Power Generation and Alternative Energy
Computerized Accounting Technician	Precision Metal Worker: Production Tool Operator / Maintenance Assistant
Culinary Studies	Precision Metal Workers: Manufacturing Operations Maintenance Assistant
Data Driven Web Developer	Precision Metal Workers: Manufacturing Operations Maintenance Mechanic
Desktop Support Specialist	Precision Metal Workers: Manufacturing Skills Trade Helper
Diesel/Heavy Equipment Technology Diesel/Light to Heavy Duty Truck Transmission Specialist (2660)	Refinishing Technology
Diesel/Light to Heavy Truck Technology (2524)	Refrigeration
Documentation Coding Specialist	Specialty Medical Transcriptionist
Early Childhood Studies	Structural/Pipe Layout
Electrical Trades	Surgical Technology
Electronics Assistant	Transmission Specialist
Entrepreneurship	Vocational Nursing
Ford Maintenance and Light-Duty Repair	Web Designer Level I
General Medical Transcriptionist	Web Developer Level II

List certificate, diploma, and degree programs which are related to the proposed programs:

St. Philip's College offers the Associate of Science in Biology. This program offers three academic courses in Biology that are similar to the proposed Associate of Science in Biotechnology.

List institutional strengths that facilitate the offering of the proposed program (s):

St. Philip's College has a history of meeting the needs the diverse educational and industry needs of the San Antonio Community. In an effort to continue to be responsive to this needs,

St. Philip's College offer these strengths to facilitate the offering of the Biotechnology program:

1. San Antonio area occupational demand for research in these areas

The director of the Center of Excellence in Science at St. Philip's College, Dr. Jo Dee Duncan) has been visiting with owners, managers, and scientists in the research and industry firms in the San Antonio area. She was recently employed by DPT Laboratories in an industrial setting. During her visits a main issue was the lack of skilled, qualified biotechnology personnel. This need prompted the development of this Associate of Science in Biotechnology.

The *Greater Austin-San Antonio Life Sciences Industry Audit And Gap Analysis* report, ([http://www.i35initiatives.com/ls/wp-content/uploads/2010/11/South Central Life Sciences Report1.pdf](http://www.i35initiatives.com/ls/wp-content/uploads/2010/11/South_Central_Life_Sciences_Report1.pdf)), states: *"The Biotech, Bioscience, and Related Technical Services segment's job growth from '09 to '13 (15.6%) is projected to outpace both Texas (13.5%) and the Nation (12.5%)."*

This report also states: "Evaluating occupational growth projections from '09 to '13, health care & bioscience/biotech occupations requiring an associate's degree or less (Tiers I & II) are projected to grow at a faster rate than their higher skilled counterparts (Tiers III& IV).

"Workforce and education stakeholders must support and build upon training programs that supply innovative bioscience elements of the life sciences cluster. Employers, however, must serve a greater advisory role in program and curriculum development and coordinate to create a "visible" job market and functional pipeline for talent." St. Philip's College is trying to support this need in the local industries.

2. Qualified faculty

St. Philip's College has faculty in the Natural Sciences department that has the education and experiences to facilitate the learning of students in the area of Biotechnology. Appendix C Faculty Roster shows our faculty members who will be teaching in the program.

3. Facilities

St. Philip's College recently opened the Center of Excellence in Science. The Center was built to increase the flow of two-year college graduates transferring to four-year universities for science and related degrees that lead to high pay jobs in the green economy. In addition, St. Philip's College is in the process of renovating the Science Building. The newly renovated building will be used for instructional purposes, to include Chemistry and Biology classroom and lab spaces.

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ABSTRACT

St. Philip's College is seeking approval for the implementation of a new degree program, Associate of Science in Biotechnology. The schedule is for the College to implement this new program August 2012. The associate's degree program will focus on providing quality education and laboratory skills necessary for the student to graduate and move directly to the workforce or transfer to a four-year college or university. A recent report from the National Academy of Sciences states that only 9% of minority college-educated Americans are in science and engineering occupations. St. Philip's College, a Historically Black College (HBCU), and a Hispanic Serving Institution (HSI) are in a great position to spearhead the fight to reduce this disparity.

San Antonio is one of the fastest growing biotechnology cities in America. There are numerous biotechnology and related companies in San Antonio expressing a need for well-educated and skilled workers. We have met to discuss the possibility of offering an Associate of Science degree in Biotechnology. They are willing to collaborate with us to offer internships to our students and hire our graduates. Thus, we are structuring the curriculum to be of the highest quality, to include hands on laboratory experiences, research experiments. Currently, the only active Biotechnology program in San Antonio is a Master's of Science program at the University of Texas at San Antonio (UTSA). Students interested in pursuing this innovative field at the undergraduate level must travel to Austin Community College.

We are working with Bio-Link, a National Advanced Technology Education Center of Excellence focused on Biotechnology and Life Sciences (<http://www.bio-link.org/home/>). We have received a great deal of support from both the Regional office, located at Austin

Community College, and the National Center in San Francisco. Bio-Link has provided guidance on curriculum, equipment and the implementation of this program.

San Antonio Life Sciences Association (SALSA) is supportive of this initiative and provided us with a letter of support for this program. SALSA is a not-for-profit membership and advocacy group focused on the life sciences. SALSA members are from biotechnology and medical companies, non-profit academic and research institutions, and service providers in the San Antonio and Austin region (<http://www.bio-salsa.org/>).

The new program will provide instruction in biotechnology and other scientific skills, as well as mathematics, computer competence, communication skills. There will be a focus on leadership, human relations and employability skill development, and safe and efficient work practices. The curriculum will develop a broad, transferable knowledge/skills base for students that stress both understanding and execution of the following general competencies expected in biotechnology: planning, time management, technical and product skills, knowledge of underlying principles of technology, and safety, health, and environmental issues.

The coursework in Biotechnology will include General Chemistry, Microbiology, Biotechnology, and an Academic Cooperative in a research or industrial laboratory. Graduates will learn basic lab skills for a regulated workplace, recombinant DNA methodologies, Mammalian cell culture, Bioprocessing, Bioseparations, and overview of the Bioinformatics arena. Employment upon graduation is available in companies involved in research and development, pharmaceutical production and testing, food industry, quality control and regulation, and many more.

An initial cohort of 20 – 24 students is expected for this two year program. Cohorts will begin each fall semester. Therefore, we expect an annual enrollment of 40 – 48 students after the first year. Enrollment is dependent on the availability of students who have attained the required math level for the program. By the third year, we anticipate a graduation rate of 15 students per year.

There are two primary target audiences for this program. First, students who want to use this degree to transfer into a Bachelor's of Science degree in Biology or Biotechnology. The second group of students will enter the program to pursue the knowledge and skills necessary to obtain a good job in a biotechnology laboratory setting. This degree will provide students the skills to be functional immediately in a laboratory setting.

The majority of the courses in this program will be held at the St. Philip's College Martin Luther King campus (MLK) at 1801 Martin Luther King Drive, San Antonio, Texas 78203. The biotechnology courses and laboratories will be held at the recently completed Center of Excellence in Science at the Southwest Campus location, 800 Quintana Road, San Antonio, Texas 78211.

BACKGROUND INFORMATION

The Associate of Science in Biotechnology will prepare students for work as laboratory technicians in research in higher educational institutions, research hospitals, biotechnology and pharmaceutical companies. Students may also use the degree to transfer into a Bachelor of Science in Biology or Biotechnology. This degree can be a stepping-stone to a more advanced degree, such as a Ph.D. in Biotechnology.

St. Philip's College Curriculum Committee approved the program on February 11, 2011.

The Alamo Colleges Curriculum Council approved the program on September 19, 2011.

Additionally, the Alamo Colleges Board of Trustees approved the program at the meeting on September 23, 2011. See Appendix A. The program was submitted to the Texas Higher Education Coordinating Board (THECB) on October 13, 2011.

ASSESSMENT OF NEED AND PROGRAM PLANNING/APPROVAL

The director of the Center of Excellence in Science at St. Philip's College visited with owners, managers, and scientists at the research and industry firms in the San Antonio area. A main concern of these individuals was the lack of skilled and qualified biotechnology personnel. This need prompted the development of the Associate of Science degree in Biotechnology.

The *Greater Austin-San Antonio Life Sciences Industry Audit and Gap Analysis* report states, "*The Biotech, Bioscience, and Related Technical Services segment's job growth from '09 to '13 (15.6%) is projected to outpace both Texas (13.5%) and the Nation (12.5%).*"

This report also states: "Evaluating occupational growth projections from '09 to '13, health care & bioscience/biotech occupations requiring an associate's degree or less (Tiers I & II) are projected to grow at a faster rate than their higher skilled counterparts (Tiers III& IV). "Workforce and education stakeholders must support and build upon training programs that supply innovative bioscience elements of the life sciences cluster. Employers, however, must serve a greater advisory role in program and curriculum development and coordinate to create a "visible" job market and functional pipeline for talent." St. Philip's College is trying to support this need from the local industries.

During the 2009-2010 academic year the faculty began to discuss preparation of this program. The college submitted a Science, Technology, Engineering, and Mathematics (STEM) grant application to the National Science Foundation (NSF) to fund the exploration and development of this program and similar programs. NSF did not fund the program. However, program development continued with urging from the community.

DESCRIPTION OF CHANGE

Program Objectives: The Associate of Science in Biotechnology program will provide students with strong laboratory based experiences and knowledge to prepare them to begin a career in a laboratory. Graduates of this program will seek employment or pursue a Bachelor of Science in Biology or Biotechnology.

Curriculum: This program will require students to complete 65 semester hours to include 46 semester hours to become core complete and 19 additional semester hours in biotechnology, including the Academic Cooperative. Sixty-two of the hours are in the Lower Division Academic Course Guide Manual of Texas Higher Education Coordinating Board. The program will require implementation or modification of four new courses. Two of these courses have been offered in the Alamo Colleges in the past as WECM course but have now received approval and are included in the ACGM. The Academic Coop is also offered by other Alamo Colleges. See Appendix C for the Degree plan.

Admission and graduation requirements for students within the program will be the same as other Associate of Science programs offered by St. Philip's College.

The Chair of the Natural Sciences Department will administer the program under the direction of the Dean of Arts and Sciences. The Chair will follow procedures set forth by the Vice President of Academic Affairs, and the College and District Curriculum Committees.

Although it is not required for an Associate of Science program, an Advisory Board has been assembled. The volunteer members of this board are active in research and other

biotechnology industries in the San Antonio area. They have been very involved in the development of the degree plan and have agreed to host interns from the program. This board will meet at least annually to evaluate the program and recommend updates or other changes. All changes to the program will be processed through the St. Philip's College Curriculum Committee, the Alamo Colleges Curriculum Committee and the Texas Higher Education Coordinating Board.

FACULTY

The initial enrollment of 20 – 24 students in the first cohort will be adequately met with the current full-time and adjunct faculty. Due to the cohort structure of the program only one section of courses will be offered in sequence each semester. This program will have minimal impact on the teaching loads of current faculty. See Appendix C for a faculty roster. The roster list the courses taught, the academic degrees, along with additional qualifications of the faculty.

LIBRARY AND LEARNING RESOURCES

St. Philip's College Learning Resources Center provides an educational environment that stimulates leadership, personal growth, and a lifelong appreciation for learning. The Center operates the Library, Computer Operations, and Media Services. Resources are available to enhance classroom instruction and meet the needs of students, faculty, staff, and administrators. A large number of resources are available on and off-campus at both the MLK and SW campuses. The College has requested new books, periodicals, and electronic media to support the Power Generation and Alternative Energy program. The following resources are available to all students:

- Alamo College Libraries Catalog
- Electronic Databases
- InterLibrary Loan (ILL)
- Links to Other Libraries

To further assist students with their research related needs, the College provides

- Anatomical Models
- Assistive Technology for Special Needs
- 36 Computers with MS 2007 and Internet
- Copy Machines
- Current Magazines and Periodicals
- Individual and Group Study Areas
- Full-Text Microfiche
- Music CDs

St. Philip's College students can request information and research related needs through an online "Ask a Librarian" service. This service is available 24/7 for research assistance within 24 hours. In addition, there is a chat service available. Faculty and students can request library instruction training. Available to students are Library Guides compiled by the librarians to assist students with their research and provide subject-specific guides and other resourceful information.

Library and Media Services for Southwest Campus (SWC) is in C123, Building 1. The SWC Library offers many types of resources, including books, print magazine and journal subscriptions, online databases of articles, reference material, books, and multimedia, the Ask-A-Librarian service, and more. Twenty-two public computers are available in the Library for student use, each with a fast Internet connection and Microsoft Office software. One librarian, one part-time librarian, and a para-professional currently staff the Library. To better serve the new Centers for Excellence in Math and Science, the Library was recently expanded, renovated, and enhanced. It now has a larger Media Services component and Circulation/Reserves/Interlibrary Loan area. It also includes a library instruction classroom, individual and group study rooms, a media viewing room, an enclosed photocopy area, a small conference room, study stations and a workroom. The renovated facility also features a media production room equipped with technology where students can experiment with multimedia for classroom presentations, and staff and faculty offices for quiet work, consultations, and phone calls.

The current library maintains a collection of almost 70 print magazines, journals, and newspapers. Titles include both career related sources, such as *Aerosafety World*, *American Statistician*, *Brake & Front End*, *Construction Equipment*, *Modern Woodworking*, *Light Plane Maintenance*, as well as leisure reading materials such as, *U.S. News & World Report*, *Hispanic, Latina*, *Ebony*, and *Sports Illustrated*. To support college faculty and classroom instruction, the

library also subscribes to *Community College Journal*, *College Teaching*, and *Mathematics Teacher*. Our materials are based on the requests of faculty and to meet the needs of library patrons. Each department has a librarian assigned to work with the classroom faculty in collection management as well as library instruction.

Specifically for these programs, we have subscribed to four print mathematics journals requested for the Center for Excellence in Science and have added a three-year subscription to Gale Cengage Learning's *Global Reference on the Environment, Energy, & Natural Resources (GREENR)*. We are in the process of submitting a subscription to *Current Collections* from Thomson Reuters for four coverage areas – Agriculture, Biology, & Environmental Sciences, Engineering, Computing, & Technology, Life Sciences, and Physical, Chemicals, & Earth Sciences. These will allow students to study emerging trends and keep up with research in their fields. Faculty will also be able to locate grant opportunities as well as incorporate new knowledge from the field into classroom instruction.

PHYSICAL RESOURCES

Scheduled for renovation within the next two years is the second floor of the Dr. William C. Davis building. This floor currently houses three general biology laboratories and a prep room. Upon completion of the renovation there will be several additional biology teaching labs as well as a research laboratory. There will soon be four new lecture classrooms on the third floor in addition to the four classrooms on the second floor. Classes will also be conducted at the recently renovated Centers of Excellence in Science facility at the Southwest Campus (SWC) of St. Philip's College. In the facility, there is an additional laboratory and additional lecture classrooms. For the course offerings, the laboratory facilities are equipped with the latest equipment. This equipment includes:

- Mini centrifuges
- Thermal cycler
- Water bath
- Rocking platform,
- Incubation oven,
- Gel dryers
- Vortex
- Power supplies
- GT electrophoresis chambers
- UV lamps
- Digital camera and dock

FINANCIAL SUPPORT

Funding for the Associate of Science in Biotechnology program comes from three sources: tuition, lab fee, and state contact hour reimbursement. The total projected revenue for 1 year: \$100,576.12

Tuition: \$34,668.00

Fees: \$3,456.00

Contact Hour: \$62,452.12

There are no plans to expend funds for ongoing contractual or support services for the program. The operation and management of the program will fall under the Natural Sciences Department. No additional management oversight will be required. Any additional funds needed for the program will be provided through the department's annual operating budget.

EVALUATION AND ASSESSMENT

The college uses various means to assess the effectiveness of instructional programs. No one instrument can provide a comprehensive evaluation of program effectiveness so the college uses a combination of voluntary and mandatory programs to evaluate instructional effectiveness.

Instructor evaluation by Chair. The Chair evaluates the performance of each instructor annually until the instructor is granted tenure, then they are evaluated every other year. Chair's evaluate the progress of the instructor toward tenure and promotion at this time.

Instructor classroom observation by Chair. The Chair observes the instructors in the classroom and makes recommendations to improve the instructors performance. This observation is also used by the tenure and promotion committee to evaluate instructors for promotion and tenure.

Peer reviews. A group of three tenured instructors observes all non-tenured faculty once each year to ensure all instructors meet college standards of performance in the classroom. This observation is also used by the tenure and promotion committee to evaluate instructors for promotion and tenure.

Student surveys. 100 percent of a nontenured faculty classes and 50 percent of tenured faculty classes are evaluated each semester. The evaluations are used by the Chair of the department for yearly performance appraisals. The evaluations are also used to evaluate faculty for promotion and tenure.

Practicum assessment by employers. Each student who completes a workforce program engages in a practicum experience where they complete at least 224 hours on-site with a

local employer. The employer evaluates the student and the program to determine if the college is meeting their expectations.

Quality Enhancement Program. We are in the third year of QEP and will be evaluating 100 percent of classes offered by the college to determine how effectively our students meet our critical thinking requirements.

Community College Survey of Student Engagement. The college uses the CCSSE to determine how effectively the college is engaging students in the college experience and how it affects learning outcomes.

THECB reports on participation, graduation, and placement. The college must meet THECB goals to maintain programs in good standing with the state. Programs that fail to meet standards must develop an action plan to address shortcomings or face deactivation of the program.

APPENDIX A.

Regular Board Meeting Signed Approval Notice