

DELGADO COMMUNITY COLLEGE

Science Laboratory Technology, A.A.S. Chemical Technology Concentration

Program Handbook

Welcome!

The faculty and staff of the Delgado Community College (DCC) Science Laboratory Technology – Chemical Technology Concentration, A.A.S. (Chem-Tech) Program are excited to have you join our program. The DCC Science Laboratory Technology Program, located on the City Park and West Bank Campuses, provides students with the education and skills necessary to begin a career in chemical technology. We actively seek guidance from an Advisory Committee selected from local industry and transfer institutions, and strive to ensure the education and training you receive from the DCC Laboratory Sciences Program is cutting edge and relevant in the current job market. Our teaching faculty includes scientists with a broad range of interests and expertise. State of the art laboratories offer students in our program unique opportunities to gain valuable hands-on experience. Additionally, DCC has partnered with local leaders in the chemical technology community, through which many of our students may find internships and, subsequent employment. The program offers an Associate of Applied Science degree, ideal for first-time and career changing students, and a Career Studies Certificate, designed for those who already possess a college degree. Whichever option is better suited to your background; we look forward to partnering with you in your preparation for a career in chemical technology.

This Chem-Tech Student Handbook is designed to provide you important information about the program, and is meant to supplement the DCC Student Handbook. If you have any further questions about the Science Laboratory Technology Program please feel free to contact:

Mr. Raymond Duplessis (Program Coordinator) 504-671-6419

Summary of the Chemical Technology Concentration Discipline

The Chemical Technology Concentration (Chem-Tech) provides students the necessary skills and techniques for standard, everyday science laboratory work. Chem-Tech focuses on the fundamental principles of chemistry and emphasizes analytical laboratory techniques and applications, specifically in the realms of chemistry and its applications. The curriculum will enable the student to explore a variety of laboratory testing techniques and to prepare and operate various types of tools and electronic analysis equipment. Chem-Tech prepares graduates for employment in chemical, biological, and associated science laboratories. The science laboratory technology fields of opportunity include chemical, biological, agricultural and food science, environmental science and prevention, forensic, forest and conservation, geological, and energy technology. This program focuses on chemical technology concentrations with laboratory experiences that cover a variety of applications in water, environmental, forensic, petrochemical, and agricultural, science areas.

Goal of the Program (Student Learning Outcomes)

The goal of the program is to develop a graduate workforce to perform as science laboratory technicians. Upon the completion of this program the student will be able to:

1. Obtain employment as an **entry-level** science laboratory technician in a wide variety of contemporary chemical technology professional settings including academic, industry or government settings.
2. Use fundamental knowledge of chemistry to understand the scientific principles involved in the science laboratory.
3. Understand the function of a science laboratory technician in the workplace. Describe, operate and maintain tools and equipment in the science laboratory. Develop and adapt protocols to obtain and interpret data.
4. Demonstrate **excellent communications skills** (oral and written) to ensure optimal communication with shift co-workers, first line supervisors, maintenance personnel, safety personnel, contractors and other members of the site team.

Attributes of a Science Laboratory Technology Professional

The purpose of this program is to provide students with the knowledge and hands-on experience necessary to be successful as an entry-level Chemistry Laboratory Technician. Some of the essential attributes of such a Professional include the abilities to:

- Perform basic entry-level lab duties, and understand basic lab functions
- Generate, evaluate and correlate accurate data in a laboratory setting, and collaborate in the production and/or development of chemical products.
- Manage detailed information, ensure regulatory compliance, and provide continual quality assurance.
- Work independently and collaboratively in a professional manner, being responsible for her/his own actions.
- Demonstrate knowledge of finance, operations, marketing, and human resource management within a laboratory setting.
- Communicate effectively with peers, exercise reasoned judgment, and demonstrate ethical and moral principles necessary to gain and maintain the confidence of superiors, peers, and the public.

Employment Outlook

Chemical Technology is a broad, diverse and growing field. According to the Bureau of Labor Statistics, Occupational Outlook Handbook, 2014-2015 Edition, in 2008 science technicians held approximately 270,800 jobs with chemical and biological sciences comprising 54 percent of the field and a projected field wide growth of 17% percent by 2022. The expected sectors of higher growth are listed as biological (10%), chemical (9%), environmental (19%), and forensic (20%). In Louisiana, chemical, biological, environmental science and protection technician jobs are expected to grow. Initial inquiries to business as to the need of this program suggests that there is a current and growing market for this type of trained individual in the Greater New Orleans and southern Louisiana and Mississippi regions.

In Chemical Technology, the projected employment is expected to increase nationally the areas of professional, scientific and technical services by 4.5%. Due to the variety of chemistry and biochemistry courses chemical technicians complete, they are also in demand in environmental labs, forensic labs and agricultural based labs. According to the Bureau of Labor Statistics, chemical and forensic technicians earn a median and hourly wage of \$20.25 and \$23.97, respectively. Louisiana rates in the top five in pay with chemical technicians in Louisiana enjoying an average annual wage estimated at \$52,335 with most having completed an associate level degree. The annual demand total in Louisiana is 80 jobs per year with 10 new jobs and 70 jobs replaced per year. Our program being unique to the region aims to supply that annual demand. Louisiana also expects to have growth in non-traditional fields such as metal fabrication. Several of our chemistry and physical science faculty have ties to several industry and academic leaders in growing fields in the area and aggressively seek internship and potential employment opportunities for our students.

MISSION STATEMENTS

DELGADO COMMUNITY COLLEGE MISSION STATEMENT

Delgado Community College provides a learning centered environment in which to prepare students from diverse backgrounds to attain their educational, career, and personal goals, to think critically, to demonstrate leadership, and to be productive and responsible citizens.

SCIENCE LABORATORY TECHNOLOGY PROGRAM MISSION STATEMENT

Science Laboratory Technology is a multidisciplinary field that increasingly requires skilled entry-level workers in our area. The DCC Science Laboratory Technology Program offers students the opportunity to acquire the knowledge and skills required to start a career in the biotechnology and chemical industry. Recognizing that the educator is the critical link between these industries and a dynamic workforce, it is the mission of the DCC Science Laboratory Technology Program to provide exceptional quality education and hands-on training while delivering a technologically relevant workforce to our local industry partners. Our Program faculty members are student-focused scientists committed to providing leadership in our local biotechnology and chemical technology educational pipeline.

Associate of Applied Science: Science Laboratory Technology

Students wishing to enroll in the A.A.S. in SLT Program should proceed through the following steps for admission, starting at least one semester prior to when they wish to enroll in the program:

1. **Attend an information session or schedule an advising appointment with a SLT Academic advisor.** This can be completed prior to or after steps 2–4. Students are encouraged to seek information very early in the process.
2. **Apply to Delgado Community College** • New and transfer students must apply to Delgado Community College before their applications can be considered. New students should enroll in the A.S. - Louisiana Transfer degree program prior to their acceptance into the program.
3. **Provide High School and College transcripts and ACT Test scores for evaluation and proper course placement. Based on the evaluation of materials, placements tests may be required.**
4. **Complete pre-admission requirements for the program.** • Students applying to the A.A.S degree must have documentation of placement in or completion of the following:
 - BIOL-141 General Biology I
 - BIOL-143 General Biology I Lab
 - CHEM-141 General Chemistry I
 - CHEM-143 General Chemistry I Lab
 - ENGL-101 English Composition I or the equivalent
 - MATH-130 Pre-Calculus Algebra or the equivalent
5. **Apply to the program.**

Students need to complete the application found on the Chemical Technology Program website: <http://www.dcc.edu/academics/science-math/science/slt/chemicaltech/default.aspx/>.

E-mail it to the program coordinator Raymond Duplessis at rduple@dcc.edu. A faculty advisor will review the student's application, test scores, and transcripts to confirm the student is eligible for admission. An advising session will be scheduled, if not already completed. Students accepted into the program will be notified by email. For complete details, please review the, "**Detailed Application Process for the Associate of Applied Science: Science Laboratory Technology Program**" section starting on the next page.

Detailed Application Process for the Associate of Applied Science: Science Laboratory Technology Program

A. Delgado Application Requirements

- **If you are currently a Delgado Community College student** you must place your LoLa number on all application paperwork. **There is no need to re-apply to Delgado.**
- **If you are a Non-Delgado Community College student**, you must apply to the College. Please go the Delgado website at <http://www.dcc.edu> and click the “APPLY NOW” button.

B. AAS-SLT Program Application Requirements

- **PRE-REQUISITE COURSES – PRIOR TO APPLYING** Applicants should have a minimum grade of “C” or better and a combined GPA of at least 2.5 on a 4 point scale in the following courses:
 - BIOL-141 General Biology I
 - BIOL-143 General Biology I Lab
 - CHEM-141 General Chemistry I
 - CHEM-143 General Chemistry I Lab
 - ENGL-101 English Composition I or the equivalent
 - MATH-130 Pre-Calculus Algebra or the equivalent
- **CUMULATIVE GPA** - Overall grade point average in all college work (all colleges attended) of at least 2.0 on a 4 point scale

C. Documentation Requirements

- **Transcripts**

Please Note: The appropriate DCC Division Dean must approve Courses taken more than 10 years prior to entry. The AAS-SLT Program will seek the approval on behalf of the student.

One official transcript from every college previously attended other than DCC must be submitted. Separate official transcripts are required from each college attended although that course work may be printed on another transcript as transferred coursework. Unofficial advising reports are not acceptable. If a college will not release an official transcript to a student and must mail it directly to Delgado, the student must request that the transcript be mailed to the Science and Math Division c/o AAS-SLT. Documentation verifying the date the student requested the transcript (a copy of the transcript order form) must be included with the application package. The student may have the college E-script the transcripts to Delgado Community College. Please document on the AAS-SLT application that E-script was used. The applicant is completely responsible for ensuring that transcripts sent directly to the AAS-SLT program are received before the application deadline.

- **Course Descriptions**

A catalog course description must be submitted for each course taken outside the DCC curriculum that applies to the nursing curriculum (please refer to DCC catalog course curriculum page) for which a student is seeking transfer credit. Course descriptions may be photocopies or printouts from online catalogs. The course numbers on catalog course descriptions must match those on the transcript. The student’s name and DCC ID number must be listed on the course description. Course descriptions are not needed for courses completed at DCC campuses.

D. Admissions Policies

- A student may not have more than four (4) enrollments resulting in grades D, F or W in General Biology I and General Chemistry I and Pre-Calculus Algebra (BIOL 141, BIOL 143, CHEM 141, CHEM 143 and MATH 130) or the equivalent taken within the last 5 years of possible of entry into the program.
- Falsification of any admissions requirements /documentation will result in denial of admission into the program. The student may be subject to a judicial procedure through the college.

E. Transfer

General education courses completed at another accredited institution will be evaluated for equivalency. Students desiring to transfer from another school to the AAS-SLT Program must do the following:

1. Transfer students must meet the DCC and AAS-SLT admission requirements. All Admission and Academic policies apply to the transfer student.
2. Transfer students must submit an application packet to the AAS-SLT Program to include: The AAS-SLT Application and Official transcripts from **ALL** colleges attended.
3. Transfer students must meet the academic requirements as to the number of grades of D's, F's or W's in general education and required related courses. A student that has unsuccessful grades (D's and F's) in greater than 12 hours general education and required related courses is ineligible for admission into the AAS-SLT Program. A minimum grade of "C" is required in all general education and required related courses in the AAS-SLT curriculum.

F. Continuing Education and Training

Those desiring to take courses within the AAS-SLT curriculum for training or continuing education purposes will be evaluated on a case-by-case basis including those that have been established through industry partnership agreements.

G. The Selection Process

The faculty advisors of the AAS-SLT Program consider applicants for admission.

1. Cumulative College GPA of a 2.0 or higher on (all college courses taken).
2. AAS-SLT - GPA of a 2.5 or higher for any of the general education and required related courses in the AAS-SLT Program curriculum.
3. Number of grades of D's and/or F's in courses taken over the past 5 years that are required in the AAS-SLT Program curriculum. **Even if the course has been repeated with a higher grade the D or F is still counted.**
4. Number of completed credits in the required, required related, and general education courses in the AAS-SLT Program curriculum.
5. Please note that points are given for completion of required, required related, and general education courses AAS-SLT Program completed other than the **Pre-Requisite Courses for Application**.
6. ACT score if required. (Photocopies of scores listed on high school transcripts are acceptable). Only for students with < 15 credit hours.

I. Application Submission

Complete and type the Delgado/AAS-SLT Application Packet and submit with required documents to the DCC/AAS-SLT program.

- Application packets may be submitted by E-mail, U.S. Mail or hand delivered. Make sure your application is complete and contains all of the required documents, before posting or delivering. Unofficial transcripts may be sent with the packet to expedite review for conditional acceptance, but official transcripts must be received to confirm acceptance.
- The AAS-SLT program will not accept any additional application material after the student has submitted the application and documents unless documentation shows that a college or university will be sending a transcript on behalf of the student.
- Incomplete applications or applications submitted with missing documents will be returned and candidates must wait until the next deadline to re-apply.
- AAS-SLT program is not responsible for late delivery or failed delivery of application materials. Mail your AAS-SLT Application Package and required attachments to:
 - Delgado/AAS-SLT - Admissions
615 City Park Avenue
Division Of Science and Math
Bldg. 2 – 137E
New Orleans, LA 70119

J. Criminal History Check

When a student is selected and granted admission to AAS-SLT, admission is conditional and all students will be subject to obtain a criminal background history check prior to enrollment to the program.

K. Communications You Should Receive from Admissions

There are three types of communication that will be sent from SLT Program Admissions.

1. Acceptance notification. **Upon acceptance into the program, register for courses as directed by your faculty advisor.**
2. Enrollment Maximum Reached – The student is qualified for the program but scored below the profile cutoff.
3. Ineligible - The student not qualified to apply:
 - a. Student has not received a High School Diploma or GED
 - b. Student has not completed remedial courses.
 - c. Cumulative or DCC GPA is too low.
 - d. Student has exceeded the number of allowed “D” or lower grades.
 - e. Student has not completed the DCC application and paid the \$25.00 fee

L. Application Process for Career Studies Certificates in Biotechnology and Chemical Technology

Students applying to the Career Studies Certificate in SLT must complete all of the pre-admission requirements as outlined for the A.A.S. in SLT with the exception that applications will only be accepted for students enrolling in the fall semester. In addition, a student must have completed a college degree (Associate of Science degree or higher). Foreign students must document the equivalent to a U.S. Associate’s Degree. Students without a science degree are strongly advised to complete the A.A.S. in Science Laboratory Technology instead of the Career Studies Certificate.

Academic Advising

Upon acceptance to a program of study, each student will be assigned an academic advisor from among the SLT faculty. Some classes are offered only in certain semesters or at a particular campus. For this reason it is essential that all students work closely with their advisor and before each semester ends to develop an appropriate course schedule for the following semester.

Academic Policies for SLT Program

The academic policies found in this handbook are specific to the DCC Science Laboratory Program and are **in addition to** the policies set forth in DCC's Student Handbook.

- **Communication**

All students are required to use their official DCC email accounts to communicate with program faculty and staff. Sending emails from your personal account (yahoo, msn, etc.) is not permitted. In addition to your official DCC email account, program faculty and staff will notify you of course information through Blackboard. Please check Blackboard and your email on a daily basis.

- **Attendance**

Students are expected to attend every class meeting and to arrive to class on time prepared for the day's activities. This includes bringing any assignments that are due, materials for note taking, calculators, etc. Specific attendance policies are found in the syllabus of each course. However, the program has some general attendance policies as outlined below.

1. **Lecture:** The student is responsible for notifying the instructor of any unavoidable absence. Properly documented absences may be excused at the discretion of the instructor. Excessive absence from class, as described in the course syllabi will result in an automatic grade of "F" for the course.
2. **Laboratory:** Absences from laboratory sessions are particularly problematic. Laboratory skills learned in one lab are utilized as the "building block" of another. The skills learned in the laboratory are essential for entry into an internship. Due to costs and scheduling, no make-up labs will be allowed. . Excessive absence from laboratory sessions, as described in the course syllabi will result in an automatic grade of "F" for the course.
3. **Internship:** Regular and punctual attendance at the internship site is required. Students should carefully review the attendance policies stated within the internship course syllabus. Absences (or tardiness) from internship obligations for reasons other than health or family emergencies will not be tolerated and the student may be subjected to dismissal from the internship.

- **Electronic Devices**

All electronic devices should be set to silent mode at all times in the classroom. This includes smart phones, tablets, and laptops. The use of electronic devices may be permitted for research activities or note-taking in the classroom (at the discretion of the instructor); however they may not be used to take calls, read or write text messages, or emails during class. The use of these devices is not only distracting to you but also to your fellow classmates and instructor.

- **Academic Integrity**

Academic Integrity is an essential component of professional behavior in any SLT program. Academic work (homework, lab reports, exams, quizzes, etc.) submitted by students shall be the result of their own thought, research, or self-expression. When students borrow ideas, wording, or organization from another source, they shall reference that information in an appropriate manner.

Each student is expected to read the DCC Student Handbook regarding academic dishonesty. The SLT Program strictly adheres to DCC's policies on student conduct: "Delgado Community College is a learning community with

specific expectations concerning the conduct of its students. The College's approach to student learning and student conduct is to provide a safe and healthy learning environment that facilitates the mission of the College. When a student's conduct adversely affects the College's pursuit of its educational objectives, actions will be taken to remedy the situation."

Laboratory Preparation

Working in a chemical technology laboratory can be fun and rewarding when all members arrive prepared and follow some common-sense rules. The SLT program expects each student to always be mindful of the potential hazards found in the laboratory and to be respectful of the policies and procedures.

- ***Safety Training***

The student is required to attend safety training prior to performing any experiments. Each student is required to watch a safety video, complete in-person safety training with the instructor or laboratory staff, and sign the safety policy document that indicates acknowledgement of laboratory safety rules. These safety training activities are completed on the first day of laboratory class. This emphasizes the importance of good laboratory attendance.

- ***Dress Code***

Students must be properly attired when working in a LST laboratory. Shoes must be closed-toed. Leather-type tennis or similar shoes are strongly recommended. Clogs, crocs, or other backless shoes are not allowed. All long hair should be drawn back in a clip or a band so as not to hang in the face or interfere with laboratory experiments. Long pants or long skirts are required at all times in the laboratory. No skin on the legs should be exposed to possible chemical contamination. Laboratory coats are required when performing experiments. When not in use, the lab coat is to be stored in its designated area. Lab coats may NEVER be worn outside the laboratory.

- ***Restricted Laboratory Access***

Due to the presence of potential hazards, the laboratory must be considered "off-limits" to students when an instructor or laboratory staff member is not present.

- ***Laboratory Etiquette***

The SLT labs have been well equipped with tools to enhance your program experience. Each student is responsible for the proper handling of each piece of lab equipment used. At the conclusion of each lab meeting, all equipment should be turned off and put away in the proper location, all materials should be disposed of properly (as indicated by the instructor or lab staff), and all benches should be properly cleaned and in ready to use condition for the next class.

THE AAS-SLT CHEMICAL TECHNOLOGY CONCENTRATION CURRICULUM

REQUIRED COURSES IN MAJOR (42)

Required grade of "C" or higher.

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- BIOL-141 General Biology I (3)
 - BIOL-143 General Biology I Lab (1)
 - CHEM-141 General Chemistry I (3)
 - CHEM-143 General Chemistry I Lab (1)
 - CHEM-142 General Chemistry II (3)
 - CHEM-144 General Chemistry II Lab (1)
 - CHEM-221 Organic Chemistry I (3)
 - CHEM-223 Organic Chemistry I Lab (1)
 - CHEM-222 Organic Chemistry II (3)
 - CHEM-224 Organic Chemistry II Lab (1)
 - MATH-203 Statistics (3)
 - CHTC-130 Intro to Chemical Technology (2)
 - CHTC-132 Chemistry Lab Techniques (2)
 - SLTC-299 Internship I (3)
 - Chemical Technology Concentration (18)

GENERAL EDUCATION REQUIREMENTS (12)

Required grade of "C" or higher.

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- ENGL-101 English Composition I (3)
 - MATH-130 Pre-Calculus Algebra (3)
 - SPCH-130 Fundamentals of Speech (3)
 - ECON 202 Microeconomics *or*
 - PSYC 127 General Psychology (3)
 - Natural Science Requirement Met In Required Courses In Major (BIOL 141 or CHEM 141)

CHEMICAL TECHNOLOGY CONCENTRATION (18)

Required grade of "C" or higher.

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- PHYS-101 Elementary Physics I (3)
 - CHEM-241 Analytical Chemistry (3)
 - CHEM-243 Analytical Chemistry Lab (1)
 - CHTC-261 Instrumental Analysis (2)
 - CHTC 271 Applied Instrumental Analysis I (3)
 - CHTC -272 Applied Instrumental Analysis II (3)

CHOOSE ONE (1) COURSE FROM THE FOLLOWING LIST

- CHTC -273 Applied Instrumental Analysis III (3)
- CHTC -274 Applied Instrumental Analysis IV (3)
- CHTC -281 Applied Organic Chemistry Lab (3)

TOTAL CREDIT HOURS: 60

NOTE:

See [Graduation Requirements](#)