CERTIFICATE

Paralegal Studies: Bilingual (English/Spanish)

Certificate of Achievement

Career/Technical (Major Code: A2519)

BUS 226	Interpretation/Translation: Legal	3
BUS 229	Legal Terminology—Bilingual (English/Spanish)	3
LEGL 255	Introduction to Law and Legal Terminology	3
LEGL 256	International Law for Business	3
LEGL 258	Legal Communications	3
LEGL 259	Legal Assistant: An Introduction	1
LEGL 260	Legal Research	3
LEGL 261	Civil Litigation I	3
LEGL 262	Immigration Law and Procedure	3
LEGL 270	Computer Skills for Legal Professionals	2.5
LEGL 290–293		
	Legal Cooperative Work Experience I–IV * (2–4)	2–4
SPAN 216	Spanish for Bilinguals II	5
Complete 5 units from the courses listed below:		5
LEGL 225	Law Office Management (3)	
LEGL 263	Family Law (3)	
LEGL 264	Wills, Trusts, and Estates (3)	
LEGL 266	Mediation, Negotiation, and Conflict Management (2)	
LEGL 267	Interviewing and Investigation for Paralegals (2)	
LEGL 268	Computer Assisted Legal Research (2)	
LEGL 269	Civil Litigation Procedures (3)	
LEGL 272	Business Organizations (2)	
	Total units	**39.5–41.5**

Note: The certificate of achievement is awarded only to students who possess an associate or higher degree in any major prior to completing the paralegal program.

* 60 or more hours of on-the-job work experience internship, paid or volunteer, are required in the LEGL 290–293 series. Program faculty and Student Employment assist students with placements, which can consist of as few as four hours per week for students working full-time. Students who are presently employed in a law office may use their employment to fulfill their requirement. These hours must be spread over a minimum of two semesters and can include summer work. The instructor must approve the work experience for application to the program.

** Native speakers from a Spanish-speaking country who have finished high school or the equivalent in that country will have satisfied the Spanish language requirement. Students who have completed high school in the United States and have completed the fourth-year level of Spanish will have satisfied the Spanish language requirement.

Note: The Paralegal Studies Program prepares students to work under the supervision of an attorney in accordance with California law. A paralegal may not engage in the unauthorized practice of law by accepting cases, giving legal advice, appearing in court or setting fees for clients. To do so would be a crime in the state of California.

Pharmaceutical and Laboratory Science

School of Mathematics, Science, and Engineering

Dean Janet Mazzarella, M.A., Office 215A, 619-482-6344
Faculty David R. Brown, Ph.D.; David Hecht, Ph.D.; Tinh-Alfredo V. Khuong, Ph. D.; Jacquelyn Thomas, M.S.
Department Chair Tinh-Alfredo V. Khuong, Ph.D.

General Description

The chemical industry is diverse, vast, and touches nearly every aspect of our lives on a daily basis. Pharmaceutical and laboratory science is a discipline in which chemical principles are applied to solve problems or produce materials in a wide range of fields in the areas of high-technology, consumer products, and healthcare. An education in pharmaceutical and laboratory science provides the skills and knowledge essential to carry out the tasks necessary to push forward the progress of the multi-billion dollar chemical industry, including hands-on experience with state-of-the-art analytical instrumentation, small molecule synthesis, computational methods, and protein electrophoresis and purification.

Career Options

The San Diego region is home to one of the highest concentrations of pharmaceutical, biotechnology, and other chemistry-based industries in the United States. An ever-increasing demand for skilled chemical technicians exists in the local job market. Graduates of the program will have gained the knowledge and skills necessary to perform many of the key laboratory tasks undertaken in a variety of industrial settings where research and development and/or manufacturing take place. Chemical technicians provide valuable support in companies involved in drug discovery, environmental and forensics analyses, development of new materials, petroleum refining, and the manufacturing of plastics, electronic materials, textiles, paints, foods and beverages, and cosmetics, among many others.

Degree/Certificate Options	Major Code
Associate in Science Degree: Career Technical	
Pharmaceutical and Laboratory Science	A1532
Certificate of Achievement	
Pharmaceutical and Laboratory Science	A1533

Consult with a counselor to develop a Student Education Plan (SEP), which lists the courses necessary to achieve your academic goal.

Web site for Pharmaceutical and Laboratory Science major: **http://www.swccd.edu/~chemtech**

Some courses within this program may require additional coursework that must be completed prior to enrollment in those courses. Please consult the individual course listings for prerequisites and any other limitations on enrollment.

ASSOCIATE IN SCIENCE DEGREE

Pharmaceutical and Laboratory Science

Career/Technical (Major Code: A1532)

Composed of a comprehensive collection of instructional and laboratory experiences directed toward readying graduates for entry-level positions in a wide variety of chemistry-based industries such as pharmaceutical, biotechnology, paints and coatings, and electronic materials. The program curriculum is structured to equip students with many of the technical skills and competencies identified by the American Chemical Society as essential in the preparation of well-trained chemical technicians.

Prerequisites

MATH 121	Applied Calculus I (3)	
	OR	3–5
MATH 250	Analytic Geometry and Calculus I (5)	
CHEM 200	General Chemistry I	5
CHEM 210	General Chemistry II	5
	Total units	**13–15**

First Semester

CHEM 150	Introduction to Chemical Technology	2
CHEM 180	Computational Methods in Chemistry	2
MATH 122	Applied Calculus II (3)	
	OR	3–4
MATH 251	Analytic Geometry and Calculus II (4)	
PHYS 170	College Physics I	
	OR	3
PHYS 270	Principles of Physics I	
PHYS 171	College Physics Laboratory I	
	OR	1
PHYS 271	Principles of Physics Laboratory I	

Second Semester

CHEM 190	Chemical Health and Safety	2
PHYS 172	College Physics II	
	AND	
PHYS 173	College Physics Laboratory II	
	OR	4
PHYS 272	Principles of Physics II	
	AND	
PHYS 273	Principles of Physics Laboratory II	

Third Semester

CHEM 240	Organic Chemistry I	5
CHEM 250	Analytical Chemistry	5

Fourth Semester

CHEM 160	Introductory Biochemistry	3
CHEM 242	Organic Chemistry II	5
CHEM 244	Organic Analysis and Spectroscopy	2
	Total units	**37–38**

To earn an associate degree, additional general education and graduation requirements must be completed. See page 49.

CERTIFICATE

Pharmaceutical and Laboratory Science

Certificate of Achievement

Career/Technical (Major Code: A1533)

First Semester

CHEM 150	Introduction to Chemical Technology	2
CHEM 180	Computational Methods in Chemistry	2
MATH 122	Applied Calculus II (3)	
	OR	3–4
MATH 251	Analytic geometry and Calculus II (4)	
PHYS 170	College Physics I	
	OR	3
PHYS 270	Principles of Physics I	
PHYS 171	College Physics Laboratory I	
	OR	1
PHYS 271	Principles of Physics Laboratory I	

Second Semester

CHEM 190	Chemical Health and Safety	2
PHYS 172	College Physics II	
	AND	
PHYS 173	College Physics Laboratory II	
	OR	4
PHYS 272	Principles of Physics II	
	AND	
PHYS 273	Principles of Physics Laboratory II	

Third Semester

CHEM 240	Organic Chemistry I	5
CHEM 250	Analytical Chemistry	5

Fourth Semester

CHEM 160	Introductory Biochemistry	3
CHEM 242	Organic Chemistry II	5
CHEM 244	Organic Analysis and Spectroscopy	2
	Total units	**37–38**